DSL Group12 CONSUMER COMPLAINTS TIMELY RESPONSE PREDICTION

June 13, 2021

```python
[174]: import matplotlib.pyplot as plt
       import pandas as pd
       import numpy as np
       import seaborn as sns
       sns.set_theme(style="ticks", color_codes=True)
       plt.rcParams["figure.figsize"] = (20,7)
       from sklearn import model_selection, preprocessing, linear_model, naive_bayes,
        →metrics, svm
       from sklearn.naive_bayes import MultinomialNB
       from sklearn.linear_model import LogisticRegression
       from sklearn.ensemble import RandomForestClassifier
       from sklearn.svm import LinearSVC
       from sklearn.model_selection import cross_val_score
       from sklearn.model_selection import train_test_split
       from sklearn.metrics import f1_score, confusion_matrix, classification_report
       from sklearn import preprocessing
       import os
```

```python
[175]: # le = preprocessing.LabelEncoder()
```

```python
[176]: # import zipfile
       # UNZIP_PATH = 'D:/PGDBA 2020-22/2Second_sem_IIT_Kgp/DSL/project/Group/App/'
       # with zipfile.ZipFile(UNZIP_PATH + 'data.zip', 'r') as zip_ref:
       #     zip_ref.extractall('D:/PGDBA 2020-22/2Second_sem_IIT_Kgp/DSL/project/
        →Group/App/')
```

```python
[185]: df1 = pd.read_csv('data.csv')
```

```python
[186]: df1.head()
```

```
[186]:                    PRODUCT                SUB_PRODUCT  \
       0                 Mortgage             Other mortgage
       1                 Mortgage             Other mortgage
       2             Student loan  Non-federal student loan
       3          Debt collection                Credit card
       4  Bank account or service           Checking account
```

```
                                  ISSUE                              COMPANY  \
0  Loan modification,collection,foreclosure                       U.S. Bancorp
1  Loan servicing, payments, escrow account                  Wells Fargo & Company
2                        Repaying your loan                 Navient Solutions, Inc.
3         False statements or representation  Resurgent Capital Services L.P.
4                    Deposits and withdrawals                      Bank of America

   STATE SUBMITTED_VIA COMPANY_RESPONSE_TO_CONSUMER TIMELY_RESPONSE  \
0     CA      Referral         Closed with explanation             Yes
1     CA      Referral         Closed with explanation             Yes
2     MD         Email         Closed with explanation             Yes
3     GA           Web         Closed with explanation             Yes
4     IL      Referral         Closed with explanation             Yes

   CONSUMER_DISPUTED?  DATE_DIFF
0                 Yes        4.0
1                 Yes        4.0
2                 Yes       19.0
3                 Yes        0.0
4                  No        0.0
```

[187]:
```python
# df1['PRODUCT'] = le.fit_transform(df1['PRODUCT'])
```

[188]:
```python
# le.classes_
```

[189]:
```python
# le.inverse_transform([0,1,2,3,4,5,6,7,8])
```

[295]:
```python
from sklearn.model_selection import StratifiedKFold
def cross(model):
    train_f1 = []
    test_f1 = []
    kf = StratifiedKFold(n_splits=3,random_state= 123, shuffle=True)
    for train_index, test_index in kf.split(X,y):
        cv_train, cv_test =X.iloc[train_index], X.iloc[test_index]
        y_train, y_test =y.iloc[train_index], y.iloc[test_index]

        model.fit(cv_train, y_train)
        train_acc = f1_score(y_train, model.predict(cv_train), average = 'macro')
        train_f1.append(train_acc)
        test_acc = f1_score(y_test, model.predict(cv_test), average = 'macro')
        test_f1.append(test_acc)
    return np.mean(train_f1), np.mean(test_f1)
```

[190]:
```python
t10c = df1['COMPANY'].value_counts()[0:100].index.to_list()
```

[191]:
```python
len(t10c)
```

```
[191]: 100
```

```
[192]: df1['COMPANY'] = df1['COMPANY'].apply(lambda x: x if (x in t10c) else 'others')
```

```
[265]: df1.shape
```

```
[265]: (393951, 10)
```

```
[207]: data1 = df1[df1['TIMELY_RESPONSE'] == 'Yes']
       data2 = df1[df1['TIMELY_RESPONSE'] == 'No']
```

```
[208]: data1.shape
```

```
[208]: (380750, 10)
```

```
[209]: data2.shape
```

```
[209]: (13201, 10)
```

```
[283]: shuffled = data1.sample(frac=1)
       splits = 27
       data1_split = np.array_split(shuffled, splits)
```

1 Algorithm

```
[307]: X_test_all = pd.DataFrame()
       y_test_all = pd.DataFrame()
       for i in range(splits):
           data = pd.concat([data1_split[i], data2], ignore_index = True)
           print("\n\n")
           print('Shape of data' + ' ' + str(i) + ' ' +'is :')
           print(data.shape)
           print('Distribution of' + ' ' + str(i) + ' ' + 'is :')
           print(data.TIMELY_RESPONSE.value_counts())
           y = data['TIMELY_RESPONSE']
           X = data.drop(columns = ['TIMELY_RESPONSE', 'CONSUMER_DISPUTED?'])
           X_train, X_test, y_train, y_test = train_test_split(X,y, stratify = y,
        ↪test_size = 0.07, random_state = i)
           cf = ['PRODUCT', 'SUB_PRODUCT', 'ISSUE', 'COMPANY',
        ↪'STATE','SUBMITTED_VIA','COMPANY_RESPONSE_TO_CONSUMER']
           # cf = ['PRODUCT', 'SUBMITTED_VIA','COMPANY_RESPONSE_TO_CONSUMER']
           import catboost as cb
           cat_model = cb.CatBoostClassifier(iterations = 200, random_state = i,
        ↪cat_features = cf, learning_rate = 0.1)
```

```python
    cat_model.fit(X_train, y_train,eval_set=(X_test, y_test),␣
→use_best_model=True,plot=True, silent = True)
    print('Train f1_score [Yes]: for data' + ' ' + str(i) + ' ' + 'is :',␣
→f1_score(y_true = y_train, y_pred = cat_model.predict(X_train),␣
→average="binary", pos_label="Yes"))
    print('Train f1_score [No]: for data' + ' ' + str(i) + ' ' + 'is :',␣
→f1_score(y_true = y_train, y_pred = cat_model.predict(X_train),␣
→average="binary", pos_label="No"))
    y_pred = cat_model.predict(X_test)
    print(classification_report(y_true = y_test, y_pred = y_pred))
    fig = plt.figure(figsize=(6, 6))
    ax= plt.subplot()
    cm = confusion_matrix(y_true=y_test,y_pred=y_pred)
    sns.heatmap(cm, annot=True, ax = ax, fmt = 'g', xticklabels = ['No','Yes'],␣
→yticklabels = ['No','Yes'])
    ax.set_xlabel('Predicted label')
    ax.set_ylabel('Actual label')
    plt.show()
    print('Cross validation result for data' + ' ' + str(i) + ' ' + 'is :')
    a,b = cross(cat_model)
    print('Mean train f1-score of data (CV)' + ' ' + str(i) + ' ' + 'is :', a)
    print('Mean test f1-score of data (CV)' + ' ' + str(i) + ' ' + 'is :', b)
    if (X_test_all.shape[0] == 0):
        X_test_all = X_test.copy()
        y_test_all = y_test.copy()
    else:
        X_test_all = pd.concat([X_test_all, X_test], axis = 0)
        y_test_all = pd.concat([y_test_all, y_test], axis = 0)

    #Model pickling
    import pickle
    file = open('data' + str(i) + 'model.pkl', 'wb')
    pickle.dump(cat_model,file)
```

```
Shape of data 0 is :
(27303, 10)
Distribution of 0 is :
Yes    14102
No     13201
Name: TIMELY_RESPONSE, dtype: int64

<IPython.core.display.HTML object>

MetricVisualizer(layout=Layout(align_self='stretch', height='500px'))

Train f1_score [Yes]: for data 0 is : 0.8122067610378153
```
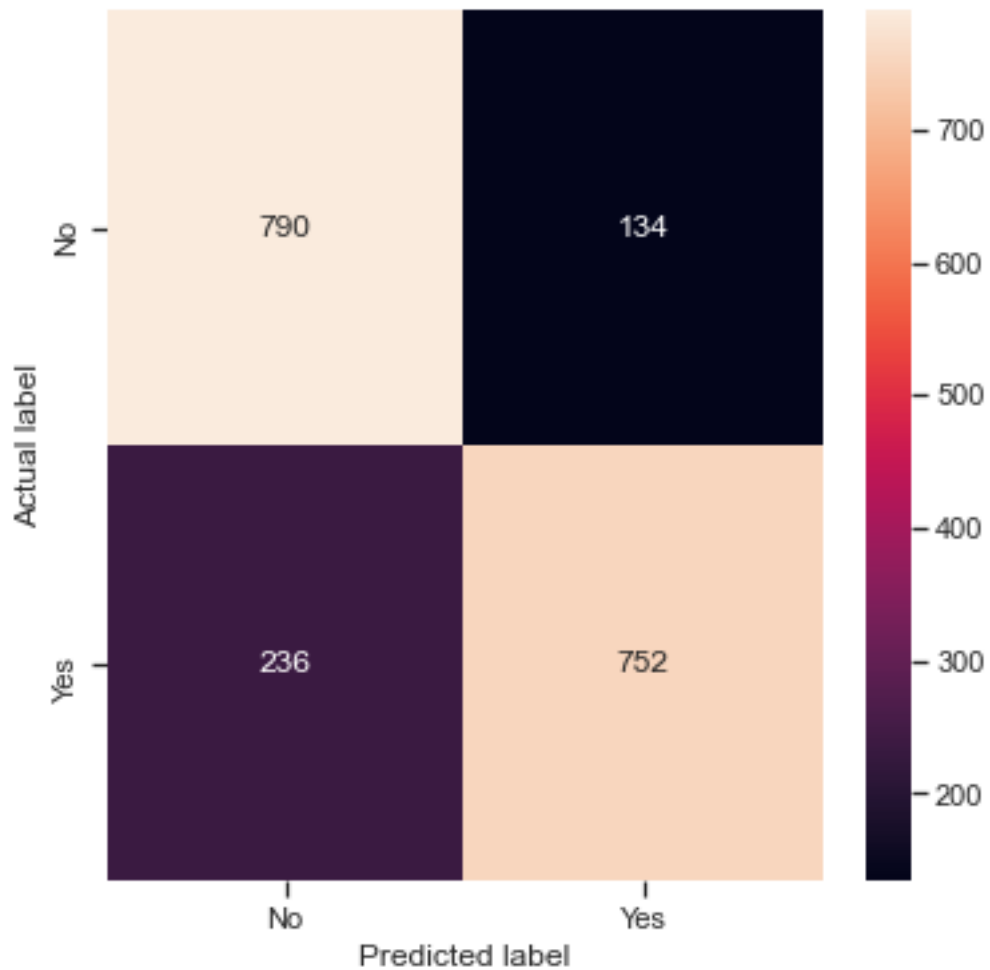
```
Train f1_score [No]: for data 0 is : 0.8188044109112013
              precision    recall  f1-score   support

          No       0.77      0.85      0.81       924
         Yes       0.85      0.76      0.80       988

    accuracy                           0.81      1912
   macro avg       0.81      0.81      0.81      1912
weighted avg       0.81      0.81      0.81      1912
```



```
Cross validation result for data 0 is :
0:      learn: 0.6329810        total: 41.8ms    remaining: 8.32s
1:      learn: 0.5906892        total: 91.4ms    remaining: 9.05s
2:      learn: 0.5641798        total: 135ms     remaining: 8.86s
3:      learn: 0.5447405        total: 178ms     remaining: 8.7s
4:      learn: 0.5228521        total: 225ms     remaining: 8.76s
```

```
 5:        learn: 0.5105343        total: 269ms     remaining: 8.7s
 6:        learn: 0.5001678        total: 337ms     remaining: 9.29s
 7:        learn: 0.4911784        total: 381ms     remaining: 9.14s
 8:        learn: 0.4839942        total: 423ms     remaining: 8.97s
 9:        learn: 0.4777957        total: 469ms     remaining: 8.91s
10:        learn: 0.4727227        total: 520ms     remaining: 8.94s
11:        learn: 0.4681999        total: 566ms     remaining: 8.87s
12:        learn: 0.4647968        total: 614ms     remaining: 8.83s
13:        learn: 0.4623233        total: 661ms     remaining: 8.79s
14:        learn: 0.4595783        total: 709ms     remaining: 8.75s
15:        learn: 0.4570794        total: 759ms     remaining: 8.72s
16:        learn: 0.4556544        total: 806ms     remaining: 8.68s
17:        learn: 0.4537090        total: 853ms     remaining: 8.62s
18:        learn: 0.4522688        total: 900ms     remaining: 8.57s
19:        learn: 0.4509520        total: 942ms     remaining: 8.48s
20:        learn: 0.4492157        total: 993ms     remaining: 8.46s
21:        learn: 0.4482401        total: 1.04s     remaining: 8.43s
22:        learn: 0.4472438        total: 1.09s     remaining: 8.37s
23:        learn: 0.4463220        total: 1.13s     remaining: 8.31s
24:        learn: 0.4456344        total: 1.17s     remaining: 8.22s
25:        learn: 0.4447723        total: 1.22s     remaining: 8.13s
26:        learn: 0.4440027        total: 1.26s     remaining: 8.08s
27:        learn: 0.4433872        total: 1.3s      remaining: 8.01s
28:        learn: 0.4420778        total: 1.37s     remaining: 8.07s
29:        learn: 0.4413913        total: 1.45s     remaining: 8.22s
30:        learn: 0.4403573        total: 1.5s      remaining: 8.17s
31:        learn: 0.4397698        total: 1.54s     remaining: 8.1s
32:        learn: 0.4390470        total: 1.59s     remaining: 8.05s
33:        learn: 0.4386069        total: 1.66s     remaining: 8.1s
34:        learn: 0.4383165        total: 1.71s     remaining: 8.06s
35:        learn: 0.4373976        total: 1.75s     remaining: 7.99s
36:        learn: 0.4368778        total: 1.81s     remaining: 7.99s
37:        learn: 0.4362804        total: 1.86s     remaining: 7.93s
38:        learn: 0.4358620        total: 1.91s     remaining: 7.89s
39:        learn: 0.4352487        total: 1.96s     remaining: 7.82s
40:        learn: 0.4347500        total: 2.01s     remaining: 7.81s
41:        learn: 0.4345270        total: 2.06s     remaining: 7.74s
42:        learn: 0.4341890        total: 2.1s      remaining: 7.67s
43:        learn: 0.4338980        total: 2.14s     remaining: 7.6s
44:        learn: 0.4337115        total: 2.19s     remaining: 7.55s
45:        learn: 0.4334563        total: 2.25s     remaining: 7.52s
46:        learn: 0.4332382        total: 2.29s     remaining: 7.46s
47:        learn: 0.4326186        total: 2.34s     remaining: 7.41s
48:        learn: 0.4319782        total: 2.4s      remaining: 7.41s
49:        learn: 0.4315294        total: 2.47s     remaining: 7.4s
50:        learn: 0.4314736        total: 2.5s      remaining: 7.32s
51:        learn: 0.4313728        total: 2.56s     remaining: 7.29s
52:        learn: 0.4312004        total: 2.6s      remaining: 7.22s
```

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53:     learn: 0.4311106      total: 2.65s    remaining: 7.17s
54:     learn: 0.4309102      total: 2.7s     remaining: 7.12s
55:     learn: 0.4306575      total: 2.75s    remaining: 7.06s
56:     learn: 0.4305730      total: 2.79s    remaining: 7.01s
57:     learn: 0.4304785      total: 2.83s    remaining: 6.94s
58:     learn: 0.4303820      total: 2.89s    remaining: 6.91s
59:     learn: 0.4292253      total: 2.94s    remaining: 6.86s
60:     learn: 0.4290585      total: 2.98s    remaining: 6.8s
61:     learn: 0.4287660      total: 3.03s    remaining: 6.75s
62:     learn: 0.4285956      total: 3.08s    remaining: 6.7s
63:     learn: 0.4284607      total: 3.14s    remaining: 6.68s
64:     learn: 0.4281132      total: 3.18s    remaining: 6.61s
65:     learn: 0.4279345      total: 3.22s    remaining: 6.54s
66:     learn: 0.4273789      total: 3.28s    remaining: 6.5s
67:     learn: 0.4273701      total: 3.32s    remaining: 6.44s
68:     learn: 0.4268163      total: 3.36s    remaining: 6.38s
69:     learn: 0.4267138      total: 3.41s    remaining: 6.33s
70:     learn: 0.4265845      total: 3.45s    remaining: 6.26s
71:     learn: 0.4262945      total: 3.5s     remaining: 6.22s
72:     learn: 0.4260735      total: 3.54s    remaining: 6.17s
73:     learn: 0.4260308      total: 3.6s     remaining: 6.13s
74:     learn: 0.4258119      total: 3.64s    remaining: 6.07s
75:     learn: 0.4255319      total: 3.69s    remaining: 6.02s
76:     learn: 0.4249021      total: 3.73s    remaining: 5.96s
77:     learn: 0.4241542      total: 3.78s    remaining: 5.91s
78:     learn: 0.4240932      total: 3.83s    remaining: 5.86s
79:     learn: 0.4238773      total: 3.89s    remaining: 5.84s
80:     learn: 0.4232550      total: 3.93s    remaining: 5.78s
81:     learn: 0.4229825      total: 3.99s    remaining: 5.74s
82:     learn: 0.4227714      total: 4.03s    remaining: 5.68s
83:     learn: 0.4226997      total: 4.08s    remaining: 5.63s
84:     learn: 0.4224790      total: 4.12s    remaining: 5.58s
85:     learn: 0.4224437      total: 4.16s    remaining: 5.51s
86:     learn: 0.4221638      total: 4.21s    remaining: 5.47s
87:     learn: 0.4214669      total: 4.25s    remaining: 5.42s
88:     learn: 0.4211985      total: 4.32s    remaining: 5.39s
89:     learn: 0.4211105      total: 4.38s    remaining: 5.35s
90:     learn: 0.4206245      total: 4.43s    remaining: 5.31s
91:     learn: 0.4205720      total: 4.47s    remaining: 5.25s
92:     learn: 0.4205719      total: 4.49s    remaining: 5.16s
93:     learn: 0.4205291      total: 4.53s    remaining: 5.11s
94:     learn: 0.4203909      total: 4.57s    remaining: 5.05s
95:     learn: 0.4203289      total: 4.62s    remaining: 5.01s
96:     learn: 0.4201358      total: 4.67s    remaining: 4.96s
97:     learn: 0.4200362      total: 4.71s    remaining: 4.9s
98:     learn: 0.4195776      total: 4.77s    remaining: 4.86s
99:     learn: 0.4194511      total: 4.83s    remaining: 4.83s
100:    learn: 0.4192762      total: 4.88s    remaining: 4.79s
```

```
101:    learn: 0.4191513    total: 4.92s    remaining: 4.73s
102:    learn: 0.4185882    total: 4.97s    remaining: 4.68s
103:    learn: 0.4184384    total: 5.01s    remaining: 4.62s
104:    learn: 0.4183785    total: 5.06s    remaining: 4.58s
105:    learn: 0.4179235    total: 5.11s    remaining: 4.53s
106:    learn: 0.4174432    total: 5.18s    remaining: 4.5s
107:    learn: 0.4172510    total: 5.23s    remaining: 4.45s
108:    learn: 0.4170299    total: 5.28s    remaining: 4.41s
109:    learn: 0.4165347    total: 5.34s    remaining: 4.37s
110:    learn: 0.4163938    total: 5.4s     remaining: 4.33s
111:    learn: 0.4158688    total: 5.44s    remaining: 4.27s
112:    learn: 0.4157720    total: 5.49s    remaining: 4.23s
113:    learn: 0.4157042    total: 5.54s    remaining: 4.18s
114:    learn: 0.4154153    total: 5.6s     remaining: 4.14s
115:    learn: 0.4150943    total: 5.64s    remaining: 4.09s
116:    learn: 0.4149294    total: 5.69s    remaining: 4.03s
117:    learn: 0.4146174    total: 5.75s    remaining: 4s
118:    learn: 0.4140458    total: 5.8s     remaining: 3.95s
119:    learn: 0.4136631    total: 5.86s    remaining: 3.91s
120:    learn: 0.4133049    total: 5.9s     remaining: 3.85s
121:    learn: 0.4131535    total: 5.98s    remaining: 3.82s
122:    learn: 0.4131186    total: 6.03s    remaining: 3.77s
123:    learn: 0.4124009    total: 6.07s    remaining: 3.72s
124:    learn: 0.4123788    total: 6.12s    remaining: 3.67s
125:    learn: 0.4120006    total: 6.18s    remaining: 3.63s
126:    learn: 0.4115846    total: 6.23s    remaining: 3.58s
127:    learn: 0.4115699    total: 6.27s    remaining: 3.53s
128:    learn: 0.4115021    total: 6.31s    remaining: 3.47s
129:    learn: 0.4114425    total: 6.37s    remaining: 3.43s
130:    learn: 0.4108428    total: 6.42s    remaining: 3.38s
131:    learn: 0.4106835    total: 6.46s    remaining: 3.33s
132:    learn: 0.4105276    total: 6.52s    remaining: 3.28s
133:    learn: 0.4102700    total: 6.57s    remaining: 3.24s
134:    learn: 0.4101681    total: 6.62s    remaining: 3.19s
135:    learn: 0.4101036    total: 6.66s    remaining: 3.14s
136:    learn: 0.4100130    total: 6.71s    remaining: 3.08s
137:    learn: 0.4099338    total: 6.76s    remaining: 3.04s
138:    learn: 0.4095615    total: 6.83s    remaining: 3s
139:    learn: 0.4095237    total: 6.88s    remaining: 2.95s
140:    learn: 0.4092992    total: 6.93s    remaining: 2.9s
141:    learn: 0.4091883    total: 6.98s    remaining: 2.85s
142:    learn: 0.4086481    total: 7.02s    remaining: 2.8s
143:    learn: 0.4084013    total: 7.08s    remaining: 2.75s
144:    learn: 0.4082125    total: 7.14s    remaining: 2.71s
145:    learn: 0.4081017    total: 7.19s    remaining: 2.66s
146:    learn: 0.4079417    total: 7.23s    remaining: 2.61s
147:    learn: 0.4077483    total: 7.27s    remaining: 2.56s
148:    learn: 0.4076567    total: 7.31s    remaining: 2.5s
```

```
149:     learn: 0.4073258     total: 7.37s     remaining: 2.46s
150:     learn: 0.4071907     total: 7.43s     remaining: 2.41s
151:     learn: 0.4069646     total: 7.47s     remaining: 2.36s
152:     learn: 0.4067631     total: 7.52s     remaining: 2.31s
153:     learn: 0.4066584     total: 7.57s     remaining: 2.26s
154:     learn: 0.4063234     total: 7.62s     remaining: 2.21s
155:     learn: 0.4062572     total: 7.68s     remaining: 2.17s
156:     learn: 0.4062156     total: 7.74s     remaining: 2.12s
157:     learn: 0.4060671     total: 7.78s     remaining: 2.07s
158:     learn: 0.4059063     total: 7.83s     remaining: 2.02s
159:     learn: 0.4058412     total: 7.88s     remaining: 1.97s
160:     learn: 0.4056577     total: 7.95s     remaining: 1.93s
161:     learn: 0.4054827     total: 7.99s     remaining: 1.87s
162:     learn: 0.4052796     total: 8.05s     remaining: 1.83s
163:     learn: 0.4052566     total: 8.09s     remaining: 1.77s
164:     learn: 0.4051237     total: 8.13s     remaining: 1.72s
165:     learn: 0.4049479     total: 8.18s     remaining: 1.67s
166:     learn: 0.4045905     total: 8.23s     remaining: 1.63s
167:     learn: 0.4044939     total: 8.28s     remaining: 1.58s
168:     learn: 0.4043700     total: 8.32s     remaining: 1.53s
169:     learn: 0.4042755     total: 8.38s     remaining: 1.48s
170:     learn: 0.4039198     total: 8.43s     remaining: 1.43s
171:     learn: 0.4036279     total: 8.48s     remaining: 1.38s
172:     learn: 0.4035356     total: 8.53s     remaining: 1.33s
173:     learn: 0.4033507     total: 8.58s     remaining: 1.28s
174:     learn: 0.4031820     total: 8.64s     remaining: 1.23s
175:     learn: 0.4030388     total: 8.7s      remaining: 1.19s
176:     learn: 0.4029092     total: 8.75s     remaining: 1.14s
177:     learn: 0.4027938     total: 8.82s     remaining: 1.09s
178:     learn: 0.4027028     total: 8.86s     remaining: 1.04s
179:     learn: 0.4025874     total: 8.93s     remaining: 992ms
180:     learn: 0.4025163     total: 8.98s     remaining: 943ms
181:     learn: 0.4024027     total: 9.03s     remaining: 893ms
182:     learn: 0.4021722     total: 9.07s     remaining: 843ms
183:     learn: 0.4021011     total: 9.12s     remaining: 793ms
184:     learn: 0.4020178     total: 9.15s     remaining: 742ms
185:     learn: 0.4017627     total: 9.2s      remaining: 693ms
186:     learn: 0.4016329     total: 9.24s     remaining: 643ms
187:     learn: 0.4012762     total: 9.29s     remaining: 593ms
188:     learn: 0.4012212     total: 9.34s     remaining: 544ms
189:     learn: 0.4011282     total: 9.4s      remaining: 495ms
190:     learn: 0.4011258     total: 9.45s     remaining: 445ms
191:     learn: 0.4009486     total: 9.5s      remaining: 396ms
192:     learn: 0.4006968     total: 9.56s     remaining: 347ms
193:     learn: 0.4004949     total: 9.64s     remaining: 298ms
194:     learn: 0.4004439     total: 9.7s      remaining: 249ms
195:     learn: 0.4002718     total: 9.76s     remaining: 199ms
196:     learn: 0.4000562     total: 9.8s      remaining: 149ms
```

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197:     learn: 0.3999077     total: 9.86s     remaining: 99.6ms
198:     learn: 0.3998003     total: 9.91s     remaining: 49.8ms
199:     learn: 0.3995813     total: 9.97s     remaining: 0us
0:       learn: 0.6326069     total: 41.7ms    remaining: 8.29s
1:       learn: 0.5911394     total: 79.1ms    remaining: 7.83s
2:       learn: 0.5648590     total: 123ms     remaining: 8.1s
3:       learn: 0.5469901     total: 163ms     remaining: 8s
4:       learn: 0.5331989     total: 202ms     remaining: 7.88s
5:       learn: 0.5203571     total: 244ms     remaining: 7.89s
6:       learn: 0.5082015     total: 286ms     remaining: 7.88s
7:       learn: 0.4976656     total: 354ms     remaining: 8.5s
8:       learn: 0.4877828     total: 428ms     remaining: 9.09s
9:       learn: 0.4796302     total: 477ms     remaining: 9.06s
10:      learn: 0.4734427     total: 522ms     remaining: 8.96s
11:      learn: 0.4685871     total: 563ms     remaining: 8.82s
12:      learn: 0.4645795     total: 617ms     remaining: 8.87s
13:      learn: 0.4611047     total: 665ms     remaining: 8.84s
14:      learn: 0.4581126     total: 711ms     remaining: 8.77s
15:      learn: 0.4560359     total: 769ms     remaining: 8.85s
16:      learn: 0.4545140     total: 820ms     remaining: 8.83s
17:      learn: 0.4531483     total: 881ms     remaining: 8.91s
18:      learn: 0.4511025     total: 920ms     remaining: 8.76s
19:      learn: 0.4496744     total: 982ms     remaining: 8.84s
20:      learn: 0.4484802     total: 1.05s     remaining: 8.94s
21:      learn: 0.4473595     total: 1.1s      remaining: 8.89s
22:      learn: 0.4463699     total: 1.15s     remaining: 8.84s
23:      learn: 0.4455445     total: 1.19s     remaining: 8.74s
24:      learn: 0.4446122     total: 1.25s     remaining: 8.73s
25:      learn: 0.4437960     total: 1.31s     remaining: 8.8s
26:      learn: 0.4426084     total: 1.36s     remaining: 8.75s
27:      learn: 0.4419566     total: 1.4s      remaining: 8.61s
28:      learn: 0.4411497     total: 1.47s     remaining: 8.65s
29:      learn: 0.4410531     total: 1.52s     remaining: 8.65s
30:      learn: 0.4399587     total: 1.62s     remaining: 8.86s
31:      learn: 0.4392677     total: 1.7s      remaining: 8.94s
32:      learn: 0.4389282     total: 1.8s      remaining: 9.11s
33:      learn: 0.4386478     total: 1.88s     remaining: 9.2s
34:      learn: 0.4378906     total: 2.04s     remaining: 9.6s
35:      learn: 0.4377241     total: 2.13s     remaining: 9.69s
36:      learn: 0.4364925     total: 2.21s     remaining: 9.72s
37:      learn: 0.4363262     total: 2.29s     remaining: 9.76s
38:      learn: 0.4355323     total: 2.35s     remaining: 9.71s
39:      learn: 0.4352630     total: 2.42s     remaining: 9.67s
40:      learn: 0.4350599     total: 2.48s     remaining: 9.62s
41:      learn: 0.4345550     total: 2.53s     remaining: 9.52s
42:      learn: 0.4341861     total: 2.59s     remaining: 9.46s
43:      learn: 0.4339340     total: 2.64s     remaining: 9.35s
44:      learn: 0.4332630     total: 2.68s     remaining: 9.22s
```

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45:     learn: 0.4325389     total: 2.74s     remaining: 9.17s
46:     learn: 0.4320793     total: 2.81s     remaining: 9.14s
47:     learn: 0.4319056     total: 2.88s     remaining: 9.13s
48:     learn: 0.4315603     total: 3.01s     remaining: 9.27s
49:     learn: 0.4315603     total: 3.03s     remaining: 9.08s
50:     learn: 0.4312224     total: 3.08s     remaining: 9s
51:     learn: 0.4307201     total: 3.13s     remaining: 8.92s
52:     learn: 0.4301754     total: 3.22s     remaining: 8.94s
53:     learn: 0.4299288     total: 3.3s      remaining: 8.92s
54:     learn: 0.4298821     total: 3.41s     remaining: 8.99s
55:     learn: 0.4288989     total: 3.53s     remaining: 9.08s
56:     learn: 0.4287271     total: 3.65s     remaining: 9.15s
57:     learn: 0.4282435     total: 3.73s     remaining: 9.14s
58:     learn: 0.4281449     total: 3.84s     remaining: 9.19s
59:     learn: 0.4279574     total: 3.94s     remaining: 9.19s
60:     learn: 0.4279266     total: 3.99s     remaining: 9.1s
61:     learn: 0.4278619     total: 4.05s     remaining: 9.02s
62:     learn: 0.4275252     total: 4.1s      remaining: 8.92s
63:     learn: 0.4271149     total: 4.18s     remaining: 8.89s
64:     learn: 0.4270049     total: 4.24s     remaining: 8.8s
65:     learn: 0.4266952     total: 4.29s     remaining: 8.7s
66:     learn: 0.4265648     total: 4.33s     remaining: 8.59s
67:     learn: 0.4264574     total: 4.37s     remaining: 8.49s
68:     learn: 0.4263258     total: 4.42s     remaining: 8.38s
69:     learn: 0.4261865     total: 4.46s     remaining: 8.28s
70:     learn: 0.4260591     total: 4.52s     remaining: 8.21s
71:     learn: 0.4259843     total: 4.56s     remaining: 8.11s
72:     learn: 0.4255861     total: 4.62s     remaining: 8.04s
73:     learn: 0.4254330     total: 4.67s     remaining: 7.96s
74:     learn: 0.4254266     total: 4.71s     remaining: 7.85s
75:     learn: 0.4251081     total: 4.76s     remaining: 7.77s
76:     learn: 0.4245338     total: 4.82s     remaining: 7.71s
77:     learn: 0.4241752     total: 4.88s     remaining: 7.63s
78:     learn: 0.4236039     total: 4.95s     remaining: 7.57s
79:     learn: 0.4235133     total: 5.01s     remaining: 7.51s
80:     learn: 0.4232110     total: 5.08s     remaining: 7.46s
81:     learn: 0.4228880     total: 5.19s     remaining: 7.47s
82:     learn: 0.4223074     total: 5.25s     remaining: 7.4s
83:     learn: 0.4221614     total: 5.3s      remaining: 7.32s
84:     learn: 0.4219746     total: 5.35s     remaining: 7.24s
85:     learn: 0.4219730     total: 5.37s     remaining: 7.11s
86:     learn: 0.4219150     total: 5.41s     remaining: 7.03s
87:     learn: 0.4217788     total: 5.46s     remaining: 6.94s
88:     learn: 0.4215013     total: 5.53s     remaining: 6.9s
89:     learn: 0.4213544     total: 5.57s     remaining: 6.81s
90:     learn: 0.4212861     total: 5.62s     remaining: 6.73s
91:     learn: 0.4209712     total: 5.69s     remaining: 6.68s
92:     learn: 0.4208282     total: 5.74s     remaining: 6.61s
```

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93:     learn: 0.4207520    total: 5.79s    remaining: 6.53s
94:     learn: 0.4206198    total: 5.83s    remaining: 6.44s
95:     learn: 0.4205377    total: 5.9s     remaining: 6.39s
96:     learn: 0.4203125    total: 5.94s    remaining: 6.31s
97:     learn: 0.4202507    total: 5.99s    remaining: 6.23s
98:     learn: 0.4201043    total: 6.04s    remaining: 6.16s
99:     learn: 0.4197678    total: 6.08s    remaining: 6.08s
100:    learn: 0.4194360    total: 6.13s    remaining: 6s
101:    learn: 0.4187575    total: 6.19s    remaining: 5.94s
102:    learn: 0.4186009    total: 6.22s    remaining: 5.86s
103:    learn: 0.4179660    total: 6.27s    remaining: 5.79s
104:    learn: 0.4177242    total: 6.32s    remaining: 5.71s
105:    learn: 0.4173002    total: 6.37s    remaining: 5.65s
106:    learn: 0.4172425    total: 6.43s    remaining: 5.59s
107:    learn: 0.4171183    total: 6.49s    remaining: 5.53s
108:    learn: 0.4167583    total: 6.55s    remaining: 5.47s
109:    learn: 0.4166878    total: 6.61s    remaining: 5.41s
110:    learn: 0.4164647    total: 6.66s    remaining: 5.34s
111:    learn: 0.4163110    total: 6.73s    remaining: 5.29s
112:    learn: 0.4160381    total: 6.78s    remaining: 5.22s
113:    learn: 0.4153991    total: 6.83s    remaining: 5.15s
114:    learn: 0.4151890    total: 6.88s    remaining: 5.08s
115:    learn: 0.4151843    total: 6.92s    remaining: 5.01s
116:    learn: 0.4150342    total: 6.99s    remaining: 4.96s
117:    learn: 0.4150271    total: 7.03s    remaining: 4.89s
118:    learn: 0.4146936    total: 7.08s    remaining: 4.82s
119:    learn: 0.4141120    total: 7.12s    remaining: 4.75s
120:    learn: 0.4140014    total: 7.18s    remaining: 4.69s
121:    learn: 0.4139243    total: 7.22s    remaining: 4.62s
122:    learn: 0.4133088    total: 7.29s    remaining: 4.56s
123:    learn: 0.4130360    total: 7.34s    remaining: 4.5s
124:    learn: 0.4129171    total: 7.38s    remaining: 4.43s
125:    learn: 0.4125973    total: 7.43s    remaining: 4.36s
126:    learn: 0.4125141    total: 7.48s    remaining: 4.3s
127:    learn: 0.4125115    total: 7.53s    remaining: 4.24s
128:    learn: 0.4119346    total: 7.6s     remaining: 4.18s
129:    learn: 0.4117225    total: 7.65s    remaining: 4.12s
130:    learn: 0.4115968    total: 7.69s    remaining: 4.05s
131:    learn: 0.4114816    total: 7.74s    remaining: 3.99s
132:    learn: 0.4113810    total: 7.79s    remaining: 3.92s
133:    learn: 0.4112332    total: 7.84s    remaining: 3.86s
134:    learn: 0.4111027    total: 7.87s    remaining: 3.79s
135:    learn: 0.4108570    total: 7.93s    remaining: 3.73s
136:    learn: 0.4107169    total: 7.97s    remaining: 3.67s
137:    learn: 0.4103017    total: 8.02s    remaining: 3.6s
138:    learn: 0.4102619    total: 8.07s    remaining: 3.54s
139:    learn: 0.4102412    total: 8.14s    remaining: 3.49s
140:    learn: 0.4100945    total: 8.18s    remaining: 3.42s
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141:    learn: 0.4100146      total: 8.23s      remaining: 3.36s
142:    learn: 0.4099166      total: 8.27s      remaining: 3.3s
143:    learn: 0.4098560      total: 8.31s      remaining: 3.23s
144:    learn: 0.4097072      total: 8.36s      remaining: 3.17s
145:    learn: 0.4096359      total: 8.4s       remaining: 3.11s
146:    learn: 0.4094765      total: 8.46s      remaining: 3.05s
147:    learn: 0.4093060      total: 8.53s      remaining: 3s
148:    learn: 0.4092329      total: 8.58s      remaining: 2.94s
149:    learn: 0.4092072      total: 8.63s      remaining: 2.88s
150:    learn: 0.4089571      total: 8.69s      remaining: 2.82s
151:    learn: 0.4088458      total: 8.74s      remaining: 2.76s
152:    learn: 0.4085915      total: 8.78s      remaining: 2.7s
153:    learn: 0.4084305      total: 8.83s      remaining: 2.64s
154:    learn: 0.4083859      total: 8.88s      remaining: 2.58s
155:    learn: 0.4077516      total: 8.92s      remaining: 2.52s
156:    learn: 0.4074179      total: 8.97s      remaining: 2.46s
157:    learn: 0.4071709      total: 9.02s      remaining: 2.4s
158:    learn: 0.4070837      total: 9.06s      remaining: 2.34s
159:    learn: 0.4068810      total: 9.12s      remaining: 2.28s
160:    learn: 0.4066167      total: 9.18s      remaining: 2.22s
161:    learn: 0.4066147      total: 9.24s      remaining: 2.17s
162:    learn: 0.4064743      total: 9.28s      remaining: 2.11s
163:    learn: 0.4064012      total: 9.35s      remaining: 2.05s
164:    learn: 0.4061131      total: 9.41s      remaining: 2s
165:    learn: 0.4060302      total: 9.46s      remaining: 1.94s
166:    learn: 0.4059654      total: 9.5s       remaining: 1.88s
167:    learn: 0.4059637      total: 9.54s      remaining: 1.82s
168:    learn: 0.4058664      total: 9.58s      remaining: 1.76s
169:    learn: 0.4057616      total: 9.62s      remaining: 1.7s
170:    learn: 0.4055003      total: 9.67s      remaining: 1.64s
171:    learn: 0.4054190      total: 9.72s      remaining: 1.58s
172:    learn: 0.4053040      total: 9.76s      remaining: 1.52s
173:    learn: 0.4051574      total: 9.8s       remaining: 1.46s
174:    learn: 0.4051383      total: 9.86s      remaining: 1.41s
175:    learn: 0.4050326      total: 9.9s       remaining: 1.35s
176:    learn: 0.4048630      total: 9.96s      remaining: 1.29s
177:    learn: 0.4047435      total: 10s        remaining: 1.24s
178:    learn: 0.4045782      total: 10.1s      remaining: 1.18s
179:    learn: 0.4041327      total: 10.1s      remaining: 1.12s
180:    learn: 0.4039523      total: 10.2s      remaining: 1.07s
181:    learn: 0.4038723      total: 10.2s      remaining: 1.01s
182:    learn: 0.4037542      total: 10.3s      remaining: 954ms
183:    learn: 0.4036704      total: 10.3s      remaining: 897ms
184:    learn: 0.4035594      total: 10.4s      remaining: 840ms
185:    learn: 0.4034755      total: 10.4s      remaining: 783ms
186:    learn: 0.4034561      total: 10.4s      remaining: 726ms
187:    learn: 0.4033183      total: 10.5s      remaining: 669ms
188:    learn: 0.4028044      total: 10.5s      remaining: 613ms
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189:     learn: 0.4026634     total: 10.6s     remaining: 557ms
190:     learn: 0.4026042     total: 10.6s     remaining: 501ms
191:     learn: 0.4021935     total: 10.7s     remaining: 445ms
192:     learn: 0.4020878     total: 10.7s     remaining: 389ms
193:     learn: 0.4019033     total: 10.8s     remaining: 333ms
194:     learn: 0.4018419     total: 10.8s     remaining: 277ms
195:     learn: 0.4018221     total: 10.8s     remaining: 221ms
196:     learn: 0.4017236     total: 10.9s     remaining: 166ms
197:     learn: 0.4015955     total: 10.9s     remaining: 111ms
198:     learn: 0.4014664     total: 11s       remaining: 55.2ms
199:     learn: 0.4012310     total: 11s       remaining: 0us
0:       learn: 0.6313230     total: 53.8ms    remaining: 10.7s
1:       learn: 0.5884711     total: 104ms     remaining: 10.3s
2:       learn: 0.5650396     total: 149ms     remaining: 9.77s
3:       learn: 0.5441449     total: 188ms     remaining: 9.2s
4:       learn: 0.5209998     total: 228ms     remaining: 8.9s
5:       learn: 0.5077666     total: 268ms     remaining: 8.67s
6:       learn: 0.4970761     total: 316ms     remaining: 8.72s
7:       learn: 0.4872080     total: 370ms     remaining: 8.87s
8:       learn: 0.4815830     total: 409ms     remaining: 8.69s
9:       learn: 0.4750109     total: 461ms     remaining: 8.76s
10:      learn: 0.4708090     total: 529ms     remaining: 9.09s
11:      learn: 0.4667377     total: 588ms     remaining: 9.21s
12:      learn: 0.4625759     total: 630ms     remaining: 9.06s
13:      learn: 0.4594750     total: 675ms     remaining: 8.96s
14:      learn: 0.4579744     total: 717ms     remaining: 8.84s
15:      learn: 0.4554879     total: 776ms     remaining: 8.93s
16:      learn: 0.4534285     total: 827ms     remaining: 8.9s
17:      learn: 0.4516636     total: 880ms     remaining: 8.9s
18:      learn: 0.4502293     total: 918ms     remaining: 8.74s
19:      learn: 0.4488806     total: 955ms     remaining: 8.59s
20:      learn: 0.4472081     total: 998ms     remaining: 8.51s
21:      learn: 0.4455457     total: 1.05s     remaining: 8.51s
22:      learn: 0.4441236     total: 1.11s     remaining: 8.52s
23:      learn: 0.4433495     total: 1.15s     remaining: 8.43s
24:      learn: 0.4422436     total: 1.19s     remaining: 8.35s
25:      learn: 0.4417451     total: 1.24s     remaining: 8.28s
26:      learn: 0.4408298     total: 1.28s     remaining: 8.2s
27:      learn: 0.4401204     total: 1.32s     remaining: 8.08s
28:      learn: 0.4395098     total: 1.36s     remaining: 8.02s
29:      learn: 0.4387076     total: 1.41s     remaining: 8s
30:      learn: 0.4378662     total: 1.46s     remaining: 7.95s
31:      learn: 0.4367964     total: 1.5s      remaining: 7.88s
32:      learn: 0.4362527     total: 1.55s     remaining: 7.87s
33:      learn: 0.4357909     total: 1.6s      remaining: 7.83s
34:      learn: 0.4352796     total: 1.65s     remaining: 7.76s
35:      learn: 0.4352788     total: 1.66s     remaining: 7.56s
36:      learn: 0.4350901     total: 1.71s     remaining: 7.53s
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37:     learn: 0.4347606     total: 1.77s     remaining: 7.55s
38:     learn: 0.4341467     total: 1.82s     remaining: 7.5s
39:     learn: 0.4338422     total: 1.86s     remaining: 7.44s
40:     learn: 0.4335615     total: 1.91s     remaining: 7.4s
41:     learn: 0.4331879     total: 1.95s     remaining: 7.33s
42:     learn: 0.4329629     total: 2.02s     remaining: 7.36s
43:     learn: 0.4327984     total: 2.06s     remaining: 7.3s
44:     learn: 0.4327474     total: 2.08s     remaining: 7.17s
45:     learn: 0.4318898     total: 2.12s     remaining: 7.11s
46:     learn: 0.4315735     total: 2.17s     remaining: 7.07s
47:     learn: 0.4313504     total: 2.23s     remaining: 7.06s
48:     learn: 0.4309970     total: 2.27s     remaining: 7s
49:     learn: 0.4307241     total: 2.31s     remaining: 6.94s
50:     learn: 0.4306553     total: 2.36s     remaining: 6.9s
51:     learn: 0.4305095     total: 2.42s     remaining: 6.88s
52:     learn: 0.4297638     total: 2.48s     remaining: 6.88s
53:     learn: 0.4295123     total: 2.52s     remaining: 6.82s
54:     learn: 0.4290174     total: 2.56s     remaining: 6.76s
55:     learn: 0.4281743     total: 2.63s     remaining: 6.75s
56:     learn: 0.4279608     total: 2.68s     remaining: 6.71s
57:     learn: 0.4276899     total: 2.74s     remaining: 6.7s
58:     learn: 0.4272515     total: 2.79s     remaining: 6.67s
59:     learn: 0.4271440     total: 2.83s     remaining: 6.6s
60:     learn: 0.4269093     total: 2.88s     remaining: 6.55s
61:     learn: 0.4267877     total: 2.92s     remaining: 6.51s
62:     learn: 0.4267056     total: 2.96s     remaining: 6.44s
63:     learn: 0.4264932     total: 3.01s     remaining: 6.39s
64:     learn: 0.4261692     total: 3.07s     remaining: 6.38s
65:     learn: 0.4259482     total: 3.12s     remaining: 6.34s
66:     learn: 0.4256055     total: 3.18s     remaining: 6.31s
67:     learn: 0.4254782     total: 3.23s     remaining: 6.28s
68:     learn: 0.4253680     total: 3.28s     remaining: 6.22s
69:     learn: 0.4253452     total: 3.33s     remaining: 6.19s
70:     learn: 0.4252620     total: 3.39s     remaining: 6.16s
71:     learn: 0.4251165     total: 3.44s     remaining: 6.12s
72:     learn: 0.4247490     total: 3.51s     remaining: 6.11s
73:     learn: 0.4245507     total: 3.56s     remaining: 6.07s
74:     learn: 0.4244987     total: 3.62s     remaining: 6.04s
75:     learn: 0.4242965     total: 3.66s     remaining: 5.98s
76:     learn: 0.4240379     total: 3.71s     remaining: 5.92s
77:     learn: 0.4238212     total: 3.75s     remaining: 5.87s
78:     learn: 0.4236121     total: 3.79s     remaining: 5.81s
79:     learn: 0.4233714     total: 3.84s     remaining: 5.76s
80:     learn: 0.4231193     total: 3.89s     remaining: 5.71s
81:     learn: 0.4229117     total: 3.93s     remaining: 5.66s
82:     learn: 0.4225672     total: 3.98s     remaining: 5.61s
83:     learn: 0.4224097     total: 4.03s     remaining: 5.56s
84:     learn: 0.4223062     total: 4.08s     remaining: 5.52s
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85:     learn: 0.4221734    total: 4.14s    remaining: 5.49s
86:     learn: 0.4213234    total: 4.19s    remaining: 5.44s
87:     learn: 0.4211191    total: 4.24s    remaining: 5.39s
88:     learn: 0.4208111    total: 4.3s     remaining: 5.36s
89:     learn: 0.4203649    total: 4.37s    remaining: 5.33s
90:     learn: 0.4201880    total: 4.42s    remaining: 5.29s
91:     learn: 0.4198815    total: 4.47s    remaining: 5.25s
92:     learn: 0.4196610    total: 4.52s    remaining: 5.2s
93:     learn: 0.4194906    total: 4.57s    remaining: 5.15s
94:     learn: 0.4193305    total: 4.61s    remaining: 5.1s
95:     learn: 0.4192582    total: 4.66s    remaining: 5.04s
96:     learn: 0.4188563    total: 4.7s     remaining: 4.99s
97:     learn: 0.4187813    total: 4.76s    remaining: 4.96s
98:     learn: 0.4180572    total: 4.81s    remaining: 4.91s
99:     learn: 0.4175373    total: 4.88s    remaining: 4.88s
100:    learn: 0.4169910    total: 4.93s    remaining: 4.83s
101:    learn: 0.4165630    total: 4.98s    remaining: 4.78s
102:    learn: 0.4164483    total: 5.04s    remaining: 4.74s
103:    learn: 0.4161748    total: 5.08s    remaining: 4.69s
104:    learn: 0.4158439    total: 5.14s    remaining: 4.65s
105:    learn: 0.4152810    total: 5.19s    remaining: 4.6s
106:    learn: 0.4151225    total: 5.23s    remaining: 4.55s
107:    learn: 0.4151219    total: 5.26s    remaining: 4.48s
108:    learn: 0.4144551    total: 5.32s    remaining: 4.44s
109:    learn: 0.4143456    total: 5.36s    remaining: 4.38s
110:    learn: 0.4139271    total: 5.41s    remaining: 4.33s
111:    learn: 0.4136582    total: 5.46s    remaining: 4.29s
112:    learn: 0.4136467    total: 5.5s     remaining: 4.24s
113:    learn: 0.4135754    total: 5.56s    remaining: 4.2s
114:    learn: 0.4132059    total: 5.61s    remaining: 4.15s
115:    learn: 0.4126784    total: 5.69s    remaining: 4.12s
116:    learn: 0.4126604    total: 5.74s    remaining: 4.07s
117:    learn: 0.4125123    total: 5.79s    remaining: 4.02s
118:    learn: 0.4118923    total: 5.85s    remaining: 3.98s
119:    learn: 0.4116810    total: 5.9s     remaining: 3.93s
120:    learn: 0.4115138    total: 5.97s    remaining: 3.9s
121:    learn: 0.4113385    total: 6.03s    remaining: 3.85s
122:    learn: 0.4110212    total: 6.08s    remaining: 3.8s
123:    learn: 0.4108981    total: 6.13s    remaining: 3.76s
124:    learn: 0.4108006    total: 6.2s     remaining: 3.72s
125:    learn: 0.4106326    total: 6.26s    remaining: 3.67s
126:    learn: 0.4103726    total: 6.3s     remaining: 3.62s
127:    learn: 0.4101712    total: 6.35s    remaining: 3.57s
128:    learn: 0.4098371    total: 6.39s    remaining: 3.52s
129:    learn: 0.4096216    total: 6.43s    remaining: 3.46s
130:    learn: 0.4095349    total: 6.47s    remaining: 3.41s
131:    learn: 0.4094175    total: 6.53s    remaining: 3.36s
132:    learn: 0.4093648    total: 6.58s    remaining: 3.31s
```

```
133:    learn: 0.4092396    total: 6.63s    remaining: 3.27s
134:    learn: 0.4089909    total: 6.69s    remaining: 3.22s
135:    learn: 0.4085160    total: 6.74s    remaining: 3.17s
136:    learn: 0.4081677    total: 6.79s    remaining: 3.12s
137:    learn: 0.4080523    total: 6.85s    remaining: 3.08s
138:    learn: 0.4080164    total: 6.91s    remaining: 3.03s
139:    learn: 0.4077441    total: 6.96s    remaining: 2.98s
140:    learn: 0.4073595    total: 7s       remaining: 2.93s
141:    learn: 0.4071393    total: 7.07s    remaining: 2.89s
142:    learn: 0.4068279    total: 7.11s    remaining: 2.83s
143:    learn: 0.4067913    total: 7.15s    remaining: 2.78s
144:    learn: 0.4065879    total: 7.21s    remaining: 2.73s
145:    learn: 0.4064017    total: 7.25s    remaining: 2.68s
146:    learn: 0.4060216    total: 7.31s    remaining: 2.64s
147:    learn: 0.4057543    total: 7.38s    remaining: 2.59s
148:    learn: 0.4056333    total: 7.44s    remaining: 2.55s
149:    learn: 0.4055633    total: 7.5s     remaining: 2.5s
150:    learn: 0.4051740    total: 7.57s    remaining: 2.45s
151:    learn: 0.4051057    total: 7.63s    remaining: 2.41s
152:    learn: 0.4049149    total: 7.68s    remaining: 2.36s
153:    learn: 0.4048846    total: 7.74s    remaining: 2.31s
154:    learn: 0.4047833    total: 7.8s     remaining: 2.26s
155:    learn: 0.4046894    total: 7.84s    remaining: 2.21s
156:    learn: 0.4046539    total: 7.89s    remaining: 2.16s
157:    learn: 0.4042760    total: 7.94s    remaining: 2.11s
158:    learn: 0.4041125    total: 8s       remaining: 2.06s
159:    learn: 0.4039317    total: 8.04s    remaining: 2.01s
160:    learn: 0.4038740    total: 8.09s    remaining: 1.96s
161:    learn: 0.4037229    total: 8.14s    remaining: 1.91s
162:    learn: 0.4034818    total: 8.19s    remaining: 1.86s
163:    learn: 0.4034329    total: 8.25s    remaining: 1.81s
164:    learn: 0.4031680    total: 8.32s    remaining: 1.76s
165:    learn: 0.4030034    total: 8.37s    remaining: 1.71s
166:    learn: 0.4029058    total: 8.42s    remaining: 1.66s
167:    learn: 0.4028292    total: 8.46s    remaining: 1.61s
168:    learn: 0.4027277    total: 8.5s     remaining: 1.56s
169:    learn: 0.4026926    total: 8.56s    remaining: 1.51s
170:    learn: 0.4026022    total: 8.62s    remaining: 1.46s
171:    learn: 0.4025642    total: 8.66s    remaining: 1.41s
172:    learn: 0.4024820    total: 8.72s    remaining: 1.36s
173:    learn: 0.4023935    total: 8.76s    remaining: 1.31s
174:    learn: 0.4021957    total: 8.8s     remaining: 1.26s
175:    learn: 0.4021834    total: 8.85s    remaining: 1.21s
176:    learn: 0.4019064    total: 8.91s    remaining: 1.16s
177:    learn: 0.4019064    total: 8.97s    remaining: 1.11s
178:    learn: 0.4017651    total: 9.01s    remaining: 1.06s
179:    learn: 0.4015207    total: 9.07s    remaining: 1.01s
180:    learn: 0.4013228    total: 9.13s    remaining: 958ms
```

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181:    learn: 0.4011175      total: 9.17s    remaining: 907ms
182:    learn: 0.4010709      total: 9.21s    remaining: 855ms
183:    learn: 0.4009832      total: 9.25s    remaining: 804ms
184:    learn: 0.4007392      total: 9.31s    remaining: 755ms
185:    learn: 0.4005829      total: 9.37s    remaining: 705ms
186:    learn: 0.4004784      total: 9.42s    remaining: 655ms
187:    learn: 0.4003530      total: 9.49s    remaining: 606ms
188:    learn: 0.4000624      total: 9.53s    remaining: 555ms
189:    learn: 0.3997958      total: 9.57s    remaining: 504ms
190:    learn: 0.3995269      total: 9.62s    remaining: 453ms
191:    learn: 0.3993500      total: 9.66s    remaining: 403ms
192:    learn: 0.3990178      total: 9.72s    remaining: 353ms
193:    learn: 0.3989743      total: 9.78s    remaining: 302ms
194:    learn: 0.3987164      total: 9.84s    remaining: 252ms
195:    learn: 0.3987065      total: 9.9s     remaining: 202ms
196:    learn: 0.3986155      total: 9.96s    remaining: 152ms
197:    learn: 0.3985199      total: 10s      remaining: 101ms
198:    learn: 0.3984714      total: 10.1s    remaining: 50.6ms
199:    learn: 0.3983100      total: 10.1s    remaining: 0us
Mean train f1-score of data (CV) 0 is : 0.817623265424061
Mean test f1-score of data (CV) 0 is : 0.8053182018565916
```

```
Shape of data 1 is :
(27303, 10)
Distribution of 1 is :
Yes    14102
No     13201
Name: TIMELY_RESPONSE, dtype: int64

<IPython.core.display.HTML object>

MetricVisualizer(layout=Layout(align_self='stretch', height='500px'))

Train f1_score [Yes]: for data 1 is : 0.8141105029763094
Train f1_score [No]: for data 1 is : 0.8193079880392995
              precision   recall  f1-score   support

         No       0.79     0.84      0.82       924
        Yes       0.84     0.79      0.82       988

   accuracy                          0.82      1912
  macro avg       0.82     0.82      0.82      1912
weighted avg      0.82     0.82      0.82      1912
```
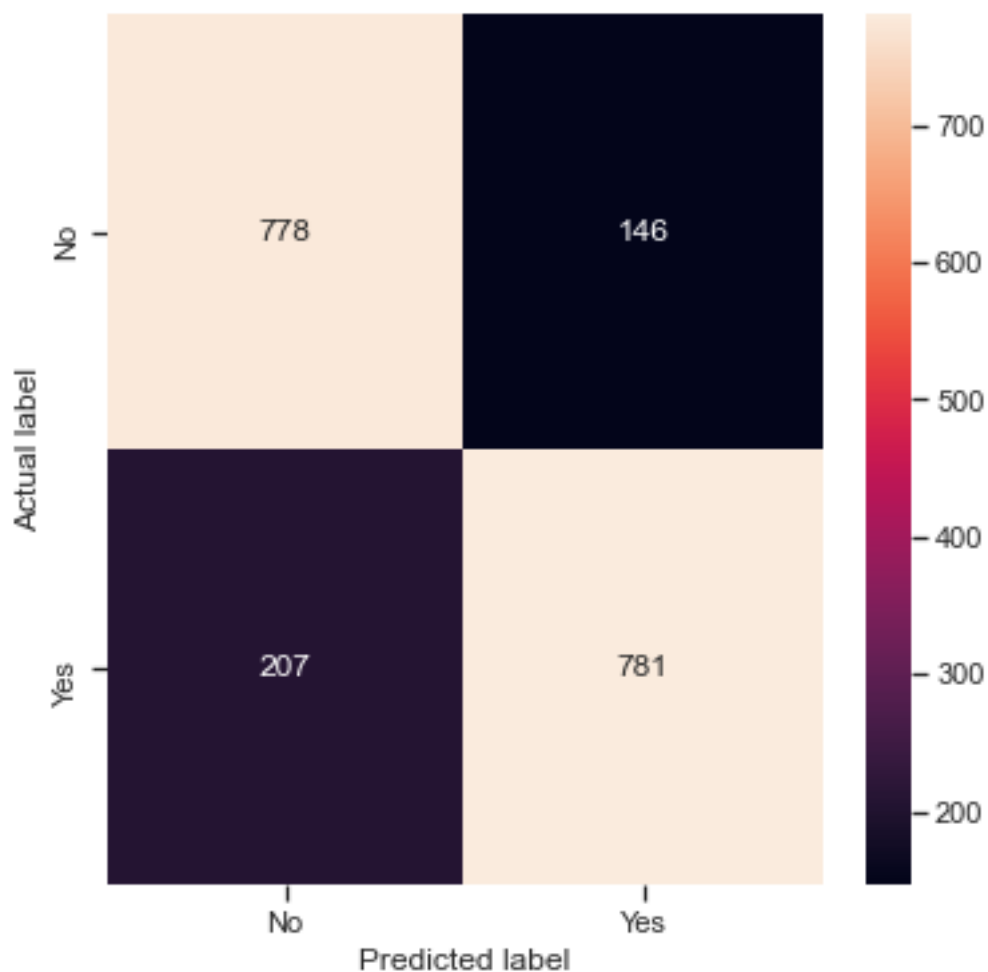
```
Cross validation result for data 1 is :
0:      learn: 0.6331875      total: 42.5ms   remaining: 8.45s
1:      learn: 0.5984837      total: 88.8ms   remaining: 8.79s
2:      learn: 0.5723261      total: 128ms    remaining: 8.39s
3:      learn: 0.5467172      total: 173ms    remaining: 8.49s
4:      learn: 0.5279347      total: 226ms    remaining: 8.8s
5:      learn: 0.5135094      total: 274ms    remaining: 8.86s
6:      learn: 0.5029832      total: 326ms    remaining: 8.99s
7:      learn: 0.4950805      total: 371ms    remaining: 8.89s
8:      learn: 0.4865319      total: 416ms    remaining: 8.83s
9:      learn: 0.4780437      total: 463ms    remaining: 8.8s
10:     learn: 0.4717649      total: 507ms    remaining: 8.72s
11:     learn: 0.4677821      total: 552ms    remaining: 8.65s
12:     learn: 0.4623575      total: 594ms    remaining: 8.54s
13:     learn: 0.4605146      total: 632ms    remaining: 8.4s
14:     learn: 0.4571766      total: 674ms    remaining: 8.32s
15:     learn: 0.4551059      total: 725ms    remaining: 8.33s
```

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16:     learn: 0.4529403      total: 764ms    remaining: 8.23s
17:     learn: 0.4514616      total: 807ms    remaining: 8.15s
18:     learn: 0.4496887      total: 849ms    remaining: 8.09s
19:     learn: 0.4483754      total: 895ms    remaining: 8.06s
20:     learn: 0.4462543      total: 938ms    remaining: 8s
21:     learn: 0.4445637      total: 978ms    remaining: 7.91s
22:     learn: 0.4440959      total: 1.02s    remaining: 7.85s
23:     learn: 0.4432877      total: 1.06s    remaining: 7.78s
24:     learn: 0.4421711      total: 1.1s     remaining: 7.7s
25:     learn: 0.4409814      total: 1.14s    remaining: 7.64s
26:     learn: 0.4399858      total: 1.19s    remaining: 7.61s
27:     learn: 0.4392068      total: 1.23s    remaining: 7.58s
28:     learn: 0.4390717      total: 1.26s    remaining: 7.41s
29:     learn: 0.4387362      total: 1.3s     remaining: 7.37s
30:     learn: 0.4382673      total: 1.35s    remaining: 7.34s
31:     learn: 0.4377768      total: 1.39s    remaining: 7.3s
32:     learn: 0.4372514      total: 1.43s    remaining: 7.25s
33:     learn: 0.4367469      total: 1.48s    remaining: 7.22s
34:     learn: 0.4360472      total: 1.52s    remaining: 7.19s
35:     learn: 0.4357586      total: 1.57s    remaining: 7.15s
36:     learn: 0.4354544      total: 1.61s    remaining: 7.1s
37:     learn: 0.4346595      total: 1.65s    remaining: 7.05s
38:     learn: 0.4340539      total: 1.7s     remaining: 7.02s
39:     learn: 0.4337589      total: 1.74s    remaining: 6.97s
40:     learn: 0.4329121      total: 1.79s    remaining: 6.93s
41:     learn: 0.4316785      total: 1.83s    remaining: 6.89s
42:     learn: 0.4311512      total: 1.88s    remaining: 6.85s
43:     learn: 0.4301956      total: 1.92s    remaining: 6.82s
44:     learn: 0.4298230      total: 1.97s    remaining: 6.78s
45:     learn: 0.4297369      total: 2.01s    remaining: 6.73s
46:     learn: 0.4294206      total: 2.05s    remaining: 6.68s
47:     learn: 0.4289928      total: 2.12s    remaining: 6.7s
48:     learn: 0.4287556      total: 2.16s    remaining: 6.65s
49:     learn: 0.4284992      total: 2.21s    remaining: 6.62s
50:     learn: 0.4280159      total: 2.25s    remaining: 6.57s
51:     learn: 0.4277508      total: 2.3s     remaining: 6.54s
52:     learn: 0.4276191      total: 2.34s    remaining: 6.49s
53:     learn: 0.4273506      total: 2.46s    remaining: 6.66s
54:     learn: 0.4272858      total: 2.62s    remaining: 6.9s
55:     learn: 0.4265353      total: 2.78s    remaining: 7.16s
56:     learn: 0.4262949      total: 2.84s    remaining: 7.12s
57:     learn: 0.4258470      total: 2.9s     remaining: 7.09s
58:     learn: 0.4256596      total: 2.95s    remaining: 7.05s
59:     learn: 0.4255948      total: 3s       remaining: 7s
60:     learn: 0.4253741      total: 3.11s    remaining: 7.09s
61:     learn: 0.4252490      total: 3.19s    remaining: 7.1s
62:     learn: 0.4250160      total: 3.24s    remaining: 7.05s
63:     learn: 0.4246499      total: 3.29s    remaining: 7s
```

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64:     learn: 0.4239827     total: 3.34s     remaining: 6.94s
65:     learn: 0.4237761     total: 3.4s      remaining: 6.89s
66:     learn: 0.4235504     total: 3.44s     remaining: 6.83s
67:     learn: 0.4232591     total: 3.49s     remaining: 6.77s
68:     learn: 0.4228723     total: 3.54s     remaining: 6.71s
69:     learn: 0.4228723     total: 3.55s     remaining: 6.58s
70:     learn: 0.4225684     total: 3.59s     remaining: 6.52s
71:     learn: 0.4223125     total: 3.64s     remaining: 6.46s
72:     learn: 0.4219785     total: 3.68s     remaining: 6.41s
73:     learn: 0.4216978     total: 3.73s     remaining: 6.36s
74:     learn: 0.4214803     total: 3.79s     remaining: 6.31s
75:     learn: 0.4208826     total: 3.84s     remaining: 6.26s
76:     learn: 0.4206870     total: 3.9s      remaining: 6.22s
77:     learn: 0.4204134     total: 3.94s     remaining: 6.17s
78:     learn: 0.4203017     total: 3.99s     remaining: 6.11s
79:     learn: 0.4201510     total: 4.04s     remaining: 6.05s
80:     learn: 0.4200911     total: 4.08s     remaining: 5.99s
81:     learn: 0.4198935     total: 4.12s     remaining: 5.93s
82:     learn: 0.4198483     total: 4.14s     remaining: 5.84s
83:     learn: 0.4198482     total: 4.17s     remaining: 5.75s
84:     learn: 0.4197015     total: 4.21s     remaining: 5.7s
85:     learn: 0.4193128     total: 4.26s     remaining: 5.65s
86:     learn: 0.4193110     total: 4.29s     remaining: 5.57s
87:     learn: 0.4189232     total: 4.33s     remaining: 5.52s
88:     learn: 0.4188519     total: 4.38s     remaining: 5.46s
89:     learn: 0.4185506     total: 4.42s     remaining: 5.41s
90:     learn: 0.4184478     total: 4.47s     remaining: 5.35s
91:     learn: 0.4183644     total: 4.51s     remaining: 5.3s
92:     learn: 0.4182139     total: 4.55s     remaining: 5.24s
93:     learn: 0.4179872     total: 4.6s      remaining: 5.18s
94:     learn: 0.4177756     total: 4.64s     remaining: 5.13s
95:     learn: 0.4171388     total: 4.69s     remaining: 5.08s
96:     learn: 0.4168830     total: 4.73s     remaining: 5.03s
97:     learn: 0.4163997     total: 4.79s     remaining: 4.98s
98:     learn: 0.4162444     total: 4.84s     remaining: 4.94s
99:     learn: 0.4161508     total: 4.89s     remaining: 4.89s
100:    learn: 0.4160649     total: 4.96s     remaining: 4.86s
101:    learn: 0.4156360     total: 5s        remaining: 4.81s
102:    learn: 0.4152867     total: 5.06s     remaining: 4.76s
103:    learn: 0.4151175     total: 5.1s      remaining: 4.71s
104:    learn: 0.4147935     total: 5.15s     remaining: 4.66s
105:    learn: 0.4142537     total: 5.2s      remaining: 4.61s
106:    learn: 0.4141061     total: 5.25s     remaining: 4.56s
107:    learn: 0.4139924     total: 5.29s     remaining: 4.51s
108:    learn: 0.4134330     total: 5.34s     remaining: 4.46s
109:    learn: 0.4133876     total: 5.39s     remaining: 4.41s
110:    learn: 0.4132143     total: 5.46s     remaining: 4.38s
111:    learn: 0.4131142     total: 5.53s     remaining: 4.35s
```

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112:    learn: 0.4128464    total: 5.58s    remaining: 4.3s
113:    learn: 0.4125282    total: 5.64s    remaining: 4.25s
114:    learn: 0.4122167    total: 5.69s    remaining: 4.2s
115:    learn: 0.4121226    total: 5.73s    remaining: 4.15s
116:    learn: 0.4120104    total: 5.79s    remaining: 4.11s
117:    learn: 0.4116167    total: 5.86s    remaining: 4.07s
118:    learn: 0.4112881    total: 5.91s    remaining: 4.03s
119:    learn: 0.4110754    total: 5.96s    remaining: 3.98s
120:    learn: 0.4109343    total: 6.03s    remaining: 3.94s
121:    learn: 0.4107247    total: 6.08s    remaining: 3.89s
122:    learn: 0.4106180    total: 6.13s    remaining: 3.84s
123:    learn: 0.4104338    total: 6.19s    remaining: 3.79s
124:    learn: 0.4104125    total: 6.28s    remaining: 3.77s
125:    learn: 0.4102277    total: 6.37s    remaining: 3.74s
126:    learn: 0.4102268    total: 6.41s    remaining: 3.68s
127:    learn: 0.4099666    total: 6.46s    remaining: 3.63s
128:    learn: 0.4098842    total: 6.51s    remaining: 3.58s
129:    learn: 0.4098517    total: 6.56s    remaining: 3.53s
130:    learn: 0.4097393    total: 6.61s    remaining: 3.48s
131:    learn: 0.4096497    total: 6.66s    remaining: 3.43s
132:    learn: 0.4090270    total: 6.71s    remaining: 3.38s
133:    learn: 0.4089055    total: 6.78s    remaining: 3.34s
134:    learn: 0.4088758    total: 6.84s    remaining: 3.29s
135:    learn: 0.4086499    total: 6.89s    remaining: 3.25s
136:    learn: 0.4085746    total: 6.95s    remaining: 3.19s
137:    learn: 0.4082153    total: 7s       remaining: 3.15s
138:    learn: 0.4077218    total: 7.06s    remaining: 3.1s
139:    learn: 0.4075108    total: 7.12s    remaining: 3.05s
140:    learn: 0.4073789    total: 7.18s    remaining: 3s
141:    learn: 0.4072347    total: 7.24s    remaining: 2.96s
142:    learn: 0.4071117    total: 7.29s    remaining: 2.91s
143:    learn: 0.4068830    total: 7.34s    remaining: 2.86s
144:    learn: 0.4067918    total: 7.39s    remaining: 2.81s
145:    learn: 0.4065506    total: 7.45s    remaining: 2.75s
146:    learn: 0.4065146    total: 7.51s    remaining: 2.71s
147:    learn: 0.4063595    total: 7.56s    remaining: 2.65s
148:    learn: 0.4060090    total: 7.61s    remaining: 2.6s
149:    learn: 0.4058704    total: 7.66s    remaining: 2.55s
150:    learn: 0.4057516    total: 7.71s    remaining: 2.5s
151:    learn: 0.4054886    total: 7.77s    remaining: 2.45s
152:    learn: 0.4051843    total: 7.82s    remaining: 2.4s
153:    learn: 0.4050331    total: 7.88s    remaining: 2.35s
154:    learn: 0.4049192    total: 7.94s    remaining: 2.3s
155:    learn: 0.4047101    total: 8s       remaining: 2.26s
156:    learn: 0.4045831    total: 8.06s    remaining: 2.21s
157:    learn: 0.4043156    total: 8.12s    remaining: 2.16s
158:    learn: 0.4042505    total: 8.17s    remaining: 2.11s
159:    learn: 0.4040073    total: 8.23s    remaining: 2.06s
```

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160:    learn: 0.4037933    total: 8.29s    remaining: 2.01s
161:    learn: 0.4035662    total: 8.34s    remaining: 1.96s
162:    learn: 0.4034809    total: 8.4s     remaining: 1.91s
163:    learn: 0.4032876    total: 8.45s    remaining: 1.85s
164:    learn: 0.4031873    total: 8.5s     remaining: 1.8s
165:    learn: 0.4029644    total: 8.55s    remaining: 1.75s
166:    learn: 0.4027140    total: 8.61s    remaining: 1.7s
167:    learn: 0.4026034    total: 8.66s    remaining: 1.65s
168:    learn: 0.4022240    total: 8.71s    remaining: 1.6s
169:    learn: 0.4021990    total: 8.77s    remaining: 1.55s
170:    learn: 0.4020527    total: 8.82s    remaining: 1.5s
171:    learn: 0.4018602    total: 8.87s    remaining: 1.44s
172:    learn: 0.4018390    total: 8.94s    remaining: 1.4s
173:    learn: 0.4016841    total: 9.01s    remaining: 1.34s
174:    learn: 0.4014361    total: 9.11s    remaining: 1.3s
175:    learn: 0.4011964    total: 9.18s    remaining: 1.25s
176:    learn: 0.4010278    total: 9.26s    remaining: 1.2s
177:    learn: 0.4007332    total: 9.4s     remaining: 1.16s
178:    learn: 0.4005347    total: 9.49s    remaining: 1.11s
179:    learn: 0.4004299    total: 9.57s    remaining: 1.06s
180:    learn: 0.4002721    total: 9.66s    remaining: 1.01s
181:    learn: 0.4001327    total: 9.76s    remaining: 966ms
182:    learn: 0.4000503    total: 9.82s    remaining: 913ms
183:    learn: 0.3998522    total: 9.88s    remaining: 859ms
184:    learn: 0.3997060    total: 9.93s    remaining: 806ms
185:    learn: 0.3995625    total: 9.99s    remaining: 752ms
186:    learn: 0.3995460    total: 10.1s    remaining: 700ms
187:    learn: 0.3995365    total: 10.1s    remaining: 646ms
188:    learn: 0.3993688    total: 10.2s    remaining: 592ms
189:    learn: 0.3991795    total: 10.2s    remaining: 539ms
190:    learn: 0.3990912    total: 10.3s    remaining: 485ms
191:    learn: 0.3990078    total: 10.4s    remaining: 432ms
192:    learn: 0.3988797    total: 10.4s    remaining: 378ms
193:    learn: 0.3986461    total: 10.5s    remaining: 324ms
194:    learn: 0.3982875    total: 10.5s    remaining: 270ms
195:    learn: 0.3982314    total: 10.6s    remaining: 216ms
196:    learn: 0.3981999    total: 10.7s    remaining: 162ms
197:    learn: 0.3980754    total: 10.7s    remaining: 108ms
198:    learn: 0.3979956    total: 10.8s    remaining: 54.2ms
199:    learn: 0.3978513    total: 10.8s    remaining: 0us
0:      learn: 0.6341409    total: 50.9ms   remaining: 10.1s
1:      learn: 0.5966499    total: 104ms    remaining: 10.3s
2:      learn: 0.5631991    total: 159ms    remaining: 10.4s
3:      learn: 0.5434250    total: 211ms    remaining: 10.4s
4:      learn: 0.5244187    total: 249ms    remaining: 9.71s
5:      learn: 0.5119067    total: 307ms    remaining: 9.94s
6:      learn: 0.5026204    total: 345ms    remaining: 9.52s
7:      learn: 0.4927584    total: 403ms    remaining: 9.68s
```

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8:        learn: 0.4819008        total: 467ms    remaining: 9.9s
9:        learn: 0.4749900        total: 511ms    remaining: 9.71s
10:       learn: 0.4695574        total: 558ms    remaining: 9.59s
11:       learn: 0.4648505        total: 601ms    remaining: 9.42s
12:       learn: 0.4615819        total: 648ms    remaining: 9.32s
13:       learn: 0.4580145        total: 695ms    remaining: 9.24s
14:       learn: 0.4550308        total: 755ms    remaining: 9.31s
15:       learn: 0.4525560        total: 811ms    remaining: 9.32s
16:       learn: 0.4512595        total: 856ms    remaining: 9.22s
17:       learn: 0.4499192        total: 899ms    remaining: 9.09s
18:       learn: 0.4479530        total: 950ms    remaining: 9.05s
19:       learn: 0.4465523        total: 1.01s    remaining: 9.06s
20:       learn: 0.4454837        total: 1.06s    remaining: 9.01s
21:       learn: 0.4442923        total: 1.11s    remaining: 8.95s
22:       learn: 0.4432936        total: 1.17s    remaining: 8.97s
23:       learn: 0.4425977        total: 1.22s    remaining: 8.93s
24:       learn: 0.4420622        total: 1.26s    remaining: 8.82s
25:       learn: 0.4413725        total: 1.31s    remaining: 8.79s
26:       learn: 0.4407317        total: 1.36s    remaining: 8.72s
27:       learn: 0.4400251        total: 1.41s    remaining: 8.67s
28:       learn: 0.4395310        total: 1.46s    remaining: 8.64s
29:       learn: 0.4389542        total: 1.51s    remaining: 8.57s
30:       learn: 0.4379998        total: 1.56s    remaining: 8.51s
31:       learn: 0.4370265        total: 1.61s    remaining: 8.46s
32:       learn: 0.4363945        total: 1.66s    remaining: 8.4s
33:       learn: 0.4359695        total: 1.71s    remaining: 8.35s
34:       learn: 0.4353031        total: 1.76s    remaining: 8.29s
35:       learn: 0.4349183        total: 1.81s    remaining: 8.24s
36:       learn: 0.4346108        total: 1.86s    remaining: 8.19s
37:       learn: 0.4342197        total: 1.91s    remaining: 8.14s
38:       learn: 0.4338896        total: 1.96s    remaining: 8.07s
39:       learn: 0.4335644        total: 2s       remaining: 8.02s
40:       learn: 0.4332052        total: 2.05s    remaining: 7.97s
41:       learn: 0.4330089        total: 2.1s     remaining: 7.9s
42:       learn: 0.4327385        total: 2.15s    remaining: 7.84s
43:       learn: 0.4319535        total: 2.2s     remaining: 7.79s
44:       learn: 0.4317071        total: 2.24s    remaining: 7.72s
45:       learn: 0.4313291        total: 2.29s    remaining: 7.67s
46:       learn: 0.4306652        total: 2.34s    remaining: 7.62s
47:       learn: 0.4302796        total: 2.39s    remaining: 7.57s
48:       learn: 0.4300413        total: 2.44s    remaining: 7.52s
49:       learn: 0.4298553        total: 2.49s    remaining: 7.46s
50:       learn: 0.4290609        total: 2.54s    remaining: 7.41s
51:       learn: 0.4289186        total: 2.58s    remaining: 7.35s
52:       learn: 0.4289186        total: 2.59s    remaining: 7.19s
53:       learn: 0.4286422        total: 2.64s    remaining: 7.13s
54:       learn: 0.4277281        total: 2.69s    remaining: 7.11s
55:       learn: 0.4273601        total: 2.75s    remaining: 7.06s
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56:     learn: 0.4271390      total: 2.79s    remaining: 7s
57:     learn: 0.4266233      total: 2.84s    remaining: 6.95s
58:     learn: 0.4262057      total: 2.88s    remaining: 6.89s
59:     learn: 0.4259540      total: 2.94s    remaining: 6.85s
60:     learn: 0.4255675      total: 2.98s    remaining: 6.79s
61:     learn: 0.4254217      total: 3.03s    remaining: 6.75s
62:     learn: 0.4250164      total: 3.08s    remaining: 6.7s
63:     learn: 0.4250164      total: 3.09s    remaining: 6.57s
64:     learn: 0.4248682      total: 3.14s    remaining: 6.52s
65:     learn: 0.4245681      total: 3.19s    remaining: 6.49s
66:     learn: 0.4244047      total: 3.25s    remaining: 6.45s
67:     learn: 0.4241117      total: 3.29s    remaining: 6.4s
68:     learn: 0.4238518      total: 3.35s    remaining: 6.36s
69:     learn: 0.4235049      total: 3.4s     remaining: 6.31s
70:     learn: 0.4230140      total: 3.45s    remaining: 6.27s
71:     learn: 0.4228338      total: 3.5s     remaining: 6.22s
72:     learn: 0.4225577      total: 3.55s    remaining: 6.17s
73:     learn: 0.4224462      total: 3.59s    remaining: 6.11s
74:     learn: 0.4219128      total: 3.64s    remaining: 6.07s
75:     learn: 0.4216310      total: 3.69s    remaining: 6.02s
76:     learn: 0.4215206      total: 3.73s    remaining: 5.97s
77:     learn: 0.4213969      total: 3.79s    remaining: 5.92s
78:     learn: 0.4211564      total: 3.83s    remaining: 5.87s
79:     learn: 0.4206079      total: 3.88s    remaining: 5.83s
80:     learn: 0.4204342      total: 3.93s    remaining: 5.78s
81:     learn: 0.4202077      total: 3.98s    remaining: 5.73s
82:     learn: 0.4200123      total: 4.03s    remaining: 5.68s
83:     learn: 0.4196508      total: 4.08s    remaining: 5.63s
84:     learn: 0.4193616      total: 4.13s    remaining: 5.58s
85:     learn: 0.4191117      total: 4.18s    remaining: 5.54s
86:     learn: 0.4188673      total: 4.23s    remaining: 5.49s
87:     learn: 0.4185226      total: 4.28s    remaining: 5.44s
88:     learn: 0.4183652      total: 4.33s    remaining: 5.39s
89:     learn: 0.4182012      total: 4.38s    remaining: 5.35s
90:     learn: 0.4180152      total: 4.42s    remaining: 5.3s
91:     learn: 0.4172356      total: 4.47s    remaining: 5.25s
92:     learn: 0.4169627      total: 4.52s    remaining: 5.2s
93:     learn: 0.4167395      total: 4.56s    remaining: 5.15s
94:     learn: 0.4165622      total: 4.61s    remaining: 5.09s
95:     learn: 0.4163375      total: 4.65s    remaining: 5.04s
96:     learn: 0.4162787      total: 4.7s     remaining: 4.99s
97:     learn: 0.4161351      total: 4.75s    remaining: 4.94s
98:     learn: 0.4160521      total: 4.79s    remaining: 4.89s
99:     learn: 0.4159864      total: 4.84s    remaining: 4.84s
100:    learn: 0.4157544      total: 4.89s    remaining: 4.79s
101:    learn: 0.4156838      total: 4.93s    remaining: 4.74s
102:    learn: 0.4156376      total: 4.98s    remaining: 4.69s
103:    learn: 0.4154543      total: 5.03s    remaining: 4.64s
```

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104:    learn: 0.4151198    total: 5.08s    remaining: 4.6s
105:    learn: 0.4148498    total: 5.13s    remaining: 4.55s
106:    learn: 0.4146103    total: 5.18s    remaining: 4.5s
107:    learn: 0.4145665    total: 5.22s    remaining: 4.45s
108:    learn: 0.4142112    total: 5.27s    remaining: 4.4s
109:    learn: 0.4141526    total: 5.31s    remaining: 4.35s
110:    learn: 0.4135665    total: 5.36s    remaining: 4.29s
111:    learn: 0.4130649    total: 5.41s    remaining: 4.25s
112:    learn: 0.4125563    total: 5.46s    remaining: 4.2s
113:    learn: 0.4120793    total: 5.5s     remaining: 4.15s
114:    learn: 0.4120734    total: 5.55s    remaining: 4.1s
115:    learn: 0.4120471    total: 5.6s     remaining: 4.05s
116:    learn: 0.4114892    total: 5.65s    remaining: 4s
117:    learn: 0.4112516    total: 5.69s    remaining: 3.96s
118:    learn: 0.4111729    total: 5.74s    remaining: 3.91s
119:    learn: 0.4110607    total: 5.79s    remaining: 3.86s
120:    learn: 0.4103403    total: 5.85s    remaining: 3.82s
121:    learn: 0.4101253    total: 5.9s     remaining: 3.77s
122:    learn: 0.4096818    total: 5.95s    remaining: 3.73s
123:    learn: 0.4094096    total: 6s       remaining: 3.68s
124:    learn: 0.4093085    total: 6.06s    remaining: 3.63s
125:    learn: 0.4092415    total: 6.1s     remaining: 3.58s
126:    learn: 0.4089673    total: 6.16s    remaining: 3.54s
127:    learn: 0.4088631    total: 6.21s    remaining: 3.49s
128:    learn: 0.4083463    total: 6.26s    remaining: 3.44s
129:    learn: 0.4079616    total: 6.31s    remaining: 3.4s
130:    learn: 0.4078469    total: 6.36s    remaining: 3.35s
131:    learn: 0.4077775    total: 6.41s    remaining: 3.3s
132:    learn: 0.4075971    total: 6.46s    remaining: 3.25s
133:    learn: 0.4073641    total: 6.51s    remaining: 3.21s
134:    learn: 0.4070060    total: 6.56s    remaining: 3.16s
135:    learn: 0.4069973    total: 6.6s     remaining: 3.11s
136:    learn: 0.4065109    total: 6.65s    remaining: 3.06s
137:    learn: 0.4064519    total: 6.7s     remaining: 3.01s
138:    learn: 0.4062626    total: 6.75s    remaining: 2.96s
139:    learn: 0.4060682    total: 6.8s     remaining: 2.91s
140:    learn: 0.4059814    total: 6.84s    remaining: 2.86s
141:    learn: 0.4059558    total: 6.89s    remaining: 2.81s
142:    learn: 0.4058043    total: 6.93s    remaining: 2.76s
143:    learn: 0.4052414    total: 6.98s    remaining: 2.71s
144:    learn: 0.4051426    total: 7.03s    remaining: 2.67s
145:    learn: 0.4048790    total: 7.08s    remaining: 2.62s
146:    learn: 0.4047732    total: 7.13s    remaining: 2.57s
147:    learn: 0.4045535    total: 7.18s    remaining: 2.52s
148:    learn: 0.4043839    total: 7.23s    remaining: 2.47s
149:    learn: 0.4040216    total: 7.28s    remaining: 2.42s
150:    learn: 0.4039018    total: 7.32s    remaining: 2.38s
151:    learn: 0.4037143    total: 7.37s    remaining: 2.33s
```

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152:    learn: 0.4035148    total: 7.42s    remaining: 2.28s
153:    learn: 0.4031630    total: 7.46s    remaining: 2.23s
154:    learn: 0.4029436    total: 7.51s    remaining: 2.18s
155:    learn: 0.4027311    total: 7.56s    remaining: 2.13s
156:    learn: 0.4026576    total: 7.61s    remaining: 2.08s
157:    learn: 0.4025785    total: 7.66s    remaining: 2.04s
158:    learn: 0.4024734    total: 7.71s    remaining: 1.99s
159:    learn: 0.4022351    total: 7.76s    remaining: 1.94s
160:    learn: 0.4021347    total: 7.81s    remaining: 1.89s
161:    learn: 0.4019448    total: 7.86s    remaining: 1.84s
162:    learn: 0.4018688    total: 7.9s     remaining: 1.79s
163:    learn: 0.4018406    total: 7.95s    remaining: 1.75s
164:    learn: 0.4016796    total: 8s       remaining: 1.7s
165:    learn: 0.4014735    total: 8.04s    remaining: 1.65s
166:    learn: 0.4012199    total: 8.1s     remaining: 1.6s
167:    learn: 0.4011143    total: 8.14s    remaining: 1.55s
168:    learn: 0.4010308    total: 8.19s    remaining: 1.5s
169:    learn: 0.4009106    total: 8.24s    remaining: 1.45s
170:    learn: 0.4006468    total: 8.29s    remaining: 1.41s
171:    learn: 0.4005408    total: 8.34s    remaining: 1.36s
172:    learn: 0.4001094    total: 8.39s    remaining: 1.31s
173:    learn: 0.3999963    total: 8.44s    remaining: 1.26s
174:    learn: 0.3998309    total: 8.49s    remaining: 1.21s
175:    learn: 0.3994605    total: 8.54s    remaining: 1.16s
176:    learn: 0.3992452    total: 8.59s    remaining: 1.11s
177:    learn: 0.3989859    total: 8.63s    remaining: 1.07s
178:    learn: 0.3987025    total: 8.68s    remaining: 1.02s
179:    learn: 0.3985236    total: 8.73s    remaining: 970ms
180:    learn: 0.3983406    total: 8.77s    remaining: 921ms
181:    learn: 0.3983332    total: 8.82s    remaining: 872ms
182:    learn: 0.3981945    total: 8.87s    remaining: 824ms
183:    learn: 0.3980311    total: 8.92s    remaining: 776ms
184:    learn: 0.3979024    total: 8.97s    remaining: 727ms
185:    learn: 0.3977107    total: 9.02s    remaining: 679ms
186:    learn: 0.3974901    total: 9.07s    remaining: 630ms
187:    learn: 0.3974396    total: 9.12s    remaining: 582ms
188:    learn: 0.3971771    total: 9.16s    remaining: 533ms
189:    learn: 0.3969418    total: 9.21s    remaining: 485ms
190:    learn: 0.3967812    total: 9.26s    remaining: 436ms
191:    learn: 0.3966533    total: 9.31s    remaining: 388ms
192:    learn: 0.3965172    total: 9.36s    remaining: 340ms
193:    learn: 0.3964588    total: 9.41s    remaining: 291ms
194:    learn: 0.3962877    total: 9.45s    remaining: 242ms
195:    learn: 0.3961856    total: 9.5s     remaining: 194ms
196:    learn: 0.3961048    total: 9.55s    remaining: 145ms
197:    learn: 0.3957014    total: 9.6s     remaining: 97ms
198:    learn: 0.3955507    total: 9.64s    remaining: 48.5ms
199:    learn: 0.3954198    total: 9.69s    remaining: 0us
```

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0:      learn: 0.6318928      total: 43.3ms    remaining: 8.61s
1:      learn: 0.5954192      total: 90.1ms    remaining: 8.92s
2:      learn: 0.5635272      total: 133ms     remaining: 8.76s
3:      learn: 0.5415509      total: 181ms     remaining: 8.87s
4:      learn: 0.5262571      total: 225ms     remaining: 8.79s
5:      learn: 0.5132915      total: 275ms     remaining: 8.88s
6:      learn: 0.5034889      total: 323ms     remaining: 8.91s
7:      learn: 0.4918503      total: 369ms     remaining: 8.86s
8:      learn: 0.4840725      total: 413ms     remaining: 8.76s
9:      learn: 0.4779981      total: 460ms     remaining: 8.75s
10:     learn: 0.4734206      total: 508ms     remaining: 8.74s
11:     learn: 0.4672646      total: 554ms     remaining: 8.69s
12:     learn: 0.4642887      total: 598ms     remaining: 8.6s
13:     learn: 0.4619581      total: 640ms     remaining: 8.5s
14:     learn: 0.4592933      total: 687ms     remaining: 8.47s
15:     learn: 0.4570477      total: 734ms     remaining: 8.44s
16:     learn: 0.4554230      total: 783ms     remaining: 8.42s
17:     learn: 0.4528475      total: 826ms     remaining: 8.36s
18:     learn: 0.4513267      total: 867ms     remaining: 8.26s
19:     learn: 0.4495077      total: 913ms     remaining: 8.22s
20:     learn: 0.4485679      total: 963ms     remaining: 8.21s
21:     learn: 0.4474892      total: 1.01s     remaining: 8.14s
22:     learn: 0.4467566      total: 1.05s     remaining: 8.09s
23:     learn: 0.4453508      total: 1.1s      remaining: 8.08s
24:     learn: 0.4448474      total: 1.15s     remaining: 8.02s
25:     learn: 0.4439879      total: 1.19s     remaining: 7.99s
26:     learn: 0.4430589      total: 1.24s     remaining: 7.95s
27:     learn: 0.4417900      total: 1.29s     remaining: 7.91s
28:     learn: 0.4414872      total: 1.33s     remaining: 7.86s
29:     learn: 0.4410389      total: 1.38s     remaining: 7.82s
30:     learn: 0.4403165      total: 1.42s     remaining: 7.76s
31:     learn: 0.4397832      total: 1.47s     remaining: 7.71s
32:     learn: 0.4393092      total: 1.51s     remaining: 7.64s
33:     learn: 0.4382010      total: 1.56s     remaining: 7.6s
34:     learn: 0.4373733      total: 1.6s      remaining: 7.57s
35:     learn: 0.4370904      total: 1.66s     remaining: 7.54s
36:     learn: 0.4369982      total: 1.7s      remaining: 7.49s
37:     learn: 0.4366034      total: 1.75s     remaining: 7.46s
38:     learn: 0.4360164      total: 1.8s      remaining: 7.43s
39:     learn: 0.4358320      total: 1.84s     remaining: 7.38s
40:     learn: 0.4355551      total: 1.89s     remaining: 7.33s
41:     learn: 0.4350686      total: 1.94s     remaining: 7.29s
42:     learn: 0.4347998      total: 1.98s     remaining: 7.24s
43:     learn: 0.4345910      total: 2.03s     remaining: 7.2s
44:     learn: 0.4341597      total: 2.08s     remaining: 7.17s
45:     learn: 0.4340228      total: 2.13s     remaining: 7.14s
46:     learn: 0.4335767      total: 2.18s     remaining: 7.1s
47:     learn: 0.4324110      total: 2.23s     remaining: 7.06s
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48:     learn: 0.4319100     total: 2.28s     remaining: 7.02s
49:     learn: 0.4317215     total: 2.32s     remaining: 6.97s
50:     learn: 0.4315155     total: 2.37s     remaining: 6.93s
51:     learn: 0.4311139     total: 2.42s     remaining: 6.88s
52:     learn: 0.4310220     total: 2.47s     remaining: 6.84s
53:     learn: 0.4307582     total: 2.51s     remaining: 6.8s
54:     learn: 0.4305167     total: 2.56s     remaining: 6.75s
55:     learn: 0.4302105     total: 2.61s     remaining: 6.71s
56:     learn: 0.4300216     total: 2.65s     remaining: 6.65s
57:     learn: 0.4297643     total: 2.69s     remaining: 6.6s
58:     learn: 0.4294315     total: 2.74s     remaining: 6.55s
59:     learn: 0.4291134     total: 2.79s     remaining: 6.5s
60:     learn: 0.4288019     total: 2.83s     remaining: 6.45s
61:     learn: 0.4285582     total: 2.88s     remaining: 6.41s
62:     learn: 0.4284265     total: 2.93s     remaining: 6.37s
63:     learn: 0.4280927     total: 2.98s     remaining: 6.33s
64:     learn: 0.4277895     total: 3.02s     remaining: 6.28s
65:     learn: 0.4274404     total: 3.07s     remaining: 6.24s
66:     learn: 0.4271948     total: 3.12s     remaining: 6.19s
67:     learn: 0.4271024     total: 3.17s     remaining: 6.15s
68:     learn: 0.4269713     total: 3.21s     remaining: 6.09s
69:     learn: 0.4268872     total: 3.25s     remaining: 6.04s
70:     learn: 0.4265801     total: 3.3s      remaining: 6s
71:     learn: 0.4264597     total: 3.35s     remaining: 5.95s
72:     learn: 0.4262153     total: 3.39s     remaining: 5.9s
73:     learn: 0.4254995     total: 3.44s     remaining: 5.86s
74:     learn: 0.4252475     total: 3.48s     remaining: 5.81s
75:     learn: 0.4250666     total: 3.53s     remaining: 5.75s
76:     learn: 0.4247356     total: 3.57s     remaining: 5.71s
77:     learn: 0.4240873     total: 3.62s     remaining: 5.66s
78:     learn: 0.4238409     total: 3.67s     remaining: 5.62s
79:     learn: 0.4234523     total: 3.71s     remaining: 5.57s
80:     learn: 0.4232067     total: 3.76s     remaining: 5.52s
81:     learn: 0.4228917     total: 3.81s     remaining: 5.49s
82:     learn: 0.4227916     total: 3.86s     remaining: 5.44s
83:     learn: 0.4220519     total: 3.91s     remaining: 5.4s
84:     learn: 0.4216249     total: 3.96s     remaining: 5.35s
85:     learn: 0.4210124     total: 4s        remaining: 5.31s
86:     learn: 0.4206657     total: 4.05s     remaining: 5.26s
87:     learn: 0.4202504     total: 4.1s      remaining: 5.21s
88:     learn: 0.4200125     total: 4.15s     remaining: 5.17s
89:     learn: 0.4198592     total: 4.19s     remaining: 5.12s
90:     learn: 0.4195116     total: 4.24s     remaining: 5.08s
91:     learn: 0.4192809     total: 4.29s     remaining: 5.03s
92:     learn: 0.4191635     total: 4.33s     remaining: 4.98s
93:     learn: 0.4187231     total: 4.38s     remaining: 4.94s
94:     learn: 0.4182689     total: 4.43s     remaining: 4.89s
95:     learn: 0.4180369     total: 4.48s     remaining: 4.86s
```

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96:     learn: 0.4178647      total: 4.54s      remaining: 4.82s
97:     learn: 0.4176549      total: 4.58s      remaining: 4.77s
98:     learn: 0.4174890      total: 4.63s      remaining: 4.73s
99:     learn: 0.4174838      total: 4.66s      remaining: 4.66s
100:    learn: 0.4171674      total: 4.71s      remaining: 4.62s
101:    learn: 0.4166770      total: 4.76s      remaining: 4.57s
102:    learn: 0.4159435      total: 4.81s      remaining: 4.53s
103:    learn: 0.4158140      total: 4.87s      remaining: 4.5s
104:    learn: 0.4156791      total: 4.94s      remaining: 4.47s
105:    learn: 0.4156626      total: 4.99s      remaining: 4.43s
106:    learn: 0.4155395      total: 5.04s      remaining: 4.38s
107:    learn: 0.4154040      total: 5.08s      remaining: 4.33s
108:    learn: 0.4150284      total: 5.14s      remaining: 4.29s
109:    learn: 0.4147099      total: 5.19s      remaining: 4.24s
110:    learn: 0.4142639      total: 5.23s      remaining: 4.19s
111:    learn: 0.4140365      total: 5.3s       remaining: 4.16s
112:    learn: 0.4138341      total: 5.35s      remaining: 4.12s
113:    learn: 0.4137969      total: 5.41s      remaining: 4.08s
114:    learn: 0.4134373      total: 5.47s      remaining: 4.04s
115:    learn: 0.4132468      total: 5.53s      remaining: 4s
116:    learn: 0.4128477      total: 5.58s      remaining: 3.96s
117:    learn: 0.4126462      total: 5.62s      remaining: 3.91s
118:    learn: 0.4123209      total: 5.69s      remaining: 3.88s
119:    learn: 0.4122054      total: 5.75s      remaining: 3.83s
120:    learn: 0.4118778      total: 5.8s       remaining: 3.79s
121:    learn: 0.4117104      total: 5.86s      remaining: 3.75s
122:    learn: 0.4116307      total: 5.93s      remaining: 3.71s
123:    learn: 0.4113397      total: 5.99s      remaining: 3.67s
124:    learn: 0.4108581      total: 6.05s      remaining: 3.63s
125:    learn: 0.4104723      total: 6.11s      remaining: 3.59s
126:    learn: 0.4103036      total: 6.16s      remaining: 3.54s
127:    learn: 0.4101754      total: 6.21s      remaining: 3.5s
128:    learn: 0.4100579      total: 6.26s      remaining: 3.44s
129:    learn: 0.4096905      total: 6.31s      remaining: 3.4s
130:    learn: 0.4093146      total: 6.35s      remaining: 3.35s
131:    learn: 0.4089570      total: 6.41s      remaining: 3.3s
132:    learn: 0.4086834      total: 6.47s      remaining: 3.26s
133:    learn: 0.4086311      total: 6.53s      remaining: 3.22s
134:    learn: 0.4083398      total: 6.58s      remaining: 3.17s
135:    learn: 0.4080059      total: 6.64s      remaining: 3.13s
136:    learn: 0.4077714      total: 6.7s       remaining: 3.08s
137:    learn: 0.4073232      total: 6.75s      remaining: 3.04s
138:    learn: 0.4070317      total: 6.82s      remaining: 2.99s
139:    learn: 0.4069344      total: 6.88s      remaining: 2.95s
140:    learn: 0.4065727      total: 6.95s      remaining: 2.91s
141:    learn: 0.4062397      total: 7s         remaining: 2.86s
142:    learn: 0.4058988      total: 7.05s      remaining: 2.81s
143:    learn: 0.4058680      total: 7.12s      remaining: 2.77s
```

```
144:    learn: 0.4055045    total: 7.18s    remaining: 2.72s
145:    learn: 0.4054071    total: 7.22s    remaining: 2.67s
146:    learn: 0.4053861    total: 7.29s    remaining: 2.63s
147:    learn: 0.4051910    total: 7.36s    remaining: 2.59s
148:    learn: 0.4050329    total: 7.41s    remaining: 2.54s
149:    learn: 0.4048498    total: 7.46s    remaining: 2.48s
150:    learn: 0.4046655    total: 7.52s    remaining: 2.44s
151:    learn: 0.4045975    total: 7.57s    remaining: 2.39s
152:    learn: 0.4041411    total: 7.63s    remaining: 2.35s
153:    learn: 0.4040890    total: 7.71s    remaining: 2.3s
154:    learn: 0.4037310    total: 7.76s    remaining: 2.25s
155:    learn: 0.4036537    total: 7.81s    remaining: 2.2s
156:    learn: 0.4033202    total: 7.86s    remaining: 2.15s
157:    learn: 0.4032700    total: 7.91s    remaining: 2.1s
158:    learn: 0.4030648    total: 7.96s    remaining: 2.05s
159:    learn: 0.4027790    total: 8.01s    remaining: 2s
160:    learn: 0.4026492    total: 8.05s    remaining: 1.95s
161:    learn: 0.4024754    total: 8.1s     remaining: 1.9s
162:    learn: 0.4021514    total: 8.14s    remaining: 1.85s
163:    learn: 0.4020379    total: 8.2s     remaining: 1.8s
164:    learn: 0.4018374    total: 8.25s    remaining: 1.75s
165:    learn: 0.4017878    total: 8.29s    remaining: 1.7s
166:    learn: 0.4013789    total: 8.33s    remaining: 1.65s
167:    learn: 0.4012236    total: 8.39s    remaining: 1.6s
168:    learn: 0.4010125    total: 8.44s    remaining: 1.55s
169:    learn: 0.4009134    total: 8.49s    remaining: 1.5s
170:    learn: 0.4007628    total: 8.55s    remaining: 1.45s
171:    learn: 0.4006704    total: 8.59s    remaining: 1.4s
172:    learn: 0.4006192    total: 8.64s    remaining: 1.35s
173:    learn: 0.4003059    total: 8.72s    remaining: 1.3s
174:    learn: 0.4001972    total: 8.77s    remaining: 1.25s
175:    learn: 0.4001022    total: 8.82s    remaining: 1.2s
176:    learn: 0.4000052    total: 8.88s    remaining: 1.15s
177:    learn: 0.3998624    total: 8.93s    remaining: 1.1s
178:    learn: 0.3996663    total: 8.99s    remaining: 1.05s
179:    learn: 0.3995009    total: 9.04s    remaining: 1s
180:    learn: 0.3993641    total: 9.09s    remaining: 954ms
181:    learn: 0.3993534    total: 9.13s    remaining: 903ms
182:    learn: 0.3992235    total: 9.17s    remaining: 852ms
183:    learn: 0.3990122    total: 9.23s    remaining: 802ms
184:    learn: 0.3987704    total: 9.29s    remaining: 753ms
185:    learn: 0.3984118    total: 9.35s    remaining: 704ms
186:    learn: 0.3982104    total: 9.4s     remaining: 654ms
187:    learn: 0.3980688    total: 9.46s    remaining: 604ms
188:    learn: 0.3980377    total: 9.51s    remaining: 553ms
189:    learn: 0.3978711    total: 9.55s    remaining: 503ms
190:    learn: 0.3977880    total: 9.62s    remaining: 453ms
191:    learn: 0.3976559    total: 9.69s    remaining: 404ms
```

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192:    learn: 0.3974652    total: 9.74s    remaining: 353ms
193:    learn: 0.3974042    total: 9.79s    remaining: 303ms
194:    learn: 0.3972884    total: 9.85s    remaining: 252ms
195:    learn: 0.3972612    total: 9.89s    remaining: 202ms
196:    learn: 0.3970872    total: 9.96s    remaining: 152ms
197:    learn: 0.3970191    total: 10s      remaining: 101ms
198:    learn: 0.3968210    total: 10.1s    remaining: 50.6ms
199:    learn: 0.3966189    total: 10.1s    remaining: 0us
```
Mean train f1-score of data (CV) 1 is : 0.819883192619404
Mean test f1-score of data (CV) 1 is : 0.8071966780608375

Shape of data 2 is :
(27303, 10)
Distribution of 2 is :
Yes   14102
No   13201
Name: TIMELY_RESPONSE, dtype: int64

<IPython.core.display.HTML object>

MetricVisualizer(layout=Layout(align_self='stretch', height='500px'))

Train f1_score [Yes]: for data 2 is : 0.8168075229139389
Train f1_score [No]: for data 2 is : 0.8195003713984127

	precision	recall	f1-score	support
No	0.78	0.86	0.82	924
Yes	0.85	0.78	0.81	988
accuracy			0.82	1912
macro avg	0.82	0.82	0.82	1912
weighted avg	0.82	0.82	0.82	1912
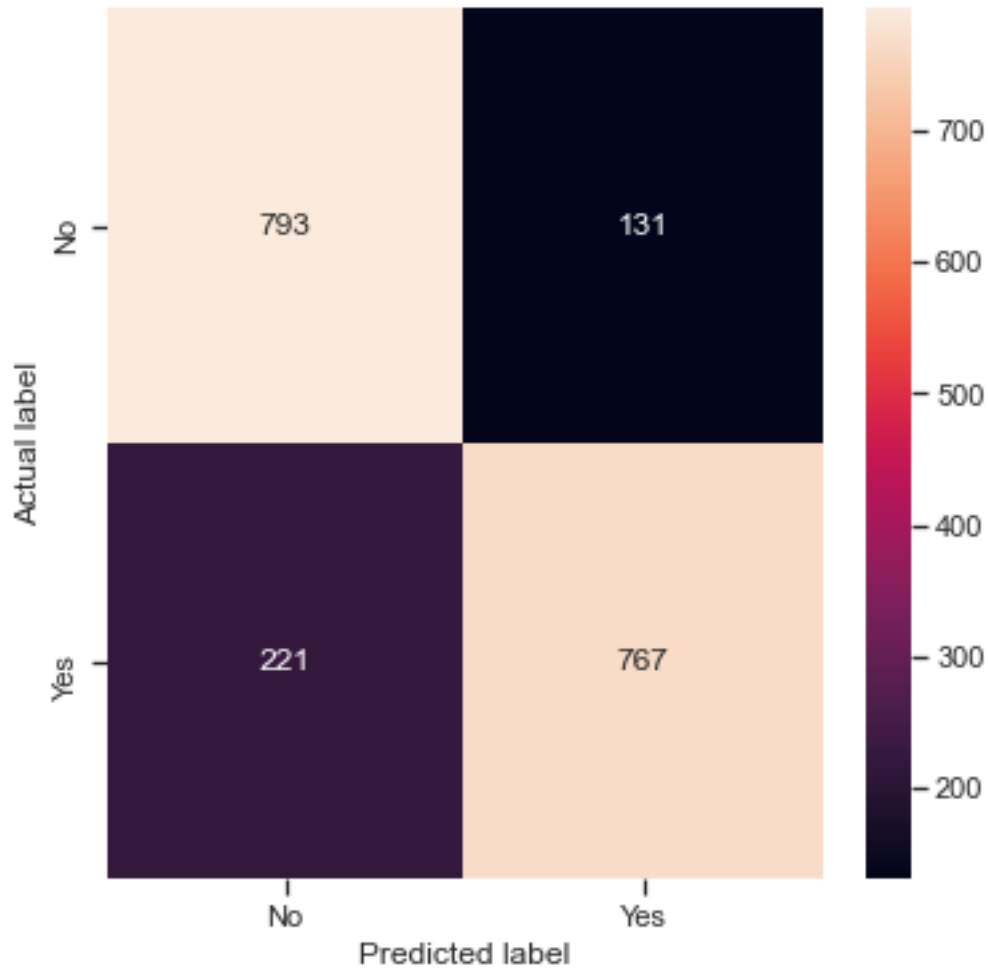
Cross validation result for data 2 is :

```
0:      learn: 0.6455315      total: 43.3ms    remaining: 8.61s
1:      learn: 0.5975437      total: 90.5ms    remaining: 8.96s
2:      learn: 0.5696486      total: 136ms     remaining: 8.93s
3:      learn: 0.5479973      total: 192ms     remaining: 9.4s
4:      learn: 0.5304259      total: 233ms     remaining: 9.08s
5:      learn: 0.5117665      total: 295ms     remaining: 9.54s
6:      learn: 0.5007855      total: 401ms     remaining: 11.1s
7:      learn: 0.4919359      total: 446ms     remaining: 10.7s
8:      learn: 0.4843130      total: 574ms     remaining: 12.2s
9:      learn: 0.4783184      total: 663ms     remaining: 12.6s
10:     learn: 0.4728186      total: 731ms     remaining: 12.6s
11:     learn: 0.4663439      total: 793ms     remaining: 12.4s
12:     learn: 0.4628618      total: 873ms     remaining: 12.6s
13:     learn: 0.4586512      total: 937ms     remaining: 12.4s
14:     learn: 0.4561272      total: 984ms     remaining: 12.1s
15:     learn: 0.4544056      total: 1.07s     remaining: 12.3s
```

```
16:     learn: 0.4524421      total: 1.14s      remaining: 12.2s
17:     learn: 0.4509334      total: 1.18s      remaining: 12s
18:     learn: 0.4490441      total: 1.25s      remaining: 11.9s
19:     learn: 0.4473587      total: 1.31s      remaining: 11.8s
20:     learn: 0.4458944      total: 1.36s      remaining: 11.6s
21:     learn: 0.4448515      total: 1.43s      remaining: 11.6s
22:     learn: 0.4435747      total: 1.49s      remaining: 11.5s
23:     learn: 0.4425547      total: 1.55s      remaining: 11.4s
24:     learn: 0.4418046      total: 1.6s       remaining: 11.2s
25:     learn: 0.4407663      total: 1.67s      remaining: 11.2s
26:     learn: 0.4401616      total: 1.72s      remaining: 11s
27:     learn: 0.4394185      total: 1.78s      remaining: 11s
28:     learn: 0.4390474      total: 1.91s      remaining: 11.3s
29:     learn: 0.4385650      total: 2s         remaining: 11.3s
30:     learn: 0.4384177      total: 2.07s      remaining: 11.3s
31:     learn: 0.4380624      total: 2.15s      remaining: 11.3s
32:     learn: 0.4377484      total: 2.21s      remaining: 11.2s
33:     learn: 0.4374228      total: 2.27s      remaining: 11.1s
34:     learn: 0.4369464      total: 2.32s      remaining: 10.9s
35:     learn: 0.4365307      total: 2.36s      remaining: 10.8s
36:     learn: 0.4359232      total: 2.41s      remaining: 10.6s
37:     learn: 0.4356005      total: 2.46s      remaining: 10.5s
38:     learn: 0.4353861      total: 2.52s      remaining: 10.4s
39:     learn: 0.4351689      total: 2.57s      remaining: 10.3s
40:     learn: 0.4349509      total: 2.62s      remaining: 10.2s
41:     learn: 0.4343753      total: 2.68s      remaining: 10.1s
42:     learn: 0.4341541      total: 2.73s      remaining: 9.95s
43:     learn: 0.4336661      total: 2.77s      remaining: 9.83s
44:     learn: 0.4334331      total: 2.85s      remaining: 9.8s
45:     learn: 0.4332970      total: 2.9s       remaining: 9.73s
46:     learn: 0.4328330      total: 2.98s      remaining: 9.7s
47:     learn: 0.4326042      total: 3.04s      remaining: 9.63s
48:     learn: 0.4321178      total: 3.1s       remaining: 9.54s
49:     learn: 0.4314470      total: 3.16s      remaining: 9.47s
50:     learn: 0.4312070      total: 3.21s      remaining: 9.39s
51:     learn: 0.4300112      total: 3.33s      remaining: 9.47s
52:     learn: 0.4297554      total: 3.38s      remaining: 9.38s
53:     learn: 0.4287331      total: 3.44s      remaining: 9.31s
54:     learn: 0.4285189      total: 3.52s      remaining: 9.27s
55:     learn: 0.4281133      total: 3.58s      remaining: 9.2s
56:     learn: 0.4277445      total: 3.62s      remaining: 9.09s
57:     learn: 0.4273334      total: 3.68s      remaining: 9.01s
58:     learn: 0.4272088      total: 3.73s      remaining: 8.9s
59:     learn: 0.4269038      total: 3.78s      remaining: 8.81s
60:     learn: 0.4267175      total: 3.82s      remaining: 8.71s
61:     learn: 0.4264885      total: 3.89s      remaining: 8.66s
62:     learn: 0.4260562      total: 3.94s      remaining: 8.56s
63:     learn: 0.4257999      total: 3.98s      remaining: 8.46s
```

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64:     learn: 0.4253612     total: 4.03s     remaining: 8.37s
65:     learn: 0.4252875     total: 4.07s     remaining: 8.27s
66:     learn: 0.4249650     total: 4.16s     remaining: 8.25s
67:     learn: 0.4249156     total: 4.24s     remaining: 8.23s
68:     learn: 0.4247795     total: 4.29s     remaining: 8.15s
69:     learn: 0.4244614     total: 4.36s     remaining: 8.1s
70:     learn: 0.4244610     total: 4.38s     remaining: 7.96s
71:     learn: 0.4242818     total: 4.45s     remaining: 7.91s
72:     learn: 0.4240465     total: 4.51s     remaining: 7.84s
73:     learn: 0.4236033     total: 4.57s     remaining: 7.79s
74:     learn: 0.4235998     total: 4.6s      remaining: 7.67s
75:     learn: 0.4232183     total: 4.65s     remaining: 7.58s
76:     learn: 0.4230230     total: 4.7s      remaining: 7.51s
77:     learn: 0.4230200     total: 4.73s     remaining: 7.39s
78:     learn: 0.4225061     total: 4.77s     remaining: 7.31s
79:     learn: 0.4216333     total: 4.83s     remaining: 7.25s
80:     learn: 0.4214604     total: 4.9s      remaining: 7.19s
81:     learn: 0.4209581     total: 4.96s     remaining: 7.13s
82:     learn: 0.4206266     total: 5.03s     remaining: 7.09s
83:     learn: 0.4206169     total: 5.04s     remaining: 6.97s
84:     learn: 0.4203994     total: 5.1s      remaining: 6.89s
85:     learn: 0.4197155     total: 5.14s     remaining: 6.82s
86:     learn: 0.4195671     total: 5.2s      remaining: 6.75s
87:     learn: 0.4195150     total: 5.26s     remaining: 6.69s
88:     learn: 0.4194238     total: 5.32s     remaining: 6.63s
89:     learn: 0.4188819     total: 5.37s     remaining: 6.56s
90:     learn: 0.4187617     total: 5.43s     remaining: 6.5s
91:     learn: 0.4183367     total: 5.49s     remaining: 6.44s
92:     learn: 0.4181981     total: 5.56s     remaining: 6.4s
93:     learn: 0.4179207     total: 5.63s     remaining: 6.34s
94:     learn: 0.4178117     total: 5.68s     remaining: 6.27s
95:     learn: 0.4175042     total: 5.72s     remaining: 6.2s
96:     learn: 0.4173325     total: 5.78s     remaining: 6.13s
97:     learn: 0.4170593     total: 5.82s     remaining: 6.06s
98:     learn: 0.4167156     total: 5.88s     remaining: 6s
99:     learn: 0.4165440     total: 5.93s     remaining: 5.93s
100:    learn: 0.4165219     total: 5.98s     remaining: 5.86s
101:    learn: 0.4163747     total: 6.03s     remaining: 5.79s
102:    learn: 0.4162906     total: 6.08s     remaining: 5.73s
103:    learn: 0.4161171     total: 6.14s     remaining: 5.67s
104:    learn: 0.4161076     total: 6.2s      remaining: 5.61s
105:    learn: 0.4155936     total: 6.25s     remaining: 5.54s
106:    learn: 0.4154018     total: 6.31s     remaining: 5.49s
107:    learn: 0.4151161     total: 6.38s     remaining: 5.44s
108:    learn: 0.4148427     total: 6.43s     remaining: 5.37s
109:    learn: 0.4147446     total: 6.48s     remaining: 5.3s
110:    learn: 0.4139887     total: 6.54s     remaining: 5.24s
111:    learn: 0.4139280     total: 6.6s      remaining: 5.18s
```

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112:    learn: 0.4132724       total: 6.66s      remaining: 5.13s
113:    learn: 0.4130527       total: 6.71s      remaining: 5.06s
114:    learn: 0.4126322       total: 6.78s      remaining: 5.01s
115:    learn: 0.4126243       total: 6.83s      remaining: 4.95s
116:    learn: 0.4120887       total: 6.88s      remaining: 4.88s
117:    learn: 0.4120545       total: 6.94s      remaining: 4.82s
118:    learn: 0.4120380       total: 6.99s      remaining: 4.76s
119:    learn: 0.4117734       total: 7.05s      remaining: 4.7s
120:    learn: 0.4117646       total: 7.1s       remaining: 4.63s
121:    learn: 0.4115295       total: 7.17s      remaining: 4.58s
122:    learn: 0.4111278       total: 7.24s      remaining: 4.53s
123:    learn: 0.4107613       total: 7.33s      remaining: 4.49s
124:    learn: 0.4105576       total: 7.39s      remaining: 4.43s
125:    learn: 0.4105380       total: 7.46s      remaining: 4.38s
126:    learn: 0.4101258       total: 7.53s      remaining: 4.33s
127:    learn: 0.4100175       total: 7.59s      remaining: 4.27s
128:    learn: 0.4098337       total: 7.64s      remaining: 4.2s
129:    learn: 0.4096885       total: 7.7s       remaining: 4.14s
130:    learn: 0.4095303       total: 7.76s      remaining: 4.08s
131:    learn: 0.4093896       total: 7.8s       remaining: 4.02s
132:    learn: 0.4087866       total: 7.86s      remaining: 3.96s
133:    learn: 0.4083235       total: 7.92s      remaining: 3.9s
134:    learn: 0.4082366       total: 7.99s      remaining: 3.85s
135:    learn: 0.4081687       total: 8.04s      remaining: 3.78s
136:    learn: 0.4080611       total: 8.12s      remaining: 3.73s
137:    learn: 0.4076927       total: 8.19s      remaining: 3.68s
138:    learn: 0.4076270       total: 8.25s      remaining: 3.62s
139:    learn: 0.4076174       total: 8.31s      remaining: 3.56s
140:    learn: 0.4074619       total: 8.37s      remaining: 3.5s
141:    learn: 0.4070476       total: 8.43s      remaining: 3.44s
142:    learn: 0.4068832       total: 8.49s      remaining: 3.38s
143:    learn: 0.4066309       total: 8.59s      remaining: 3.34s
144:    learn: 0.4065090       total: 8.65s      remaining: 3.28s
145:    learn: 0.4064788       total: 8.72s      remaining: 3.23s
146:    learn: 0.4063534       total: 8.78s      remaining: 3.17s
147:    learn: 0.4063418       total: 8.84s      remaining: 3.11s
148:    learn: 0.4060713       total: 8.9s       remaining: 3.05s
149:    learn: 0.4058326       total: 8.95s      remaining: 2.98s
150:    learn: 0.4054608       total: 9.01s      remaining: 2.92s
151:    learn: 0.4052507       total: 9.06s      remaining: 2.86s
152:    learn: 0.4051119       total: 9.11s      remaining: 2.8s
153:    learn: 0.4049599       total: 9.15s      remaining: 2.73s
154:    learn: 0.4048484       total: 9.2s       remaining: 2.67s
155:    learn: 0.4043768       total: 9.26s      remaining: 2.61s
156:    learn: 0.4043392       total: 9.32s      remaining: 2.55s
157:    learn: 0.4042687       total: 9.37s      remaining: 2.49s
158:    learn: 0.4040383       total: 9.43s      remaining: 2.43s
159:    learn: 0.4039246       total: 9.49s      remaining: 2.37s
```

```
160:     learn: 0.4038252     total: 9.55s     remaining: 2.31s
161:     learn: 0.4035904     total: 9.62s     remaining: 2.26s
162:     learn: 0.4035087     total: 9.68s     remaining: 2.2s
163:     learn: 0.4034833     total: 9.74s     remaining: 2.14s
164:     learn: 0.4032795     total: 9.81s     remaining: 2.08s
165:     learn: 0.4030375     total: 9.87s     remaining: 2.02s
166:     learn: 0.4027225     total: 9.92s     remaining: 1.96s
167:     learn: 0.4026406     total: 9.98s     remaining: 1.9s
168:     learn: 0.4022948     total: 10s       remaining: 1.84s
169:     learn: 0.4019862     total: 10.1s     remaining: 1.78s
170:     learn: 0.4018058     total: 10.2s     remaining: 1.72s
171:     learn: 0.4017053     total: 10.2s     remaining: 1.66s
172:     learn: 0.4015815     total: 10.3s     remaining: 1.6s
173:     learn: 0.4015735     total: 10.3s     remaining: 1.54s
174:     learn: 0.4012376     total: 10.4s     remaining: 1.48s
175:     learn: 0.4011941     total: 10.4s     remaining: 1.42s
176:     learn: 0.4011654     total: 10.5s     remaining: 1.36s
177:     learn: 0.4010434     total: 10.5s     remaining: 1.3s
178:     learn: 0.4009334     total: 10.6s     remaining: 1.24s
179:     learn: 0.4006510     total: 10.7s     remaining: 1.18s
180:     learn: 0.4005013     total: 10.7s     remaining: 1.12s
181:     learn: 0.4001013     total: 10.8s     remaining: 1.07s
182:     learn: 0.4000173     total: 10.8s     remaining: 1.01s
183:     learn: 0.3998925     total: 10.9s     remaining: 947ms
184:     learn: 0.3996698     total: 10.9s     remaining: 887ms
185:     learn: 0.3996325     total: 11s       remaining: 827ms
186:     learn: 0.3994588     total: 11s       remaining: 767ms
187:     learn: 0.3994418     total: 11.1s     remaining: 707ms
188:     learn: 0.3993319     total: 11.1s     remaining: 648ms
189:     learn: 0.3992510     total: 11.2s     remaining: 589ms
190:     learn: 0.3991392     total: 11.2s     remaining: 530ms
191:     learn: 0.3990287     total: 11.3s     remaining: 471ms
192:     learn: 0.3989810     total: 11.4s     remaining: 412ms
193:     learn: 0.3988150     total: 11.4s     remaining: 353ms
194:     learn: 0.3986685     total: 11.5s     remaining: 294ms
195:     learn: 0.3985332     total: 11.5s     remaining: 235ms
196:     learn: 0.3982518     total: 11.6s     remaining: 177ms
197:     learn: 0.3982358     total: 11.6s     remaining: 118ms
198:     learn: 0.3981111     total: 11.7s     remaining: 58.7ms
199:     learn: 0.3978047     total: 11.8s     remaining: 0us
0:       learn: 0.6457928     total: 42.4ms    remaining: 8.43s
1:       learn: 0.6016005     total: 87.3ms    remaining: 8.64s
2:       learn: 0.5700256     total: 131ms     remaining: 8.61s
3:       learn: 0.5518478     total: 173ms     remaining: 8.45s
4:       learn: 0.5361568     total: 244ms     remaining: 9.5s
5:       learn: 0.5233600     total: 295ms     remaining: 9.53s
6:       learn: 0.5140305     total: 340ms     remaining: 9.37s
7:       learn: 0.5011639     total: 380ms     remaining: 9.12s
```

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8:        learn: 0.4937005        total: 445ms        remaining: 9.45s
9:        learn: 0.4866019        total: 490ms        remaining: 9.3s
10:       learn: 0.4796119        total: 537ms        remaining: 9.23s
11:       learn: 0.4744720        total: 593ms        remaining: 9.28s
12:       learn: 0.4700790        total: 636ms        remaining: 9.14s
13:       learn: 0.4644810        total: 681ms        remaining: 9.05s
14:       learn: 0.4611832        total: 730ms        remaining: 9s
15:       learn: 0.4588130        total: 779ms        remaining: 8.95s
16:       learn: 0.4567809        total: 825ms        remaining: 8.88s
17:       learn: 0.4549705        total: 866ms        remaining: 8.75s
18:       learn: 0.4528771        total: 918ms        remaining: 8.75s
19:       learn: 0.4514400        total: 975ms        remaining: 8.78s
20:       learn: 0.4501935        total: 1.03s        remaining: 8.82s
21:       learn: 0.4487505        total: 1.08s        remaining: 8.73s
22:       learn: 0.4473116        total: 1.13s        remaining: 8.7s
23:       learn: 0.4464424        total: 1.18s        remaining: 8.69s
24:       learn: 0.4452141        total: 1.24s        remaining: 8.66s
25:       learn: 0.4446947        total: 1.29s        remaining: 8.64s
26:       learn: 0.4437678        total: 1.34s        remaining: 8.62s
27:       learn: 0.4433673        total: 1.41s        remaining: 8.65s
28:       learn: 0.4427760        total: 1.45s        remaining: 8.56s
29:       learn: 0.4422486        total: 1.5s         remaining: 8.5s
30:       learn: 0.4413554        total: 1.54s        remaining: 8.41s
31:       learn: 0.4409094        total: 1.59s        remaining: 8.36s
32:       learn: 0.4402945        total: 1.64s        remaining: 8.32s
33:       learn: 0.4397087        total: 1.69s        remaining: 8.25s
34:       learn: 0.4393182        total: 1.73s        remaining: 8.16s
35:       learn: 0.4388609        total: 1.79s        remaining: 8.15s
36:       learn: 0.4386118        total: 1.83s        remaining: 8.08s
37:       learn: 0.4382568        total: 1.9s         remaining: 8.1s
38:       learn: 0.4375945        total: 1.97s        remaining: 8.13s
39:       learn: 0.4375452        total: 1.99s        remaining: 7.95s
40:       learn: 0.4372823        total: 2.04s        remaining: 7.9s
41:       learn: 0.4372427        total: 2.08s        remaining: 7.82s
42:       learn: 0.4364871        total: 2.13s        remaining: 7.8s
43:       learn: 0.4361375        total: 2.18s        remaining: 7.74s
44:       learn: 0.4358518        total: 2.25s        remaining: 7.74s
45:       learn: 0.4355187        total: 2.3s         remaining: 7.7s
46:       learn: 0.4352712        total: 2.34s        remaining: 7.63s
47:       learn: 0.4347594        total: 2.4s         remaining: 7.59s
48:       learn: 0.4343728        total: 2.45s        remaining: 7.54s
49:       learn: 0.4337681        total: 2.5s         remaining: 7.49s
50:       learn: 0.4328798        total: 2.54s        remaining: 7.42s
51:       learn: 0.4324460        total: 2.6s         remaining: 7.41s
52:       learn: 0.4318126        total: 2.68s        remaining: 7.43s
53:       learn: 0.4316258        total: 2.73s        remaining: 7.37s
54:       learn: 0.4312946        total: 2.77s        remaining: 7.31s
55:       learn: 0.4312134        total: 2.81s        remaining: 7.24s
```

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56:     learn: 0.4308348        total: 2.86s    remaining: 7.18s
57:     learn: 0.4304523        total: 2.92s    remaining: 7.14s
58:     learn: 0.4295474        total: 2.96s    remaining: 7.09s
59:     learn: 0.4291340        total: 3.03s    remaining: 7.08s
60:     learn: 0.4285981        total: 3.09s    remaining: 7.05s
61:     learn: 0.4280638        total: 3.15s    remaining: 7.02s
62:     learn: 0.4278038        total: 3.21s    remaining: 6.99s
63:     learn: 0.4275254        total: 3.26s    remaining: 6.93s
64:     learn: 0.4263250        total: 3.31s    remaining: 6.87s
65:     learn: 0.4260202        total: 3.35s    remaining: 6.81s
66:     learn: 0.4258249        total: 3.39s    remaining: 6.74s
67:     learn: 0.4253062        total: 3.47s    remaining: 6.74s
68:     learn: 0.4251706        total: 3.52s    remaining: 6.68s
69:     learn: 0.4247372        total: 3.6s     remaining: 6.68s
70:     learn: 0.4244746        total: 3.66s    remaining: 6.65s
71:     learn: 0.4242938        total: 3.71s    remaining: 6.6s
72:     learn: 0.4241079        total: 3.75s    remaining: 6.53s
73:     learn: 0.4237548        total: 3.82s    remaining: 6.5s
74:     learn: 0.4231393        total: 3.88s    remaining: 6.47s
75:     learn: 0.4230517        total: 3.94s    remaining: 6.42s
76:     learn: 0.4228992        total: 3.99s    remaining: 6.37s
77:     learn: 0.4226148        total: 4.05s    remaining: 6.34s
78:     learn: 0.4220459        total: 4.09s    remaining: 6.27s
79:     learn: 0.4220023        total: 4.13s    remaining: 6.19s
80:     learn: 0.4218744        total: 4.19s    remaining: 6.15s
81:     learn: 0.4217401        total: 4.23s    remaining: 6.09s
82:     learn: 0.4214946        total: 4.28s    remaining: 6.04s
83:     learn: 0.4210595        total: 4.32s    remaining: 5.97s
84:     learn: 0.4209090        total: 4.38s    remaining: 5.93s
85:     learn: 0.4206331        total: 4.43s    remaining: 5.87s
86:     learn: 0.4204675        total: 4.47s    remaining: 5.81s
87:     learn: 0.4202953        total: 4.53s    remaining: 5.77s
88:     learn: 0.4199783        total: 4.59s    remaining: 5.72s
89:     learn: 0.4199777        total: 4.62s    remaining: 5.65s
90:     learn: 0.4197099        total: 4.67s    remaining: 5.6s
91:     learn: 0.4194286        total: 4.73s    remaining: 5.55s
92:     learn: 0.4192476        total: 4.78s    remaining: 5.5s
93:     learn: 0.4189161        total: 4.84s    remaining: 5.46s
94:     learn: 0.4186456        total: 4.91s    remaining: 5.42s
95:     learn: 0.4185468        total: 4.97s    remaining: 5.38s
96:     learn: 0.4183424        total: 5.02s    remaining: 5.33s
97:     learn: 0.4180722        total: 5.08s    remaining: 5.29s
98:     learn: 0.4179330        total: 5.13s    remaining: 5.23s
99:     learn: 0.4176107        total: 5.18s    remaining: 5.18s
100:    learn: 0.4172902        total: 5.24s    remaining: 5.13s
101:    learn: 0.4171265        total: 5.28s    remaining: 5.08s
102:    learn: 0.4166201        total: 5.34s    remaining: 5.03s
103:    learn: 0.4164248        total: 5.39s    remaining: 4.97s
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104:    learn: 0.4160611    total: 5.45s    remaining: 4.93s
105:    learn: 0.4158725    total: 5.49s    remaining: 4.87s
106:    learn: 0.4155811    total: 5.54s    remaining: 4.81s
107:    learn: 0.4155018    total: 5.58s    remaining: 4.75s
108:    learn: 0.4151926    total: 5.63s    remaining: 4.71s
109:    learn: 0.4150707    total: 5.69s    remaining: 4.66s
110:    learn: 0.4149433    total: 5.74s    remaining: 4.6s
111:    learn: 0.4146546    total: 5.79s    remaining: 4.55s
112:    learn: 0.4145497    total: 5.85s    remaining: 4.5s
113:    learn: 0.4139193    total: 5.91s    remaining: 4.46s
114:    learn: 0.4135280    total: 6.01s    remaining: 4.45s
115:    learn: 0.4133429    total: 6.08s    remaining: 4.4s
116:    learn: 0.4129565    total: 6.14s    remaining: 4.35s
117:    learn: 0.4128539    total: 6.2s     remaining: 4.3s
118:    learn: 0.4127007    total: 6.25s    remaining: 4.25s
119:    learn: 0.4124578    total: 6.29s    remaining: 4.2s
120:    learn: 0.4122691    total: 6.35s    remaining: 4.15s
121:    learn: 0.4116805    total: 6.41s    remaining: 4.09s
122:    learn: 0.4114477    total: 6.47s    remaining: 4.05s
123:    learn: 0.4111449    total: 6.52s    remaining: 4s
124:    learn: 0.4109815    total: 6.57s    remaining: 3.94s
125:    learn: 0.4106749    total: 6.63s    remaining: 3.9s
126:    learn: 0.4104161    total: 6.68s    remaining: 3.84s
127:    learn: 0.4098584    total: 6.74s    remaining: 3.79s
128:    learn: 0.4095971    total: 6.8s     remaining: 3.75s
129:    learn: 0.4095017    total: 6.86s    remaining: 3.7s
130:    learn: 0.4092664    total: 6.92s    remaining: 3.64s
131:    learn: 0.4089709    total: 6.97s    remaining: 3.59s
132:    learn: 0.4089472    total: 7.02s    remaining: 3.54s
133:    learn: 0.4087148    total: 7.06s    remaining: 3.48s
134:    learn: 0.4085782    total: 7.11s    remaining: 3.42s
135:    learn: 0.4084792    total: 7.16s    remaining: 3.37s
136:    learn: 0.4084165    total: 7.21s    remaining: 3.31s
137:    learn: 0.4082531    total: 7.25s    remaining: 3.26s
138:    learn: 0.4080763    total: 7.29s    remaining: 3.2s
139:    learn: 0.4077739    total: 7.35s    remaining: 3.15s
140:    learn: 0.4075363    total: 7.39s    remaining: 3.09s
141:    learn: 0.4074625    total: 7.45s    remaining: 3.04s
142:    learn: 0.4072480    total: 7.51s    remaining: 2.99s
143:    learn: 0.4071098    total: 7.57s    remaining: 2.94s
144:    learn: 0.4068159    total: 7.62s    remaining: 2.89s
145:    learn: 0.4067213    total: 7.68s    remaining: 2.84s
146:    learn: 0.4065728    total: 7.72s    remaining: 2.78s
147:    learn: 0.4064555    total: 7.78s    remaining: 2.73s
148:    learn: 0.4061909    total: 7.82s    remaining: 2.68s
149:    learn: 0.4060031    total: 7.87s    remaining: 2.62s
150:    learn: 0.4059872    total: 7.91s    remaining: 2.57s
151:    learn: 0.4058026    total: 7.98s    remaining: 2.52s
```

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152:    learn: 0.4055392    total: 8.03s    remaining: 2.46s
153:    learn: 0.4054233    total: 8.07s    remaining: 2.41s
154:    learn: 0.4054013    total: 8.11s    remaining: 2.35s
155:    learn: 0.4053120    total: 8.18s    remaining: 2.31s
156:    learn: 0.4052046    total: 8.24s    remaining: 2.26s
157:    learn: 0.4050969    total: 8.29s    remaining: 2.2s
158:    learn: 0.4048064    total: 8.34s    remaining: 2.15s
159:    learn: 0.4047001    total: 8.39s    remaining: 2.1s
160:    learn: 0.4045721    total: 8.44s    remaining: 2.04s
161:    learn: 0.4044407    total: 8.48s    remaining: 1.99s
162:    learn: 0.4042485    total: 8.53s    remaining: 1.94s
163:    learn: 0.4041772    total: 8.58s    remaining: 1.88s
164:    learn: 0.4039982    total: 8.65s    remaining: 1.83s
165:    learn: 0.4034257    total: 8.71s    remaining: 1.78s
166:    learn: 0.4031815    total: 8.77s    remaining: 1.73s
167:    learn: 0.4030880    total: 8.82s    remaining: 1.68s
168:    learn: 0.4028543    total: 8.89s    remaining: 1.63s
169:    learn: 0.4026490    total: 8.96s    remaining: 1.58s
170:    learn: 0.4025499    total: 9.02s    remaining: 1.53s
171:    learn: 0.4024015    total: 9.06s    remaining: 1.47s
172:    learn: 0.4022503    total: 9.11s    remaining: 1.42s
173:    learn: 0.4019933    total: 9.18s    remaining: 1.37s
174:    learn: 0.4016782    total: 9.23s    remaining: 1.32s
175:    learn: 0.4012597    total: 9.29s    remaining: 1.27s
176:    learn: 0.4010816    total: 9.35s    remaining: 1.22s
177:    learn: 0.4007716    total: 9.42s    remaining: 1.16s
178:    learn: 0.4006475    total: 9.47s    remaining: 1.11s
179:    learn: 0.4005316    total: 9.53s    remaining: 1.06s
180:    learn: 0.4003641    total: 9.59s    remaining: 1.01s
181:    learn: 0.4002910    total: 9.66s    remaining: 955ms
182:    learn: 0.4001467    total: 9.71s    remaining: 902ms
183:    learn: 0.4000044    total: 9.75s    remaining: 848ms
184:    learn: 0.3998920    total: 9.8s     remaining: 795ms
185:    learn: 0.3997702    total: 9.84s    remaining: 741ms
186:    learn: 0.3997416    total: 9.89s    remaining: 687ms
187:    learn: 0.3995907    total: 9.93s    remaining: 634ms
188:    learn: 0.3994894    total: 9.99s    remaining: 582ms
189:    learn: 0.3991769    total: 10s      remaining: 529ms
190:    learn: 0.3988512    total: 10.1s    remaining: 476ms
191:    learn: 0.3985693    total: 10.2s    remaining: 423ms
192:    learn: 0.3983150    total: 10.2s    remaining: 370ms
193:    learn: 0.3983003    total: 10.3s    remaining: 318ms
194:    learn: 0.3981616    total: 10.3s    remaining: 265ms
195:    learn: 0.3980666    total: 10.4s    remaining: 212ms
196:    learn: 0.3979445    total: 10.4s    remaining: 159ms
197:    learn: 0.3976734    total: 10.5s    remaining: 106ms
198:    learn: 0.3975654    total: 10.5s    remaining: 53ms
199:    learn: 0.3974317    total: 10.6s    remaining: 0us
```

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0:      learn: 0.6449214      total: 44.3ms    remaining: 8.82s
1:      learn: 0.5958745      total: 87.1ms    remaining: 8.62s
2:      learn: 0.5633792      total: 130ms     remaining: 8.52s
3:      learn: 0.5453512      total: 168ms     remaining: 8.23s
4:      learn: 0.5295029      total: 223ms     remaining: 8.7s
5:      learn: 0.5111150      total: 272ms     remaining: 8.78s
6:      learn: 0.5010767      total: 321ms     remaining: 8.85s
7:      learn: 0.4924241      total: 368ms     remaining: 8.82s
8:      learn: 0.4856528      total: 409ms     remaining: 8.67s
9:      learn: 0.4770600      total: 471ms     remaining: 8.94s
10:     learn: 0.4720852      total: 535ms     remaining: 9.19s
11:     learn: 0.4681182      total: 591ms     remaining: 9.25s
12:     learn: 0.4651131      total: 634ms     remaining: 9.12s
13:     learn: 0.4627749      total: 680ms     remaining: 9.03s
14:     learn: 0.4590619      total: 720ms     remaining: 8.88s
15:     learn: 0.4567775      total: 781ms     remaining: 8.98s
16:     learn: 0.4549689      total: 824ms     remaining: 8.87s
17:     learn: 0.4525534      total: 873ms     remaining: 8.82s
18:     learn: 0.4509816      total: 918ms     remaining: 8.74s
19:     learn: 0.4489558      total: 964ms     remaining: 8.67s
20:     learn: 0.4477700      total: 1.04s     remaining: 8.84s
21:     learn: 0.4462270      total: 1.1s      remaining: 8.87s
22:     learn: 0.4452575      total: 1.14s     remaining: 8.8s
23:     learn: 0.4437779      total: 1.21s     remaining: 8.84s
24:     learn: 0.4424075      total: 1.26s     remaining: 8.81s
25:     learn: 0.4420284      total: 1.31s     remaining: 8.78s
26:     learn: 0.4410984      total: 1.36s     remaining: 8.74s
27:     learn: 0.4406826      total: 1.41s     remaining: 8.67s
28:     learn: 0.4402144      total: 1.48s     remaining: 8.74s
29:     learn: 0.4396527      total: 1.53s     remaining: 8.7s
30:     learn: 0.4393277      total: 1.59s     remaining: 8.65s
31:     learn: 0.4389107      total: 1.64s     remaining: 8.58s
32:     learn: 0.4385499      total: 1.68s     remaining: 8.52s
33:     learn: 0.4380709      total: 1.73s     remaining: 8.46s
34:     learn: 0.4378857      total: 1.79s     remaining: 8.43s
35:     learn: 0.4367098      total: 1.88s     remaining: 8.58s
36:     learn: 0.4357233      total: 1.95s     remaining: 8.61s
37:     learn: 0.4349719      total: 2.03s     remaining: 8.65s
38:     learn: 0.4341846      total: 2.13s     remaining: 8.77s
39:     learn: 0.4338537      total: 2.18s     remaining: 8.72s
40:     learn: 0.4333091      total: 2.24s     remaining: 8.7s
41:     learn: 0.4328467      total: 2.32s     remaining: 8.74s
42:     learn: 0.4324749      total: 2.39s     remaining: 8.71s
43:     learn: 0.4320832      total: 2.49s     remaining: 8.83s
44:     learn: 0.4317547      total: 2.54s     remaining: 8.76s
45:     learn: 0.4312390      total: 2.6s      remaining: 8.71s
46:     learn: 0.4312375      total: 2.62s     remaining: 8.54s
47:     learn: 0.4310636      total: 2.67s     remaining: 8.45s
```

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48:     learn: 0.4307880     total: 2.72s     remaining: 8.37s
49:     learn: 0.4306184     total: 2.76s     remaining: 8.29s
50:     learn: 0.4302262     total: 2.87s     remaining: 8.38s
51:     learn: 0.4299539     total: 2.94s     remaining: 8.37s
52:     learn: 0.4297300     total: 3s        remaining: 8.31s
53:     learn: 0.4295678     total: 3.07s     remaining: 8.29s
54:     learn: 0.4291516     total: 3.16s     remaining: 8.33s
55:     learn: 0.4284419     total: 3.24s     remaining: 8.34s
56:     learn: 0.4281864     total: 3.29s     remaining: 8.26s
57:     learn: 0.4276530     total: 3.34s     remaining: 8.18s
58:     learn: 0.4275821     total: 3.38s     remaining: 8.09s
59:     learn: 0.4271923     total: 3.44s     remaining: 8.02s
60:     learn: 0.4270398     total: 3.48s     remaining: 7.93s
61:     learn: 0.4266391     total: 3.52s     remaining: 7.84s
62:     learn: 0.4264776     total: 3.56s     remaining: 7.75s
63:     learn: 0.4263782     total: 3.61s     remaining: 7.67s
64:     learn: 0.4262131     total: 3.69s     remaining: 7.66s
65:     learn: 0.4259818     total: 3.74s     remaining: 7.59s
66:     learn: 0.4257719     total: 3.8s      remaining: 7.55s
67:     learn: 0.4250399     total: 3.85s     remaining: 7.48s
68:     learn: 0.4248244     total: 3.9s      remaining: 7.41s
69:     learn: 0.4244023     total: 3.97s     remaining: 7.38s
70:     learn: 0.4241521     total: 4.02s     remaining: 7.3s
71:     learn: 0.4238544     total: 4.06s     remaining: 7.22s
72:     learn: 0.4236023     total: 4.11s     remaining: 7.16s
73:     learn: 0.4231399     total: 4.17s     remaining: 7.11s
74:     learn: 0.4226361     total: 4.23s     remaining: 7.04s
75:     learn: 0.4222635     total: 4.29s     remaining: 7.01s
76:     learn: 0.4220814     total: 4.35s     remaining: 6.95s
77:     learn: 0.4218370     total: 4.4s      remaining: 6.88s
78:     learn: 0.4215185     total: 4.46s     remaining: 6.84s
79:     learn: 0.4210784     total: 4.51s     remaining: 6.77s
80:     learn: 0.4207026     total: 4.58s     remaining: 6.72s
81:     learn: 0.4204002     total: 4.62s     remaining: 6.65s
82:     learn: 0.4202201     total: 4.67s     remaining: 6.59s
83:     learn: 0.4200767     total: 4.72s     remaining: 6.52s
84:     learn: 0.4195825     total: 4.78s     remaining: 6.46s
85:     learn: 0.4193727     total: 4.82s     remaining: 6.39s
86:     learn: 0.4190565     total: 4.86s     remaining: 6.32s
87:     learn: 0.4184905     total: 4.91s     remaining: 6.25s
88:     learn: 0.4183668     total: 4.97s     remaining: 6.2s
89:     learn: 0.4179639     total: 5.03s     remaining: 6.14s
90:     learn: 0.4178938     total: 5.07s     remaining: 6.08s
91:     learn: 0.4177715     total: 5.12s     remaining: 6.01s
92:     learn: 0.4175451     total: 5.17s     remaining: 5.95s
93:     learn: 0.4169359     total: 5.22s     remaining: 5.88s
94:     learn: 0.4166659     total: 5.28s     remaining: 5.83s
95:     learn: 0.4162458     total: 5.33s     remaining: 5.77s
```

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96:      learn: 0.4160528      total: 5.39s      remaining: 5.72s
97:      learn: 0.4158605      total: 5.45s      remaining: 5.67s
98:      learn: 0.4154470      total: 5.5s       remaining: 5.61s
99:      learn: 0.4152657      total: 5.54s      remaining: 5.54s
100:     learn: 0.4151733      total: 5.59s      remaining: 5.48s
101:     learn: 0.4150745      total: 5.64s      remaining: 5.42s
102:     learn: 0.4148710      total: 5.68s      remaining: 5.35s
103:     learn: 0.4142679      total: 5.73s      remaining: 5.29s
104:     learn: 0.4141742      total: 5.8s       remaining: 5.25s
105:     learn: 0.4139926      total: 5.85s      remaining: 5.19s
106:     learn: 0.4136801      total: 5.91s      remaining: 5.14s
107:     learn: 0.4131883      total: 5.96s      remaining: 5.07s
108:     learn: 0.4130010      total: 6s         remaining: 5.01s
109:     learn: 0.4122540      total: 6.04s      remaining: 4.94s
110:     learn: 0.4122142      total: 6.1s       remaining: 4.89s
111:     learn: 0.4121232      total: 6.17s      remaining: 4.84s
112:     learn: 0.4119685      total: 6.23s      remaining: 4.79s
113:     learn: 0.4118992      total: 6.29s      remaining: 4.75s
114:     learn: 0.4112739      total: 6.35s      remaining: 4.7s
115:     learn: 0.4104990      total: 6.41s      remaining: 4.64s
116:     learn: 0.4102752      total: 6.46s      remaining: 4.59s
117:     learn: 0.4100302      total: 6.51s      remaining: 4.53s
118:     learn: 0.4097583      total: 6.58s      remaining: 4.48s
119:     learn: 0.4093343      total: 6.65s      remaining: 4.43s
120:     learn: 0.4091140      total: 6.69s      remaining: 4.37s
121:     learn: 0.4090701      total: 6.74s      remaining: 4.31s
122:     learn: 0.4086948      total: 6.8s       remaining: 4.25s
123:     learn: 0.4085386      total: 6.85s      remaining: 4.2s
124:     learn: 0.4084732      total: 6.9s       remaining: 4.14s
125:     learn: 0.4084405      total: 6.96s      remaining: 4.08s
126:     learn: 0.4082420      total: 7.01s      remaining: 4.03s
127:     learn: 0.4077110      total: 7.06s      remaining: 3.97s
128:     learn: 0.4076680      total: 7.1s       remaining: 3.91s
129:     learn: 0.4075379      total: 7.16s      remaining: 3.85s
130:     learn: 0.4074005      total: 7.21s      remaining: 3.8s
131:     learn: 0.4067740      total: 7.27s      remaining: 3.74s
132:     learn: 0.4066637      total: 7.33s      remaining: 3.69s
133:     learn: 0.4064642      total: 7.39s      remaining: 3.64s
134:     learn: 0.4062700      total: 7.46s      remaining: 3.59s
135:     learn: 0.4060358      total: 7.54s      remaining: 3.55s
136:     learn: 0.4058564      total: 7.59s      remaining: 3.49s
137:     learn: 0.4056073      total: 7.65s      remaining: 3.44s
138:     learn: 0.4054046      total: 7.71s      remaining: 3.38s
139:     learn: 0.4052477      total: 7.76s      remaining: 3.33s
140:     learn: 0.4050687      total: 7.81s      remaining: 3.27s
141:     learn: 0.4046400      total: 7.85s      remaining: 3.21s
142:     learn: 0.4044839      total: 7.92s      remaining: 3.16s
143:     learn: 0.4044081      total: 7.96s      remaining: 3.1s
```

```
144:    learn: 0.4042671    total: 8.03s    remaining: 3.04s
145:    learn: 0.4039334    total: 8.08s    remaining: 2.99s
146:    learn: 0.4038209    total: 8.13s    remaining: 2.93s
147:    learn: 0.4037609    total: 8.18s    remaining: 2.87s
148:    learn: 0.4035210    total: 8.23s    remaining: 2.81s
149:    learn: 0.4033713    total: 8.27s    remaining: 2.76s
150:    learn: 0.4028211    total: 8.31s    remaining: 2.7s
151:    learn: 0.4027263    total: 8.37s    remaining: 2.64s
152:    learn: 0.4027094    total: 8.43s    remaining: 2.59s
153:    learn: 0.4025784    total: 8.5s     remaining: 2.54s
154:    learn: 0.4022219    total: 8.54s    remaining: 2.48s
155:    learn: 0.4016321    total: 8.59s    remaining: 2.42s
156:    learn: 0.4014643    total: 8.64s    remaining: 2.37s
157:    learn: 0.4013226    total: 8.68s    remaining: 2.31s
158:    learn: 0.4010691    total: 8.76s    remaining: 2.26s
159:    learn: 0.4009793    total: 8.82s    remaining: 2.21s
160:    learn: 0.4009089    total: 8.87s    remaining: 2.15s
161:    learn: 0.4006851    total: 8.94s    remaining: 2.1s
162:    learn: 0.4004877    total: 9s       remaining: 2.04s
163:    learn: 0.4001920    total: 9.06s    remaining: 1.99s
164:    learn: 0.4000682    total: 9.1s     remaining: 1.93s
165:    learn: 0.3996275    total: 9.15s    remaining: 1.87s
166:    learn: 0.3995130    total: 9.2s     remaining: 1.82s
167:    learn: 0.3994471    total: 9.25s    remaining: 1.76s
168:    learn: 0.3993582    total: 9.29s    remaining: 1.71s
169:    learn: 0.3992650    total: 9.34s    remaining: 1.65s
170:    learn: 0.3991280    total: 9.39s    remaining: 1.59s
171:    learn: 0.3989012    total: 9.44s    remaining: 1.54s
172:    learn: 0.3988914    total: 9.5s     remaining: 1.48s
173:    learn: 0.3985773    total: 9.55s    remaining: 1.43s
174:    learn: 0.3983568    total: 9.59s    remaining: 1.37s
175:    learn: 0.3982838    total: 9.64s    remaining: 1.31s
176:    learn: 0.3982307    total: 9.69s    remaining: 1.26s
177:    learn: 0.3980555    total: 9.75s    remaining: 1.2s
178:    learn: 0.3975477    total: 9.81s    remaining: 1.15s
179:    learn: 0.3973960    total: 9.87s    remaining: 1.1s
180:    learn: 0.3972535    total: 9.93s    remaining: 1.04s
181:    learn: 0.3970623    total: 9.99s    remaining: 988ms
182:    learn: 0.3969895    total: 10.1s    remaining: 934ms
183:    learn: 0.3968275    total: 10.1s    remaining: 880ms
184:    learn: 0.3966361    total: 10.2s    remaining: 824ms
185:    learn: 0.3965070    total: 10.2s    remaining: 768ms
186:    learn: 0.3962008    total: 10.3s    remaining: 713ms
187:    learn: 0.3961629    total: 10.3s    remaining: 659ms
188:    learn: 0.3959989    total: 10.4s    remaining: 604ms
189:    learn: 0.3958417    total: 10.4s    remaining: 550ms
190:    learn: 0.3956189    total: 10.5s    remaining: 495ms
191:    learn: 0.3955701    total: 10.5s    remaining: 440ms
```

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192:     learn: 0.3954299        total: 10.6s    remaining: 385ms
193:     learn: 0.3952874        total: 10.7s    remaining: 329ms
194:     learn: 0.3951498        total: 10.7s    remaining: 275ms
195:     learn: 0.3949063        total: 10.8s    remaining: 220ms
196:     learn: 0.3948058        total: 10.8s    remaining: 165ms
197:     learn: 0.3945958        total: 10.9s    remaining: 110ms
198:     learn: 0.3944203        total: 10.9s    remaining: 54.8ms
199:     learn: 0.3941570        total: 11s      remaining: 0us
```
Mean train f1-score of data (CV) 2 is : 0.8184012186349406
Mean test f1-score of data (CV) 2 is : 0.8039280482111871

Shape of data 3 is :
(27303, 10)
Distribution of 3 is :
Yes   14102
No   13201
Name: TIMELY_RESPONSE, dtype: int64

<IPython.core.display.HTML object>

MetricVisualizer(layout=Layout(align_self='stretch', height='500px'))

Train f1_score [Yes]: for data 3 is : 0.8133381660021748
Train f1_score [No]: for data 3 is : 0.8213941659280954

	precision	recall	f1-score	support
No	0.78	0.86	0.81	924
Yes	0.85	0.77	0.81	988
accuracy			0.81	1912
macro avg	0.81	0.81	0.81	1912
weighted avg	0.81	0.81	0.81	1912
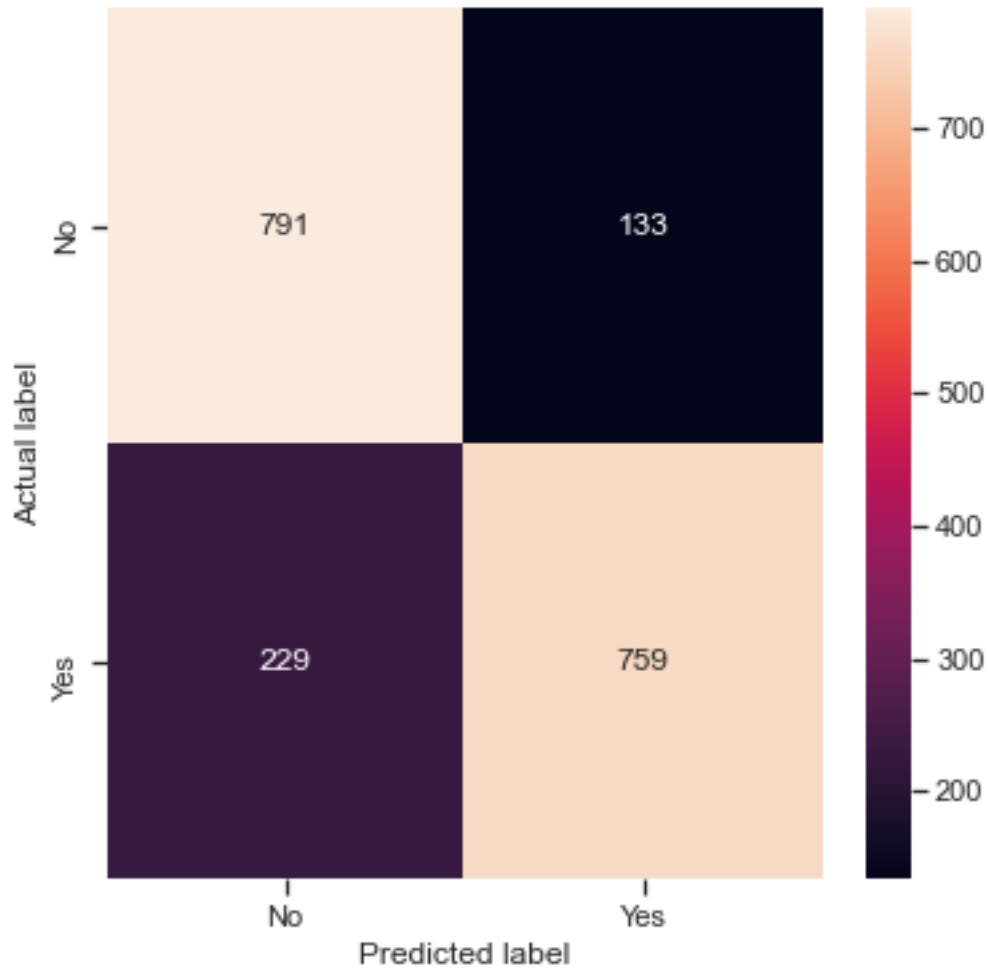
```
Cross validation result for data 3 is :
0:      learn: 0.6349340      total: 51.4ms   remaining: 10.2s
1:      learn: 0.5889256      total: 93.2ms   remaining: 9.23s
2:      learn: 0.5578632      total: 142ms    remaining: 9.31s
3:      learn: 0.5386961      total: 187ms    remaining: 9.15s
4:      learn: 0.5210657      total: 233ms    remaining: 9.09s
5:      learn: 0.5079195      total: 283ms    remaining: 9.14s
6:      learn: 0.4970775      total: 326ms    remaining: 9s
7:      learn: 0.4893117      total: 380ms    remaining: 9.11s
8:      learn: 0.4827154      total: 439ms    remaining: 9.31s
9:      learn: 0.4758882      total: 492ms    remaining: 9.35s
10:     learn: 0.4694553      total: 548ms    remaining: 9.41s
11:     learn: 0.4658166      total: 609ms    remaining: 9.54s
12:     learn: 0.4621717      total: 658ms    remaining: 9.47s
13:     learn: 0.4580309      total: 708ms    remaining: 9.41s
14:     learn: 0.4552852      total: 772ms    remaining: 9.53s
15:     learn: 0.4530481      total: 833ms    remaining: 9.59s
```

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16:      learn: 0.4506918       total: 903ms    remaining: 9.72s
17:      learn: 0.4485930       total: 960ms    remaining: 9.71s
18:      learn: 0.4472976       total: 1s       remaining: 9.56s
19:      learn: 0.4468120       total: 1.03s    remaining: 9.3s
20:      learn: 0.4457847       total: 1.1s     remaining: 9.35s
21:      learn: 0.4447668       total: 1.15s    remaining: 9.28s
22:      learn: 0.4432865       total: 1.2s     remaining: 9.21s
23:      learn: 0.4424598       total: 1.24s    remaining: 9.12s
24:      learn: 0.4417889       total: 1.28s    remaining: 8.98s
25:      learn: 0.4408541       total: 1.34s    remaining: 9s
26:      learn: 0.4406299       total: 1.41s    remaining: 9.02s
27:      learn: 0.4401280       total: 1.46s    remaining: 8.98s
28:      learn: 0.4393177       total: 1.51s    remaining: 8.89s
29:      learn: 0.4387036       total: 1.55s    remaining: 8.8s
30:      learn: 0.4378680       total: 1.6s     remaining: 8.72s
31:      learn: 0.4376252       total: 1.65s    remaining: 8.66s
32:      learn: 0.4372700       total: 1.69s    remaining: 8.54s
33:      learn: 0.4364274       total: 1.75s    remaining: 8.56s
34:      learn: 0.4362076       total: 1.79s    remaining: 8.46s
35:      learn: 0.4357757       total: 1.83s    remaining: 8.36s
36:      learn: 0.4345329       total: 1.89s    remaining: 8.32s
37:      learn: 0.4336045       total: 1.97s    remaining: 8.39s
38:      learn: 0.4332170       total: 2.02s    remaining: 8.32s
39:      learn: 0.4329337       total: 2.08s    remaining: 8.32s
40:      learn: 0.4320357       total: 2.14s    remaining: 8.31s
41:      learn: 0.4318987       total: 2.2s     remaining: 8.28s
42:      learn: 0.4316940       total: 2.25s    remaining: 8.21s
43:      learn: 0.4311408       total: 2.3s     remaining: 8.15s
44:      learn: 0.4303401       total: 2.36s    remaining: 8.14s
45:      learn: 0.4302178       total: 2.43s    remaining: 8.12s
46:      learn: 0.4301011       total: 2.49s    remaining: 8.11s
47:      learn: 0.4299821       total: 2.54s    remaining: 8.04s
48:      learn: 0.4295925       total: 2.58s    remaining: 7.96s
49:      learn: 0.4289663       total: 2.65s    remaining: 7.94s
50:      learn: 0.4287961       total: 2.7s     remaining: 7.9s
51:      learn: 0.4286353       total: 2.75s    remaining: 7.83s
52:      learn: 0.4284464       total: 2.79s    remaining: 7.75s
53:      learn: 0.4282450       total: 2.86s    remaining: 7.72s
54:      learn: 0.4276886       total: 2.92s    remaining: 7.7s
55:      learn: 0.4274613       total: 2.98s    remaining: 7.65s
56:      learn: 0.4272161       total: 3.04s    remaining: 7.63s
57:      learn: 0.4267268       total: 3.1s     remaining: 7.6s
58:      learn: 0.4264298       total: 3.15s    remaining: 7.53s
59:      learn: 0.4256482       total: 3.2s     remaining: 7.47s
60:      learn: 0.4252827       total: 3.26s    remaining: 7.43s
61:      learn: 0.4252813       total: 3.28s    remaining: 7.3s
62:      learn: 0.4252414       total: 3.34s    remaining: 7.26s
63:      learn: 0.4252075       total: 3.39s    remaining: 7.2s
```

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64:     learn: 0.4252070     total: 3.41s     remaining: 7.08s
65:     learn: 0.4250751     total: 3.46s     remaining: 7.04s
66:     learn: 0.4249507     total: 3.52s     remaining: 6.99s
67:     learn: 0.4247805     total: 3.6s      remaining: 7s
68:     learn: 0.4244091     total: 3.67s     remaining: 6.97s
69:     learn: 0.4235907     total: 3.74s     remaining: 6.94s
70:     learn: 0.4233915     total: 3.78s     remaining: 6.87s
71:     learn: 0.4232140     total: 3.83s     remaining: 6.8s
72:     learn: 0.4226699     total: 3.88s     remaining: 6.74s
73:     learn: 0.4224428     total: 3.92s     remaining: 6.68s
74:     learn: 0.4218936     total: 3.97s     remaining: 6.61s
75:     learn: 0.4215942     total: 4.03s     remaining: 6.57s
76:     learn: 0.4211836     total: 4.08s     remaining: 6.52s
77:     learn: 0.4210888     total: 4.13s     remaining: 6.45s
78:     learn: 0.4205866     total: 4.18s     remaining: 6.4s
79:     learn: 0.4203568     total: 4.24s     remaining: 6.35s
80:     learn: 0.4202391     total: 4.28s     remaining: 6.29s
81:     learn: 0.4198955     total: 4.33s     remaining: 6.23s
82:     learn: 0.4194096     total: 4.39s     remaining: 6.19s
83:     learn: 0.4192607     total: 4.44s     remaining: 6.13s
84:     learn: 0.4191902     total: 4.49s     remaining: 6.07s
85:     learn: 0.4190900     total: 4.55s     remaining: 6.03s
86:     learn: 0.4189223     total: 4.61s     remaining: 5.99s
87:     learn: 0.4187982     total: 4.65s     remaining: 5.92s
88:     learn: 0.4187178     total: 4.7s      remaining: 5.86s
89:     learn: 0.4186778     total: 4.74s     remaining: 5.8s
90:     learn: 0.4184748     total: 4.8s      remaining: 5.75s
91:     learn: 0.4183480     total: 4.85s     remaining: 5.69s
92:     learn: 0.4183457     total: 4.87s     remaining: 5.61s
93:     learn: 0.4181175     total: 4.92s     remaining: 5.55s
94:     learn: 0.4179194     total: 4.96s     remaining: 5.49s
95:     learn: 0.4175213     total: 5.02s     remaining: 5.44s
96:     learn: 0.4171327     total: 5.07s     remaining: 5.39s
97:     learn: 0.4165964     total: 5.13s     remaining: 5.34s
98:     learn: 0.4162434     total: 5.19s     remaining: 5.3s
99:     learn: 0.4161814     total: 5.25s     remaining: 5.25s
100:    learn: 0.4160414     total: 5.33s     remaining: 5.22s
101:    learn: 0.4159687     total: 5.38s     remaining: 5.17s
102:    learn: 0.4154553     total: 5.43s     remaining: 5.11s
103:    learn: 0.4153043     total: 5.49s     remaining: 5.07s
104:    learn: 0.4149342     total: 5.54s     remaining: 5.01s
105:    learn: 0.4147100     total: 5.6s      remaining: 4.97s
106:    learn: 0.4143413     total: 5.64s     remaining: 4.91s
107:    learn: 0.4141323     total: 5.69s     remaining: 4.85s
108:    learn: 0.4138058     total: 5.77s     remaining: 4.81s
109:    learn: 0.4136203     total: 5.82s     remaining: 4.76s
110:    learn: 0.4135817     total: 5.87s     remaining: 4.7s
111:    learn: 0.4135272     total: 5.92s     remaining: 4.65s
```

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112:    learn: 0.4129929    total: 5.98s    remaining: 4.61s
113:    learn: 0.4123088    total: 6.05s    remaining: 4.56s
114:    learn: 0.4119521    total: 6.09s    remaining: 4.5s
115:    learn: 0.4117016    total: 6.15s    remaining: 4.45s
116:    learn: 0.4115123    total: 6.2s     remaining: 4.39s
117:    learn: 0.4114532    total: 6.25s    remaining: 4.34s
118:    learn: 0.4108100    total: 6.3s     remaining: 4.29s
119:    learn: 0.4106678    total: 6.37s    remaining: 4.24s
120:    learn: 0.4102989    total: 6.41s    remaining: 4.18s
121:    learn: 0.4102254    total: 6.46s    remaining: 4.13s
122:    learn: 0.4098270    total: 6.52s    remaining: 4.08s
123:    learn: 0.4097964    total: 6.58s    remaining: 4.04s
124:    learn: 0.4097706    total: 6.63s    remaining: 3.98s
125:    learn: 0.4097140    total: 6.67s    remaining: 3.92s
126:    learn: 0.4093992    total: 6.73s    remaining: 3.87s
127:    learn: 0.4092299    total: 6.8s     remaining: 3.83s
128:    learn: 0.4089654    total: 6.86s    remaining: 3.77s
129:    learn: 0.4087666    total: 6.93s    remaining: 3.73s
130:    learn: 0.4084385    total: 6.99s    remaining: 3.68s
131:    learn: 0.4079047    total: 7.05s    remaining: 3.63s
132:    learn: 0.4075278    total: 7.1s     remaining: 3.58s
133:    learn: 0.4074033    total: 7.16s    remaining: 3.53s
134:    learn: 0.4072320    total: 7.23s    remaining: 3.48s
135:    learn: 0.4071589    total: 7.28s    remaining: 3.43s
136:    learn: 0.4070984    total: 7.34s    remaining: 3.37s
137:    learn: 0.4070117    total: 7.39s    remaining: 3.32s
138:    learn: 0.4069011    total: 7.44s    remaining: 3.26s
139:    learn: 0.4066988    total: 7.48s    remaining: 3.21s
140:    learn: 0.4064560    total: 7.53s    remaining: 3.15s
141:    learn: 0.4060974    total: 7.58s    remaining: 3.1s
142:    learn: 0.4056662    total: 7.63s    remaining: 3.04s
143:    learn: 0.4053449    total: 7.7s     remaining: 3s
144:    learn: 0.4052503    total: 7.75s    remaining: 2.94s
145:    learn: 0.4049047    total: 7.81s    remaining: 2.89s
146:    learn: 0.4044410    total: 7.86s    remaining: 2.83s
147:    learn: 0.4044195    total: 7.91s    remaining: 2.78s
148:    learn: 0.4043347    total: 7.96s    remaining: 2.72s
149:    learn: 0.4041385    total: 8.02s    remaining: 2.67s
150:    learn: 0.4040301    total: 8.08s    remaining: 2.62s
151:    learn: 0.4039936    total: 8.13s    remaining: 2.57s
152:    learn: 0.4039493    total: 8.2s     remaining: 2.52s
153:    learn: 0.4039021    total: 8.26s    remaining: 2.47s
154:    learn: 0.4037945    total: 8.31s    remaining: 2.41s
155:    learn: 0.4036567    total: 8.35s    remaining: 2.35s
156:    learn: 0.4034636    total: 8.41s    remaining: 2.3s
157:    learn: 0.4033497    total: 8.46s    remaining: 2.25s
158:    learn: 0.4032375    total: 8.51s    remaining: 2.19s
159:    learn: 0.4032280    total: 8.55s    remaining: 2.14s
```

```
160:    learn: 0.4030696    total: 8.59s    remaining: 2.08s
161:    learn: 0.4030210    total: 8.65s    remaining: 2.03s
162:    learn: 0.4028989    total: 8.72s    remaining: 1.98s
163:    learn: 0.4025592    total: 8.77s    remaining: 1.92s
164:    learn: 0.4023846    total: 8.81s    remaining: 1.87s
165:    learn: 0.4023313    total: 8.85s    remaining: 1.81s
166:    learn: 0.4022091    total: 8.9s     remaining: 1.76s
167:    learn: 0.4018639    total: 8.95s    remaining: 1.71s
168:    learn: 0.4016260    total: 9.02s    remaining: 1.65s
169:    learn: 0.4014690    total: 9.1s     remaining: 1.61s
170:    learn: 0.4013363    total: 9.16s    remaining: 1.55s
171:    learn: 0.4011278    total: 9.23s    remaining: 1.5s
172:    learn: 0.4009866    total: 9.28s    remaining: 1.45s
173:    learn: 0.4007973    total: 9.33s    remaining: 1.39s
174:    learn: 0.4007046    total: 9.38s    remaining: 1.34s
175:    learn: 0.4004525    total: 9.44s    remaining: 1.29s
176:    learn: 0.4002949    total: 9.48s    remaining: 1.23s
177:    learn: 0.4000382    total: 9.57s    remaining: 1.18s
178:    learn: 0.3998086    total: 9.62s    remaining: 1.13s
179:    learn: 0.3995880    total: 9.66s    remaining: 1.07s
180:    learn: 0.3995249    total: 9.71s    remaining: 1.02s
181:    learn: 0.3994273    total: 9.75s    remaining: 964ms
182:    learn: 0.3992238    total: 9.8s     remaining: 910ms
183:    learn: 0.3989283    total: 9.85s    remaining: 856ms
184:    learn: 0.3988295    total: 9.91s    remaining: 804ms
185:    learn: 0.3987170    total: 9.97s    remaining: 751ms
186:    learn: 0.3985465    total: 10s      remaining: 698ms
187:    learn: 0.3984108    total: 10.1s    remaining: 645ms
188:    learn: 0.3983232    total: 10.2s    remaining: 591ms
189:    learn: 0.3982143    total: 10.2s    remaining: 538ms
190:    learn: 0.3980387    total: 10.3s    remaining: 484ms
191:    learn: 0.3977322    total: 10.3s    remaining: 430ms
192:    learn: 0.3976171    total: 10.4s    remaining: 377ms
193:    learn: 0.3974628    total: 10.5s    remaining: 324ms
194:    learn: 0.3973542    total: 10.5s    remaining: 270ms
195:    learn: 0.3971248    total: 10.6s    remaining: 216ms
196:    learn: 0.3970409    total: 10.6s    remaining: 162ms
197:    learn: 0.3967330    total: 10.7s    remaining: 108ms
198:    learn: 0.3964938    total: 10.7s    remaining: 53.9ms
199:    learn: 0.3963236    total: 10.8s    remaining: 0us
0:      learn: 0.6419658    total: 48.9ms   remaining: 9.73s
1:      learn: 0.5992928    total: 96.1ms   remaining: 9.51s
2:      learn: 0.5646936    total: 139ms    remaining: 9.15s
3:      learn: 0.5421644    total: 195ms    remaining: 9.57s
4:      learn: 0.5233957    total: 259ms    remaining: 10.1s
5:      learn: 0.5074837    total: 304ms    remaining: 9.84s
6:      learn: 0.4967386    total: 353ms    remaining: 9.73s
7:      learn: 0.4877760    total: 403ms    remaining: 9.67s
```

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8:       learn: 0.4793676       total: 446ms      remaining: 9.47s
9:       learn: 0.4736103       total: 500ms      remaining: 9.5s
10:      learn: 0.4677521       total: 546ms      remaining: 9.38s
11:      learn: 0.4633915       total: 585ms      remaining: 9.16s
12:      learn: 0.4595855       total: 630ms      remaining: 9.07s
13:      learn: 0.4569829       total: 686ms      remaining: 9.12s
14:      learn: 0.4547578       total: 749ms      remaining: 9.24s
15:      learn: 0.4523864       total: 811ms      remaining: 9.32s
16:      learn: 0.4498787       total: 863ms      remaining: 9.29s
17:      learn: 0.4483112       total: 907ms      remaining: 9.17s
18:      learn: 0.4468377       total: 970ms      remaining: 9.24s
19:      learn: 0.4455752       total: 1.01s      remaining: 9.14s
20:      learn: 0.4441909       total: 1.06s      remaining: 9.03s
21:      learn: 0.4431049       total: 1.11s      remaining: 8.97s
22:      learn: 0.4414508       total: 1.15s      remaining: 8.88s
23:      learn: 0.4400112       total: 1.2s       remaining: 8.8s
24:      learn: 0.4388800       total: 1.24s      remaining: 8.65s
25:      learn: 0.4372601       total: 1.28s      remaining: 8.58s
26:      learn: 0.4362915       total: 1.33s      remaining: 8.5s
27:      learn: 0.4355106       total: 1.38s      remaining: 8.48s
28:      learn: 0.4350766       total: 1.42s      remaining: 8.4s
29:      learn: 0.4342698       total: 1.48s      remaining: 8.36s
30:      learn: 0.4339656       total: 1.54s      remaining: 8.4s
31:      learn: 0.4328011       total: 1.6s       remaining: 8.43s
32:      learn: 0.4326166       total: 1.67s      remaining: 8.45s
33:      learn: 0.4321128       total: 1.75s      remaining: 8.53s
34:      learn: 0.4318327       total: 1.81s      remaining: 8.53s
35:      learn: 0.4314938       total: 1.86s      remaining: 8.48s
36:      learn: 0.4311269       total: 1.92s      remaining: 8.48s
37:      learn: 0.4307493       total: 1.98s      remaining: 8.45s
38:      learn: 0.4299021       total: 2.04s      remaining: 8.45s
39:      learn: 0.4291991       total: 2.11s      remaining: 8.44s
40:      learn: 0.4287650       total: 2.16s      remaining: 8.37s
41:      learn: 0.4284723       total: 2.21s      remaining: 8.3s
42:      learn: 0.4282980       total: 2.26s      remaining: 8.26s
43:      learn: 0.4277766       total: 2.31s      remaining: 8.18s
44:      learn: 0.4274755       total: 2.41s      remaining: 8.3s
45:      learn: 0.4273319       total: 2.47s      remaining: 8.26s
46:      learn: 0.4270201       total: 2.53s      remaining: 8.22s
47:      learn: 0.4268030       total: 2.58s      remaining: 8.16s
48:      learn: 0.4260017       total: 2.63s      remaining: 8.12s
49:      learn: 0.4259195       total: 2.7s       remaining: 8.09s
50:      learn: 0.4257496       total: 2.75s      remaining: 8.05s
51:      learn: 0.4255302       total: 2.83s      remaining: 8.04s
52:      learn: 0.4253957       total: 2.87s      remaining: 7.95s
53:      learn: 0.4248106       total: 2.94s      remaining: 7.94s
54:      learn: 0.4245241       total: 2.98s      remaining: 7.87s
55:      learn: 0.4242901       total: 3.04s      remaining: 7.83s
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 56:      learn: 0.4239306      total: 3.11s      remaining: 7.8s
 57:      learn: 0.4238095      total: 3.16s      remaining: 7.74s
 58:      learn: 0.4236455      total: 3.2s       remaining: 7.65s
 59:      learn: 0.4233867      total: 3.26s      remaining: 7.62s
 60:      learn: 0.4230424      total: 3.32s      remaining: 7.57s
 61:      learn: 0.4228842      total: 3.38s      remaining: 7.53s
 62:      learn: 0.4227284      total: 3.43s      remaining: 7.47s
 63:      learn: 0.4222065      total: 3.48s      remaining: 7.4s
 64:      learn: 0.4220084      total: 3.56s      remaining: 7.39s
 65:      learn: 0.4215537      total: 3.61s      remaining: 7.32s
 66:      learn: 0.4212962      total: 3.67s      remaining: 7.29s
 67:      learn: 0.4209352      total: 3.71s      remaining: 7.21s
 68:      learn: 0.4201639      total: 3.78s      remaining: 7.18s
 69:      learn: 0.4196265      total: 3.85s      remaining: 7.15s
 70:      learn: 0.4193082      total: 3.91s      remaining: 7.1s
 71:      learn: 0.4191422      total: 3.97s      remaining: 7.06s
 72:      learn: 0.4187737      total: 4.06s      remaining: 7.06s
 73:      learn: 0.4181113      total: 4.12s      remaining: 7.02s
 74:      learn: 0.4181030      total: 4.16s      remaining: 6.93s
 75:      learn: 0.4176731      total: 4.23s      remaining: 6.9s
 76:      learn: 0.4175713      total: 4.29s      remaining: 6.85s
 77:      learn: 0.4174088      total: 4.33s      remaining: 6.78s
 78:      learn: 0.4170743      total: 4.4s       remaining: 6.74s
 79:      learn: 0.4167367      total: 4.46s      remaining: 6.69s
 80:      learn: 0.4165543      total: 4.52s      remaining: 6.64s
 81:      learn: 0.4164630      total: 4.58s      remaining: 6.59s
 82:      learn: 0.4163959      total: 4.63s      remaining: 6.53s
 83:      learn: 0.4162806      total: 4.68s      remaining: 6.46s
 84:      learn: 0.4160979      total: 4.72s      remaining: 6.39s
 85:      learn: 0.4154202      total: 4.79s      remaining: 6.36s
 86:      learn: 0.4152565      total: 4.87s      remaining: 6.32s
 87:      learn: 0.4148538      total: 4.92s      remaining: 6.25s
 88:      learn: 0.4147052      total: 4.97s      remaining: 6.21s
 89:      learn: 0.4144185      total: 5.04s      remaining: 6.16s
 90:      learn: 0.4141593      total: 5.11s      remaining: 6.12s
 91:      learn: 0.4140576      total: 5.15s      remaining: 6.04s
 92:      learn: 0.4139065      total: 5.2s       remaining: 5.98s
 93:      learn: 0.4137991      total: 5.26s      remaining: 5.93s
 94:      learn: 0.4135815      total: 5.31s      remaining: 5.87s
 95:      learn: 0.4133302      total: 5.36s      remaining: 5.81s
 96:      learn: 0.4131925      total: 5.41s      remaining: 5.75s
 97:      learn: 0.4127540      total: 5.49s      remaining: 5.72s
 98:      learn: 0.4123231      total: 5.55s      remaining: 5.66s
 99:      learn: 0.4122762      total: 5.6s       remaining: 5.6s
100:      learn: 0.4122271      total: 5.65s      remaining: 5.54s
101:      learn: 0.4119744      total: 5.71s      remaining: 5.48s
102:      learn: 0.4117423      total: 5.76s      remaining: 5.43s
103:      learn: 0.4112498      total: 5.83s      remaining: 5.38s
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104:    learn: 0.4111401    total: 5.88s    remaining: 5.32s
105:    learn: 0.4107263    total: 5.93s    remaining: 5.26s
106:    learn: 0.4103375    total: 5.98s    remaining: 5.2s
107:    learn: 0.4099468    total: 6.03s    remaining: 5.13s
108:    learn: 0.4096873    total: 6.07s    remaining: 5.07s
109:    learn: 0.4095877    total: 6.13s    remaining: 5.02s
110:    learn: 0.4093480    total: 6.19s    remaining: 4.96s
111:    learn: 0.4089281    total: 6.25s    remaining: 4.91s
112:    learn: 0.4087219    total: 6.29s    remaining: 4.85s
113:    learn: 0.4085827    total: 6.34s    remaining: 4.79s
114:    learn: 0.4084195    total: 6.41s    remaining: 4.73s
115:    learn: 0.4081894    total: 6.46s    remaining: 4.68s
116:    learn: 0.4080385    total: 6.51s    remaining: 4.62s
117:    learn: 0.4076620    total: 6.58s    remaining: 4.58s
118:    learn: 0.4072826    total: 6.64s    remaining: 4.52s
119:    learn: 0.4070886    total: 6.69s    remaining: 4.46s
120:    learn: 0.4068609    total: 6.74s    remaining: 4.4s
121:    learn: 0.4067815    total: 6.79s    remaining: 4.34s
122:    learn: 0.4064283    total: 6.84s    remaining: 4.28s
123:    learn: 0.4063003    total: 6.9s     remaining: 4.23s
124:    learn: 0.4062784    total: 6.98s    remaining: 4.19s
125:    learn: 0.4060202    total: 7.03s    remaining: 4.13s
126:    learn: 0.4059933    total: 7.08s    remaining: 4.07s
127:    learn: 0.4057976    total: 7.15s    remaining: 4.02s
128:    learn: 0.4054735    total: 7.22s    remaining: 3.97s
129:    learn: 0.4054610    total: 7.27s    remaining: 3.91s
130:    learn: 0.4051724    total: 7.31s    remaining: 3.85s
131:    learn: 0.4049450    total: 7.36s    remaining: 3.79s
132:    learn: 0.4044560    total: 7.41s    remaining: 3.73s
133:    learn: 0.4044429    total: 7.45s    remaining: 3.67s
134:    learn: 0.4043400    total: 7.5s     remaining: 3.61s
135:    learn: 0.4041221    total: 7.55s    remaining: 3.55s
136:    learn: 0.4039543    total: 7.59s    remaining: 3.49s
137:    learn: 0.4037357    total: 7.67s    remaining: 3.44s
138:    learn: 0.4036546    total: 7.72s    remaining: 3.39s
139:    learn: 0.4035322    total: 7.76s    remaining: 3.33s
140:    learn: 0.4031478    total: 7.82s    remaining: 3.27s
141:    learn: 0.4028064    total: 7.89s    remaining: 3.22s
142:    learn: 0.4026251    total: 7.93s    remaining: 3.16s
143:    learn: 0.4024869    total: 7.98s    remaining: 3.1s
144:    learn: 0.4024788    total: 8.03s    remaining: 3.05s
145:    learn: 0.4024634    total: 8.1s     remaining: 2.99s
146:    learn: 0.4024599    total: 8.14s    remaining: 2.94s
147:    learn: 0.4023520    total: 8.2s     remaining: 2.88s
148:    learn: 0.4020186    total: 8.25s    remaining: 2.83s
149:    learn: 0.4017503    total: 8.3s     remaining: 2.77s
150:    learn: 0.4017271    total: 8.35s    remaining: 2.71s
151:    learn: 0.4015923    total: 8.42s    remaining: 2.66s
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152:    learn: 0.4013477    total: 8.49s    remaining: 2.61s
153:    learn: 0.4011766    total: 8.54s    remaining: 2.55s
154:    learn: 0.4010575    total: 8.59s    remaining: 2.49s
155:    learn: 0.4008920    total: 8.63s    remaining: 2.43s
156:    learn: 0.4005812    total: 8.69s    remaining: 2.38s
157:    learn: 0.4002895    total: 8.73s    remaining: 2.32s
158:    learn: 0.4002258    total: 8.82s    remaining: 2.27s
159:    learn: 0.4001414    total: 8.87s    remaining: 2.22s
160:    learn: 0.3998570    total: 8.92s    remaining: 2.16s
161:    learn: 0.3997215    total: 8.96s    remaining: 2.1s
162:    learn: 0.3995196    total: 9.04s    remaining: 2.05s
163:    learn: 0.3989982    total: 9.09s    remaining: 1.99s
164:    learn: 0.3988729    total: 9.13s    remaining: 1.94s
165:    learn: 0.3987554    total: 9.18s    remaining: 1.88s
166:    learn: 0.3986296    total: 9.22s    remaining: 1.82s
167:    learn: 0.3985847    total: 9.28s    remaining: 1.77s
168:    learn: 0.3984460    total: 9.35s    remaining: 1.71s
169:    learn: 0.3983823    total: 9.42s    remaining: 1.66s
170:    learn: 0.3982216    total: 9.49s    remaining: 1.61s
171:    learn: 0.3980927    total: 9.55s    remaining: 1.55s
172:    learn: 0.3978490    total: 9.6s     remaining: 1.5s
173:    learn: 0.3976871    total: 9.66s    remaining: 1.44s
174:    learn: 0.3973885    total: 9.71s    remaining: 1.39s
175:    learn: 0.3971587    total: 9.78s    remaining: 1.33s
176:    learn: 0.3969082    total: 9.83s    remaining: 1.28s
177:    learn: 0.3968299    total: 9.88s    remaining: 1.22s
178:    learn: 0.3965674    total: 9.93s    remaining: 1.16s
179:    learn: 0.3965622    total: 9.99s    remaining: 1.11s
180:    learn: 0.3965463    total: 10.1s    remaining: 1.05s
181:    learn: 0.3962454    total: 10.1s    remaining: 1000ms
182:    learn: 0.3961787    total: 10.2s    remaining: 944ms
183:    learn: 0.3961120    total: 10.2s    remaining: 888ms
184:    learn: 0.3960785    total: 10.3s    remaining: 834ms
185:    learn: 0.3960062    total: 10.3s    remaining: 778ms
186:    learn: 0.3959007    total: 10.4s    remaining: 721ms
187:    learn: 0.3958216    total: 10.4s    remaining: 666ms
188:    learn: 0.3956697    total: 10.5s    remaining: 611ms
189:    learn: 0.3953570    total: 10.5s    remaining: 555ms
190:    learn: 0.3952488    total: 10.6s    remaining: 500ms
191:    learn: 0.3949851    total: 10.7s    remaining: 444ms
192:    learn: 0.3949744    total: 10.7s    remaining: 389ms
193:    learn: 0.3947821    total: 10.8s    remaining: 333ms
194:    learn: 0.3947359    total: 10.8s    remaining: 278ms
195:    learn: 0.3945530    total: 10.9s    remaining: 222ms
196:    learn: 0.3944481    total: 11s      remaining: 167ms
197:    learn: 0.3942910    total: 11s      remaining: 111ms
198:    learn: 0.3941381    total: 11.1s    remaining: 55.7ms
199:    learn: 0.3940446    total: 11.2s    remaining: 0us
```

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0:      learn: 0.6294451      total: 60.1ms    remaining: 12s
1:      learn: 0.5953803      total: 115ms     remaining: 11.3s
2:      learn: 0.5594532      total: 155ms     remaining: 10.2s
3:      learn: 0.5395711      total: 199ms     remaining: 9.76s
4:      learn: 0.5241883      total: 258ms     remaining: 10.1s
5:      learn: 0.5119167      total: 315ms     remaining: 10.2s
6:      learn: 0.5017091      total: 350ms     remaining: 9.64s
7:      learn: 0.4910354      total: 390ms     remaining: 9.37s
8:      learn: 0.4833679      total: 437ms     remaining: 9.26s
9:      learn: 0.4785356      total: 479ms     remaining: 9.11s
10:     learn: 0.4731982      total: 520ms     remaining: 8.94s
11:     learn: 0.4690359      total: 566ms     remaining: 8.86s
12:     learn: 0.4658295      total: 624ms     remaining: 8.98s
13:     learn: 0.4623707      total: 671ms     remaining: 8.92s
14:     learn: 0.4594252      total: 708ms     remaining: 8.74s
15:     learn: 0.4573730      total: 774ms     remaining: 8.9s
16:     learn: 0.4542460      total: 818ms     remaining: 8.8s
17:     learn: 0.4526957      total: 861ms     remaining: 8.71s
18:     learn: 0.4509485      total: 908ms     remaining: 8.65s
19:     learn: 0.4492348      total: 950ms     remaining: 8.55s
20:     learn: 0.4483171      total: 990ms     remaining: 8.44s
21:     learn: 0.4472578      total: 1.03s     remaining: 8.36s
22:     learn: 0.4459975      total: 1.09s     remaining: 8.39s
23:     learn: 0.4448548      total: 1.14s     remaining: 8.38s
24:     learn: 0.4442160      total: 1.19s     remaining: 8.32s
25:     learn: 0.4429859      total: 1.24s     remaining: 8.31s
26:     learn: 0.4416533      total: 1.29s     remaining: 8.26s
27:     learn: 0.4409149      total: 1.35s     remaining: 8.3s
28:     learn: 0.4399822      total: 1.4s      remaining: 8.28s
29:     learn: 0.4393023      total: 1.45s     remaining: 8.23s
30:     learn: 0.4389860      total: 1.5s      remaining: 8.21s
31:     learn: 0.4381196      total: 1.57s     remaining: 8.22s
32:     learn: 0.4371543      total: 1.61s     remaining: 8.17s
33:     learn: 0.4368168      total: 1.65s     remaining: 8.08s
34:     learn: 0.4360004      total: 1.71s     remaining: 8.06s
35:     learn: 0.4356054      total: 1.76s     remaining: 8.01s
36:     learn: 0.4349256      total: 1.82s     remaining: 8.03s
37:     learn: 0.4346508      total: 1.87s     remaining: 7.98s
38:     learn: 0.4343037      total: 1.96s     remaining: 8.07s
39:     learn: 0.4340827      total: 2s        remaining: 8.01s
40:     learn: 0.4338693      total: 2.05s     remaining: 7.94s
41:     learn: 0.4337061      total: 2.12s     remaining: 7.99s
42:     learn: 0.4334264      total: 2.19s     remaining: 7.98s
43:     learn: 0.4330865      total: 2.26s     remaining: 8.01s
44:     learn: 0.4327752      total: 2.32s     remaining: 7.98s
45:     learn: 0.4326266      total: 2.38s     remaining: 7.98s
46:     learn: 0.4323309      total: 2.43s     remaining: 7.9s
47:     learn: 0.4322454      total: 2.48s     remaining: 7.84s
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48:     learn: 0.4319994     total: 2.52s     remaining: 7.77s
49:     learn: 0.4316388     total: 2.56s     remaining: 7.68s
50:     learn: 0.4315097     total: 2.62s     remaining: 7.65s
51:     learn: 0.4309983     total: 2.67s     remaining: 7.61s
52:     learn: 0.4301832     total: 2.74s     remaining: 7.61s
53:     learn: 0.4299346     total: 2.79s     remaining: 7.55s
54:     learn: 0.4295852     total: 2.83s     remaining: 7.47s
55:     learn: 0.4292424     total: 2.89s     remaining: 7.43s
56:     learn: 0.4283501     total: 2.94s     remaining: 7.38s
57:     learn: 0.4280244     total: 2.98s     remaining: 7.31s
58:     learn: 0.4276290     total: 3.07s     remaining: 7.34s
59:     learn: 0.4273963     total: 3.12s     remaining: 7.28s
60:     learn: 0.4273054     total: 3.19s     remaining: 7.26s
61:     learn: 0.4268917     total: 3.24s     remaining: 7.22s
62:     learn: 0.4266333     total: 3.33s     remaining: 7.23s
63:     learn: 0.4264581     total: 3.4s      remaining: 7.22s
64:     learn: 0.4261866     total: 3.44s     remaining: 7.15s
65:     learn: 0.4260076     total: 3.49s     remaining: 7.09s
66:     learn: 0.4258720     total: 3.56s     remaining: 7.06s
67:     learn: 0.4255248     total: 3.62s     remaining: 7.03s
68:     learn: 0.4253983     total: 3.68s     remaining: 6.99s
69:     learn: 0.4252762     total: 3.77s     remaining: 7.01s
70:     learn: 0.4251045     total: 3.9s      remaining: 7.08s
71:     learn: 0.4249699     total: 3.95s     remaining: 7.01s
72:     learn: 0.4246531     total: 4s        remaining: 6.96s
73:     learn: 0.4244440     total: 4.04s     remaining: 6.88s
74:     learn: 0.4242427     total: 4.08s     remaining: 6.81s
75:     learn: 0.4240333     total: 4.14s     remaining: 6.76s
76:     learn: 0.4237359     total: 4.19s     remaining: 6.7s
77:     learn: 0.4235154     total: 4.24s     remaining: 6.64s
78:     learn: 0.4233411     total: 4.29s     remaining: 6.57s
79:     learn: 0.4230151     total: 4.34s     remaining: 6.51s
80:     learn: 0.4228657     total: 4.4s      remaining: 6.47s
81:     learn: 0.4227578     total: 4.46s     remaining: 6.42s
82:     learn: 0.4223901     total: 4.52s     remaining: 6.37s
83:     learn: 0.4222134     total: 4.57s     remaining: 6.32s
84:     learn: 0.4220944     total: 4.63s     remaining: 6.27s
85:     learn: 0.4220114     total: 4.68s     remaining: 6.2s
86:     learn: 0.4219026     total: 4.72s     remaining: 6.13s
87:     learn: 0.4217294     total: 4.78s     remaining: 6.08s
88:     learn: 0.4216320     total: 4.83s     remaining: 6.03s
89:     learn: 0.4215089     total: 4.91s     remaining: 6s
90:     learn: 0.4213339     total: 4.97s     remaining: 5.96s
91:     learn: 0.4211728     total: 5.04s     remaining: 5.91s
92:     learn: 0.4209662     total: 5.09s     remaining: 5.86s
93:     learn: 0.4204427     total: 5.16s     remaining: 5.82s
94:     learn: 0.4203222     total: 5.21s     remaining: 5.76s
95:     learn: 0.4202048     total: 5.27s     remaining: 5.71s
```

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96:     learn: 0.4200360     total: 5.32s    remaining: 5.65s
97:     learn: 0.4199669     total: 5.37s    remaining: 5.59s
98:     learn: 0.4194623     total: 5.42s    remaining: 5.53s
99:     learn: 0.4193188     total: 5.47s    remaining: 5.47s
100:    learn: 0.4189912     total: 5.55s    remaining: 5.44s
101:    learn: 0.4184542     total: 5.61s    remaining: 5.39s
102:    learn: 0.4181746     total: 5.68s    remaining: 5.35s
103:    learn: 0.4176445     total: 5.74s    remaining: 5.3s
104:    learn: 0.4170178     total: 5.79s    remaining: 5.24s
105:    learn: 0.4168351     total: 5.85s    remaining: 5.19s
106:    learn: 0.4165894     total: 5.9s     remaining: 5.13s
107:    learn: 0.4156407     total: 5.95s    remaining: 5.06s
108:    learn: 0.4156120     total: 6.01s    remaining: 5.02s
109:    learn: 0.4155035     total: 6.07s    remaining: 4.96s
110:    learn: 0.4152648     total: 6.13s    remaining: 4.92s
111:    learn: 0.4150949     total: 6.21s    remaining: 4.88s
112:    learn: 0.4147297     total: 6.26s    remaining: 4.82s
113:    learn: 0.4143614     total: 6.31s    remaining: 4.76s
114:    learn: 0.4143608     total: 6.34s    remaining: 4.68s
115:    learn: 0.4141865     total: 6.38s    remaining: 4.62s
116:    learn: 0.4135153     total: 6.43s    remaining: 4.56s
117:    learn: 0.4135152     total: 6.49s    remaining: 4.51s
118:    learn: 0.4132873     total: 6.55s    remaining: 4.46s
119:    learn: 0.4130888     total: 6.61s    remaining: 4.4s
120:    learn: 0.4130285     total: 6.65s    remaining: 4.34s
121:    learn: 0.4124380     total: 6.71s    remaining: 4.29s
122:    learn: 0.4120448     total: 6.8s     remaining: 4.25s
123:    learn: 0.4116679     total: 6.86s    remaining: 4.21s
124:    learn: 0.4112395     total: 6.92s    remaining: 4.16s
125:    learn: 0.4109187     total: 6.97s    remaining: 4.1s
126:    learn: 0.4107081     total: 7.04s    remaining: 4.04s
127:    learn: 0.4105688     total: 7.09s    remaining: 3.99s
128:    learn: 0.4102153     total: 7.14s    remaining: 3.93s
129:    learn: 0.4096418     total: 7.19s    remaining: 3.87s
130:    learn: 0.4095140     total: 7.25s    remaining: 3.82s
131:    learn: 0.4091772     total: 7.31s    remaining: 3.77s
132:    learn: 0.4089445     total: 7.38s    remaining: 3.72s
133:    learn: 0.4088565     total: 7.43s    remaining: 3.66s
134:    learn: 0.4087073     total: 7.49s    remaining: 3.61s
135:    learn: 0.4083972     total: 7.55s    remaining: 3.55s
136:    learn: 0.4081680     total: 7.6s     remaining: 3.5s
137:    learn: 0.4080246     total: 7.67s    remaining: 3.44s
138:    learn: 0.4078067     total: 7.74s    remaining: 3.4s
139:    learn: 0.4076867     total: 7.81s    remaining: 3.35s
140:    learn: 0.4076634     total: 7.86s    remaining: 3.29s
141:    learn: 0.4074505     total: 7.91s    remaining: 3.23s
142:    learn: 0.4070989     total: 8s       remaining: 3.19s
143:    learn: 0.4070390     total: 8.04s    remaining: 3.13s
```

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144:    learn: 0.4068122    total: 8.1s     remaining: 3.07s
145:    learn: 0.4066032    total: 8.15s    remaining: 3.02s
146:    learn: 0.4063100    total: 8.21s    remaining: 2.96s
147:    learn: 0.4061687    total: 8.27s    remaining: 2.9s
148:    learn: 0.4057148    total: 8.34s    remaining: 2.85s
149:    learn: 0.4056083    total: 8.41s    remaining: 2.8s
150:    learn: 0.4055388    total: 8.46s    remaining: 2.75s
151:    learn: 0.4052706    total: 8.51s    remaining: 2.69s
152:    learn: 0.4050844    total: 8.57s    remaining: 2.63s
153:    learn: 0.4048381    total: 8.65s    remaining: 2.58s
154:    learn: 0.4047220    total: 8.74s    remaining: 2.54s
155:    learn: 0.4044892    total: 8.79s    remaining: 2.48s
156:    learn: 0.4042102    total: 8.85s    remaining: 2.42s
157:    learn: 0.4040888    total: 8.9s     remaining: 2.37s
158:    learn: 0.4038444    total: 8.95s    remaining: 2.31s
159:    learn: 0.4038307    total: 9s       remaining: 2.25s
160:    learn: 0.4035622    total: 9.07s    remaining: 2.2s
161:    learn: 0.4033446    total: 9.13s    remaining: 2.14s
162:    learn: 0.4032144    total: 9.18s    remaining: 2.08s
163:    learn: 0.4030415    total: 9.23s    remaining: 2.02s
164:    learn: 0.4028530    total: 9.31s    remaining: 1.97s
165:    learn: 0.4026834    total: 9.36s    remaining: 1.92s
166:    learn: 0.4025324    total: 9.41s    remaining: 1.86s
167:    learn: 0.4020479    total: 9.47s    remaining: 1.8s
168:    learn: 0.4019873    total: 9.55s    remaining: 1.75s
169:    learn: 0.4018305    total: 9.59s    remaining: 1.69s
170:    learn: 0.4017698    total: 9.63s    remaining: 1.63s
171:    learn: 0.4016686    total: 9.69s    remaining: 1.58s
172:    learn: 0.4016213    total: 9.73s    remaining: 1.52s
173:    learn: 0.4015374    total: 9.78s    remaining: 1.46s
174:    learn: 0.4013237    total: 9.83s    remaining: 1.4s
175:    learn: 0.4012226    total: 9.88s    remaining: 1.35s
176:    learn: 0.4011394    total: 9.92s    remaining: 1.29s
177:    learn: 0.4008306    total: 9.97s    remaining: 1.23s
178:    learn: 0.4005485    total: 10s      remaining: 1.18s
179:    learn: 0.4003854    total: 10.1s    remaining: 1.12s
180:    learn: 0.4001480    total: 10.2s    remaining: 1.07s
181:    learn: 0.3999357    total: 10.2s    remaining: 1.01s
182:    learn: 0.3998047    total: 10.3s    remaining: 956ms
183:    learn: 0.3997493    total: 10.4s    remaining: 901ms
184:    learn: 0.3996540    total: 10.4s    remaining: 844ms
185:    learn: 0.3996156    total: 10.5s    remaining: 788ms
186:    learn: 0.3992855    total: 10.5s    remaining: 732ms
187:    learn: 0.3991739    total: 10.6s    remaining: 677ms
188:    learn: 0.3990003    total: 10.7s    remaining: 620ms
189:    learn: 0.3989517    total: 10.7s    remaining: 563ms
190:    learn: 0.3987078    total: 10.7s    remaining: 507ms
191:    learn: 0.3985592    total: 10.8s    remaining: 451ms
```

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192:    learn: 0.3982828        total: 10.9s    remaining: 394ms
193:    learn: 0.3981920        total: 10.9s    remaining: 338ms
194:    learn: 0.3980476        total: 11s      remaining: 281ms
195:    learn: 0.3979107        total: 11s      remaining: 225ms
196:    learn: 0.3977168        total: 11.1s    remaining: 169ms
197:    learn: 0.3974750        total: 11.1s    remaining: 112ms
198:    learn: 0.3973562        total: 11.2s    remaining: 56.2ms
199:    learn: 0.3972103        total: 11.2s    remaining: 0us
Mean train f1-score of data (CV) 3 is : 0.82047290997779
Mean test f1-score of data (CV) 3 is : 0.8053304241754461
```

```
Shape of data 4 is :
(27303, 10)
Distribution of 4 is :
Yes    14102
No     13201
Name: TIMELY_RESPONSE, dtype: int64

<IPython.core.display.HTML object>

MetricVisualizer(layout=Layout(align_self='stretch', height='500px'))

Train f1_score [Yes]: for data 4 is : 0.8125200384738699
Train f1_score [No]: for data 4 is : 0.818892760356175
```

	precision	recall	f1-score	support
No	0.77	0.86	0.81	924
Yes	0.85	0.76	0.80	988
accuracy			0.81	1912
macro avg	0.81	0.81	0.81	1912
weighted avg	0.81	0.81	0.81	1912
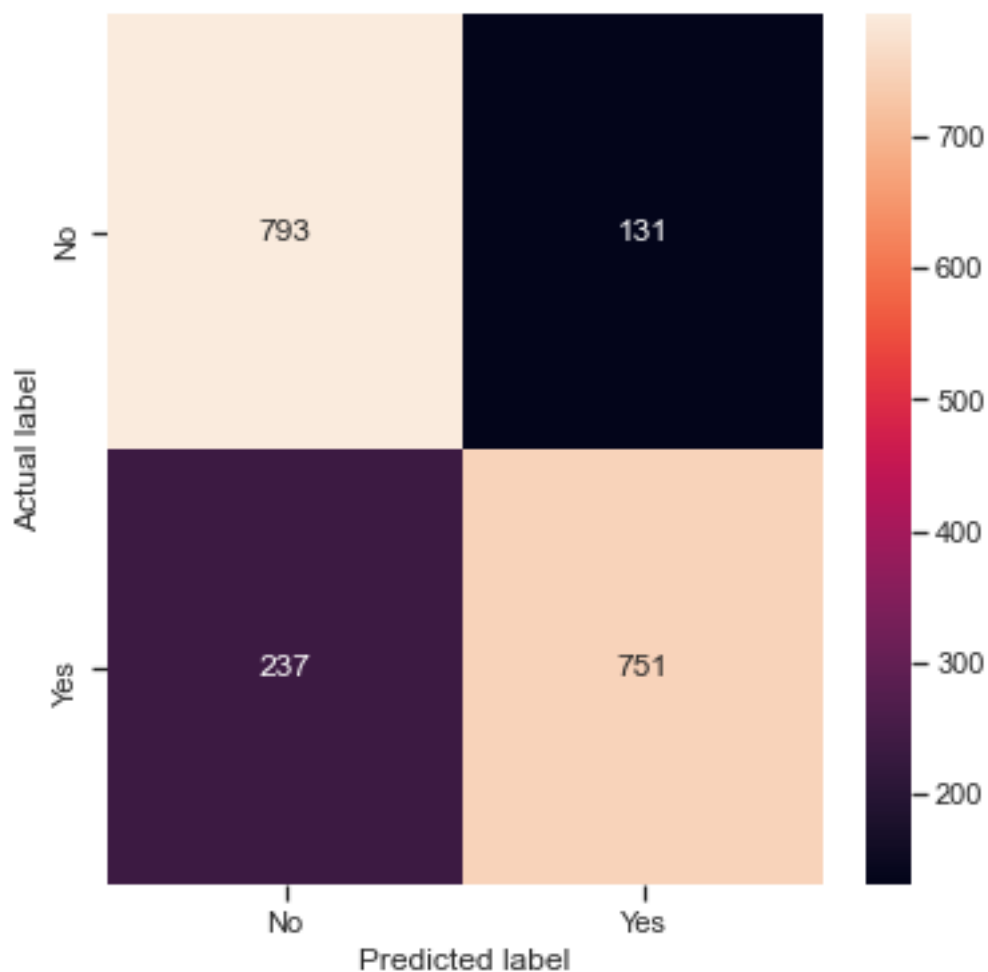
Cross validation result for data 4 is :

```
0:      learn: 0.6356139      total: 46.9ms    remaining: 9.34s
1:      learn: 0.5916431      total: 91.4ms    remaining: 9.05s
2:      learn: 0.5670811      total: 136ms     remaining: 8.95s
3:      learn: 0.5451739      total: 180ms     remaining: 8.8s
4:      learn: 0.5268373      total: 234ms     remaining: 9.14s
5:      learn: 0.5144146      total: 292ms     remaining: 9.43s
6:      learn: 0.5034046      total: 340ms     remaining: 9.37s
7:      learn: 0.4947482      total: 405ms     remaining: 9.73s
8:      learn: 0.4865873      total: 508ms     remaining: 10.8s
9:      learn: 0.4795191      total: 573ms     remaining: 10.9s
10:     learn: 0.4746253      total: 649ms     remaining: 11.2s
11:     learn: 0.4699435      total: 714ms     remaining: 11.2s
12:     learn: 0.4663244      total: 758ms     remaining: 10.9s
13:     learn: 0.4643010      total: 791ms     remaining: 10.5s
14:     learn: 0.4615140      total: 837ms     remaining: 10.3s
15:     learn: 0.4596991      total: 890ms     remaining: 10.2s
```

```
16:    learn: 0.4583364    total: 941ms    remaining: 10.1s
17:    learn: 0.4559381    total: 1.01s    remaining: 10.2s
18:    learn: 0.4538298    total: 1.06s    remaining: 10.1s
19:    learn: 0.4521883    total: 1.11s    remaining: 9.96s
20:    learn: 0.4509424    total: 1.17s    remaining: 10s
21:    learn: 0.4494583    total: 1.22s    remaining: 9.87s
22:    learn: 0.4481041    total: 1.28s    remaining: 9.87s
23:    learn: 0.4473729    total: 1.33s    remaining: 9.73s
24:    learn: 0.4470449    total: 1.38s    remaining: 9.64s
25:    learn: 0.4460142    total: 1.42s    remaining: 9.53s
26:    learn: 0.4452288    total: 1.47s    remaining: 9.4s
27:    learn: 0.4446200    total: 1.52s    remaining: 9.34s
28:    learn: 0.4441926    total: 1.57s    remaining: 9.24s
29:    learn: 0.4437091    total: 1.61s    remaining: 9.12s
30:    learn: 0.4433974    total: 1.67s    remaining: 9.12s
31:    learn: 0.4424990    total: 1.73s    remaining: 9.06s
32:    learn: 0.4418086    total: 1.78s    remaining: 9.03s
33:    learn: 0.4410786    total: 1.84s    remaining: 9.01s
34:    learn: 0.4407280    total: 1.9s     remaining: 8.95s
35:    learn: 0.4401435    total: 1.95s    remaining: 8.86s
36:    learn: 0.4399595    total: 2.01s    remaining: 8.85s
37:    learn: 0.4394216    total: 2.07s    remaining: 8.84s
38:    learn: 0.4388743    total: 2.13s    remaining: 8.8s
39:    learn: 0.4387589    total: 2.2s     remaining: 8.79s
40:    learn: 0.4376010    total: 2.28s    remaining: 8.84s
41:    learn: 0.4372359    total: 2.33s    remaining: 8.79s
42:    learn: 0.4366562    total: 2.38s    remaining: 8.7s
43:    learn: 0.4364640    total: 2.43s    remaining: 8.61s
44:    learn: 0.4362134    total: 2.48s    remaining: 8.54s
45:    learn: 0.4354817    total: 2.55s    remaining: 8.54s
46:    learn: 0.4353344    total: 2.6s     remaining: 8.46s
47:    learn: 0.4350751    total: 2.66s    remaining: 8.41s
48:    learn: 0.4346963    total: 2.7s     remaining: 8.33s
49:    learn: 0.4345191    total: 2.76s    remaining: 8.29s
50:    learn: 0.4340366    total: 2.81s    remaining: 8.21s
51:    learn: 0.4337378    total: 2.85s    remaining: 8.11s
52:    learn: 0.4331146    total: 2.91s    remaining: 8.08s
53:    learn: 0.4325653    total: 2.97s    remaining: 8.04s
54:    learn: 0.4319409    total: 3.03s    remaining: 8s
55:    learn: 0.4317966    total: 3.11s    remaining: 7.99s
56:    learn: 0.4315396    total: 3.16s    remaining: 7.93s
57:    learn: 0.4311184    total: 3.23s    remaining: 7.9s
58:    learn: 0.4309938    total: 3.28s    remaining: 7.85s
59:    learn: 0.4307607    total: 3.33s    remaining: 7.78s
60:    learn: 0.4306216    total: 3.39s    remaining: 7.72s
61:    learn: 0.4303740    total: 3.43s    remaining: 7.64s
62:    learn: 0.4292660    total: 3.48s    remaining: 7.58s
63:    learn: 0.4289930    total: 3.52s    remaining: 7.49s
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64:      learn: 0.4288075      total: 3.57s      remaining: 7.42s
65:      learn: 0.4280884      total: 3.62s      remaining: 7.36s
66:      learn: 0.4279781      total: 3.67s      remaining: 7.29s
67:      learn: 0.4272453      total: 3.72s      remaining: 7.22s
68:      learn: 0.4272397      total: 3.75s      remaining: 7.12s
69:      learn: 0.4266626      total: 3.8s       remaining: 7.06s
70:      learn: 0.4263340      total: 3.84s      remaining: 6.98s
71:      learn: 0.4263324      total: 3.86s      remaining: 6.86s
72:      learn: 0.4258794      total: 3.91s      remaining: 6.8s
73:      learn: 0.4257068      total: 3.95s      remaining: 6.72s
74:      learn: 0.4255234      total: 4.01s      remaining: 6.68s
75:      learn: 0.4253255      total: 4.07s      remaining: 6.64s
76:      learn: 0.4251196      total: 4.12s      remaining: 6.58s
77:      learn: 0.4249077      total: 4.16s      remaining: 6.51s
78:      learn: 0.4245584      total: 4.23s      remaining: 6.48s
79:      learn: 0.4243425      total: 4.28s      remaining: 6.41s
80:      learn: 0.4240810      total: 4.34s      remaining: 6.37s
81:      learn: 0.4239504      total: 4.38s      remaining: 6.3s
82:      learn: 0.4237022      total: 4.43s      remaining: 6.25s
83:      learn: 0.4234703      total: 4.48s      remaining: 6.18s
84:      learn: 0.4232824      total: 4.52s      remaining: 6.12s
85:      learn: 0.4230636      total: 4.57s      remaining: 6.06s
86:      learn: 0.4229187      total: 4.62s      remaining: 6s
87:      learn: 0.4228462      total: 4.66s      remaining: 5.93s
88:      learn: 0.4227109      total: 4.72s      remaining: 5.89s
89:      learn: 0.4221825      total: 4.79s      remaining: 5.85s
90:      learn: 0.4220396      total: 4.85s      remaining: 5.8s
91:      learn: 0.4219441      total: 4.91s      remaining: 5.77s
92:      learn: 0.4217724      total: 4.97s      remaining: 5.72s
93:      learn: 0.4216126      total: 5.03s      remaining: 5.67s
94:      learn: 0.4209781      total: 5.08s      remaining: 5.62s
95:      learn: 0.4208514      total: 5.14s      remaining: 5.57s
96:      learn: 0.4206430      total: 5.23s      remaining: 5.56s
97:      learn: 0.4202912      total: 5.28s      remaining: 5.5s
98:      learn: 0.4200564      total: 5.33s      remaining: 5.43s
99:      learn: 0.4199109      total: 5.37s      remaining: 5.37s
100:     learn: 0.4192106      total: 5.47s      remaining: 5.36s
101:     learn: 0.4188186      total: 5.52s      remaining: 5.3s
102:     learn: 0.4186612      total: 5.56s      remaining: 5.23s
103:     learn: 0.4182620      total: 5.62s      remaining: 5.18s
104:     learn: 0.4180429      total: 5.67s      remaining: 5.13s
105:     learn: 0.4178292      total: 5.72s      remaining: 5.08s
106:     learn: 0.4175226      total: 5.77s      remaining: 5.02s
107:     learn: 0.4172952      total: 5.83s      remaining: 4.97s
108:     learn: 0.4169692      total: 5.88s      remaining: 4.91s
109:     learn: 0.4166354      total: 5.93s      remaining: 4.85s
110:     learn: 0.4160933      total: 6s        remaining: 4.81s
111:     learn: 0.4158219      total: 6.06s      remaining: 4.76s
```

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112:    learn: 0.4153748    total: 6.14s    remaining: 4.72s
113:    learn: 0.4152632    total: 6.21s    remaining: 4.68s
114:    learn: 0.4150955    total: 6.27s    remaining: 4.63s
115:    learn: 0.4146656    total: 6.33s    remaining: 4.58s
116:    learn: 0.4145004    total: 6.39s    remaining: 4.53s
117:    learn: 0.4141541    total: 6.45s    remaining: 4.48s
118:    learn: 0.4141146    total: 6.51s    remaining: 4.43s
119:    learn: 0.4137837    total: 6.55s    remaining: 4.37s
120:    learn: 0.4135981    total: 6.61s    remaining: 4.31s
121:    learn: 0.4134869    total: 6.67s    remaining: 4.27s
122:    learn: 0.4133742    total: 6.73s    remaining: 4.21s
123:    learn: 0.4130317    total: 6.78s    remaining: 4.16s
124:    learn: 0.4127731    total: 6.84s    remaining: 4.11s
125:    learn: 0.4123617    total: 6.89s    remaining: 4.05s
126:    learn: 0.4119447    total: 6.96s    remaining: 4s
127:    learn: 0.4117503    total: 7.02s    remaining: 3.95s
128:    learn: 0.4115223    total: 7.06s    remaining: 3.89s
129:    learn: 0.4114325    total: 7.11s    remaining: 3.83s
130:    learn: 0.4113953    total: 7.16s    remaining: 3.77s
131:    learn: 0.4110987    total: 7.23s    remaining: 3.72s
132:    learn: 0.4107728    total: 7.28s    remaining: 3.67s
133:    learn: 0.4106308    total: 7.32s    remaining: 3.61s
134:    learn: 0.4105035    total: 7.38s    remaining: 3.55s
135:    learn: 0.4104236    total: 7.44s    remaining: 3.5s
136:    learn: 0.4097995    total: 7.49s    remaining: 3.44s
137:    learn: 0.4095811    total: 7.54s    remaining: 3.39s
138:    learn: 0.4095399    total: 7.58s    remaining: 3.33s
139:    learn: 0.4094423    total: 7.62s    remaining: 3.26s
140:    learn: 0.4093510    total: 7.66s    remaining: 3.2s
141:    learn: 0.4092365    total: 7.7s     remaining: 3.15s
142:    learn: 0.4090613    total: 7.76s    remaining: 3.09s
143:    learn: 0.4087601    total: 7.8s     remaining: 3.03s
144:    learn: 0.4085640    total: 7.87s    remaining: 2.98s
145:    learn: 0.4084332    total: 7.91s    remaining: 2.93s
146:    learn: 0.4078955    total: 7.97s    remaining: 2.87s
147:    learn: 0.4078256    total: 8.03s    remaining: 2.82s
148:    learn: 0.4077312    total: 8.07s    remaining: 2.76s
149:    learn: 0.4073994    total: 8.12s    remaining: 2.71s
150:    learn: 0.4073220    total: 8.16s    remaining: 2.65s
151:    learn: 0.4069566    total: 8.22s    remaining: 2.6s
152:    learn: 0.4068284    total: 8.28s    remaining: 2.54s
153:    learn: 0.4067248    total: 8.33s    remaining: 2.49s
154:    learn: 0.4063905    total: 8.4s     remaining: 2.44s
155:    learn: 0.4059308    total: 8.46s    remaining: 2.38s
156:    learn: 0.4057040    total: 8.52s    remaining: 2.33s
157:    learn: 0.4056434    total: 8.56s    remaining: 2.28s
158:    learn: 0.4056260    total: 8.6s     remaining: 2.22s
159:    learn: 0.4055293    total: 8.66s    remaining: 2.16s
```

```
160:     learn: 0.4051665      total: 8.72s    remaining: 2.11s
161:     learn: 0.4049551      total: 8.79s    remaining: 2.06s
162:     learn: 0.4047083      total: 8.85s    remaining: 2.01s
163:     learn: 0.4042081      total: 8.89s    remaining: 1.95s
164:     learn: 0.4041506      total: 8.94s    remaining: 1.9s
165:     learn: 0.4041013      total: 8.98s    remaining: 1.84s
166:     learn: 0.4039571      total: 9.03s    remaining: 1.78s
167:     learn: 0.4039455      total: 9.09s    remaining: 1.73s
168:     learn: 0.4036950      total: 9.14s    remaining: 1.68s
169:     learn: 0.4035463      total: 9.2s     remaining: 1.62s
170:     learn: 0.4034378      total: 9.25s    remaining: 1.57s
171:     learn: 0.4032971      total: 9.29s    remaining: 1.51s
172:     learn: 0.4032304      total: 9.35s    remaining: 1.46s
173:     learn: 0.4030822      total: 9.4s     remaining: 1.4s
174:     learn: 0.4029582      total: 9.45s    remaining: 1.35s
175:     learn: 0.4027742      total: 9.49s    remaining: 1.29s
176:     learn: 0.4025888      total: 9.53s    remaining: 1.24s
177:     learn: 0.4023454      total: 9.58s    remaining: 1.18s
178:     learn: 0.4021970      total: 9.63s    remaining: 1.13s
179:     learn: 0.4020896      total: 9.68s    remaining: 1.07s
180:     learn: 0.4019337      total: 9.72s    remaining: 1.02s
181:     learn: 0.4015439      total: 9.77s    remaining: 966ms
182:     learn: 0.4013166      total: 9.81s    remaining: 911ms
183:     learn: 0.4011585      total: 9.87s    remaining: 858ms
184:     learn: 0.4009685      total: 9.93s    remaining: 805ms
185:     learn: 0.4007910      total: 9.98s    remaining: 751ms
186:     learn: 0.4006354      total: 10s      remaining: 698ms
187:     learn: 0.4004531      total: 10.1s    remaining: 644ms
188:     learn: 0.4003454      total: 10.2s    remaining: 592ms
189:     learn: 0.4001073      total: 10.2s    remaining: 538ms
190:     learn: 0.3998006      total: 10.3s    remaining: 484ms
191:     learn: 0.3997592      total: 10.3s    remaining: 430ms
192:     learn: 0.3997121      total: 10.4s    remaining: 377ms
193:     learn: 0.3996163      total: 10.5s    remaining: 323ms
194:     learn: 0.3994608      total: 10.5s    remaining: 269ms
195:     learn: 0.3992509      total: 10.5s    remaining: 215ms
196:     learn: 0.3991767      total: 10.6s    remaining: 161ms
197:     learn: 0.3991123      total: 10.6s    remaining: 107ms
198:     learn: 0.3988987      total: 10.7s    remaining: 53.8ms
199:     learn: 0.3987169      total: 10.8s    remaining: 0us
0:       learn: 0.6347692      total: 42.5ms   remaining: 8.46s
1:       learn: 0.5978877      total: 104ms    remaining: 10.3s
2:       learn: 0.5729876      total: 147ms    remaining: 9.63s
3:       learn: 0.5458637      total: 204ms    remaining: 9.98s
4:       learn: 0.5288797      total: 247ms    remaining: 9.65s
5:       learn: 0.5166348      total: 294ms    remaining: 9.51s
6:       learn: 0.5042460      total: 341ms    remaining: 9.39s
7:       learn: 0.4924398      total: 383ms    remaining: 9.2s
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8:      learn: 0.4832375      total: 498ms    remaining: 10.6s
9:      learn: 0.4745800      total: 582ms    remaining: 11.1s
10:     learn: 0.4695331      total: 703ms    remaining: 12.1s
11:     learn: 0.4658769      total: 758ms    remaining: 11.9s
12:     learn: 0.4624600      total: 840ms    remaining: 12.1s
13:     learn: 0.4608258      total: 884ms    remaining: 11.7s
14:     learn: 0.4579433      total: 962ms    remaining: 11.9s
15:     learn: 0.4556663      total: 1.01s    remaining: 11.7s
16:     learn: 0.4534318      total: 1.07s    remaining: 11.5s
17:     learn: 0.4513969      total: 1.13s    remaining: 11.4s
18:     learn: 0.4496905      total: 1.2s     remaining: 11.4s
19:     learn: 0.4486377      total: 1.25s    remaining: 11.3s
20:     learn: 0.4472779      total: 1.3s     remaining: 11.1s
21:     learn: 0.4460950      total: 1.34s    remaining: 10.9s
22:     learn: 0.4451384      total: 1.39s    remaining: 10.7s
23:     learn: 0.4442887      total: 1.43s    remaining: 10.5s
24:     learn: 0.4433591      total: 1.48s    remaining: 10.4s
25:     learn: 0.4425187      total: 1.52s    remaining: 10.2s
26:     learn: 0.4412752      total: 1.56s    remaining: 10s
27:     learn: 0.4409134      total: 1.62s    remaining: 9.98s
28:     learn: 0.4404440      total: 1.68s    remaining: 9.88s
29:     learn: 0.4399153      total: 1.75s    remaining: 9.95s
30:     learn: 0.4395666      total: 1.81s    remaining: 9.89s
31:     learn: 0.4386193      total: 1.88s    remaining: 9.87s
32:     learn: 0.4381641      total: 1.95s    remaining: 9.89s
33:     learn: 0.4376133      total: 2.01s    remaining: 9.79s
34:     learn: 0.4372561      total: 2.07s    remaining: 9.75s
35:     learn: 0.4368906      total: 2.12s    remaining: 9.64s
36:     learn: 0.4363895      total: 2.19s    remaining: 9.64s
37:     learn: 0.4357103      total: 2.24s    remaining: 9.54s
38:     learn: 0.4351147      total: 2.32s    remaining: 9.59s
39:     learn: 0.4342977      total: 2.41s    remaining: 9.65s
40:     learn: 0.4340137      total: 2.52s    remaining: 9.79s
41:     learn: 0.4332250      total: 2.67s    remaining: 10.1s
42:     learn: 0.4326600      total: 2.78s    remaining: 10.1s
43:     learn: 0.4321744      total: 2.81s    remaining: 9.98s
44:     learn: 0.4317078      total: 2.88s    remaining: 9.91s
45:     learn: 0.4314150      total: 2.92s    remaining: 9.79s
46:     learn: 0.4312913      total: 2.98s    remaining: 9.72s
47:     learn: 0.4309910      total: 3.05s    remaining: 9.66s
48:     learn: 0.4302546      total: 3.1s     remaining: 9.54s
49:     learn: 0.4298672      total: 3.18s    remaining: 9.53s
50:     learn: 0.4296579      total: 3.23s    remaining: 9.44s
51:     learn: 0.4295964      total: 3.27s    remaining: 9.31s
52:     learn: 0.4290680      total: 3.33s    remaining: 9.23s
53:     learn: 0.4284491      total: 3.37s    remaining: 9.12s
54:     learn: 0.4276145      total: 3.46s    remaining: 9.13s
55:     learn: 0.4274631      total: 3.51s    remaining: 9.03s
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56:     learn: 0.4271594     total: 3.58s     remaining: 8.99s
57:     learn: 0.4269522     total: 3.63s     remaining: 8.89s
58:     learn: 0.4266576     total: 3.68s     remaining: 8.8s
59:     learn: 0.4263888     total: 3.74s     remaining: 8.73s
60:     learn: 0.4261702     total: 3.79s     remaining: 8.63s
61:     learn: 0.4260375     total: 3.85s     remaining: 8.57s
62:     learn: 0.4257428     total: 3.93s     remaining: 8.55s
63:     learn: 0.4253981     total: 3.98s     remaining: 8.46s
64:     learn: 0.4252561     total: 4.04s     remaining: 8.39s
65:     learn: 0.4250703     total: 4.18s     remaining: 8.48s
66:     learn: 0.4248549     total: 4.24s     remaining: 8.41s
67:     learn: 0.4247195     total: 4.29s     remaining: 8.34s
68:     learn: 0.4244893     total: 4.38s     remaining: 8.32s
69:     learn: 0.4243483     total: 4.51s     remaining: 8.37s
70:     learn: 0.4241135     total: 4.63s     remaining: 8.4s
71:     learn: 0.4239881     total: 4.74s     remaining: 8.42s
72:     learn: 0.4236571     total: 4.8s      remaining: 8.36s
73:     learn: 0.4235238     total: 4.87s     remaining: 8.29s
74:     learn: 0.4233786     total: 4.94s     remaining: 8.24s
75:     learn: 0.4233726     total: 5s        remaining: 8.16s
76:     learn: 0.4232518     total: 5.15s     remaining: 8.23s
77:     learn: 0.4230285     total: 5.27s     remaining: 8.25s
78:     learn: 0.4228508     total: 5.42s     remaining: 8.3s
79:     learn: 0.4226786     total: 5.52s     remaining: 8.28s
80:     learn: 0.4225051     total: 5.6s      remaining: 8.23s
81:     learn: 0.4223313     total: 5.68s     remaining: 8.18s
82:     learn: 0.4222261     total: 5.74s     remaining: 8.1s
83:     learn: 0.4221108     total: 5.79s     remaining: 8s
84:     learn: 0.4219764     total: 5.85s     remaining: 7.91s
85:     learn: 0.4217399     total: 5.91s     remaining: 7.84s
86:     learn: 0.4216297     total: 5.96s     remaining: 7.74s
87:     learn: 0.4210218     total: 6.02s     remaining: 7.66s
88:     learn: 0.4208593     total: 6.08s     remaining: 7.58s
89:     learn: 0.4208401     total: 6.18s     remaining: 7.55s
90:     learn: 0.4206340     total: 6.25s     remaining: 7.49s
91:     learn: 0.4204736     total: 6.32s     remaining: 7.42s
92:     learn: 0.4197009     total: 6.38s     remaining: 7.34s
93:     learn: 0.4191055     total: 6.44s     remaining: 7.26s
94:     learn: 0.4189414     total: 6.49s     remaining: 7.17s
95:     learn: 0.4188662     total: 6.53s     remaining: 7.07s
96:     learn: 0.4187161     total: 6.61s     remaining: 7.02s
97:     learn: 0.4185792     total: 6.67s     remaining: 6.94s
98:     learn: 0.4183969     total: 6.73s     remaining: 6.87s
99:     learn: 0.4181518     total: 6.8s      remaining: 6.8s
100:    learn: 0.4177217     total: 6.89s     remaining: 6.75s
101:    learn: 0.4174779     total: 6.99s     remaining: 6.71s
102:    learn: 0.4174361     total: 7.04s     remaining: 6.63s
103:    learn: 0.4172774     total: 7.1s      remaining: 6.55s
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104:    learn: 0.4170976    total: 7.16s    remaining: 6.48s
105:    learn: 0.4170614    total: 7.21s    remaining: 6.39s
106:    learn: 0.4170416    total: 7.26s    remaining: 6.31s
107:    learn: 0.4169230    total: 7.3s     remaining: 6.22s
108:    learn: 0.4167637    total: 7.36s    remaining: 6.14s
109:    learn: 0.4164773    total: 7.42s    remaining: 6.07s
110:    learn: 0.4161829    total: 7.5s     remaining: 6.02s
111:    learn: 0.4161161    total: 7.55s    remaining: 5.93s
112:    learn: 0.4159123    total: 7.6s     remaining: 5.85s
113:    learn: 0.4156182    total: 7.65s    remaining: 5.77s
114:    learn: 0.4154454    total: 7.7s     remaining: 5.69s
115:    learn: 0.4153997    total: 7.74s    remaining: 5.61s
116:    learn: 0.4152783    total: 7.79s    remaining: 5.53s
117:    learn: 0.4150793    total: 7.86s    remaining: 5.46s
118:    learn: 0.4148945    total: 7.92s    remaining: 5.39s
119:    learn: 0.4147685    total: 8.01s    remaining: 5.34s
120:    learn: 0.4146096    total: 8.1s     remaining: 5.29s
121:    learn: 0.4139066    total: 8.16s    remaining: 5.21s
122:    learn: 0.4139014    total: 8.21s    remaining: 5.14s
123:    learn: 0.4133545    total: 8.26s    remaining: 5.06s
124:    learn: 0.4128511    total: 8.32s    remaining: 4.99s
125:    learn: 0.4124027    total: 8.38s    remaining: 4.92s
126:    learn: 0.4118713    total: 8.44s    remaining: 4.85s
127:    learn: 0.4114381    total: 8.49s    remaining: 4.77s
128:    learn: 0.4110701    total: 8.54s    remaining: 4.7s
129:    learn: 0.4107702    total: 8.6s     remaining: 4.63s
130:    learn: 0.4107219    total: 8.65s    remaining: 4.56s
131:    learn: 0.4105527    total: 8.71s    remaining: 4.49s
132:    learn: 0.4101906    total: 8.75s    remaining: 4.41s
133:    learn: 0.4098537    total: 8.84s    remaining: 4.35s
134:    learn: 0.4093844    total: 8.9s     remaining: 4.29s
135:    learn: 0.4092041    total: 8.95s    remaining: 4.21s
136:    learn: 0.4089131    total: 9.01s    remaining: 4.14s
137:    learn: 0.4084660    total: 9.07s    remaining: 4.08s
138:    learn: 0.4083822    total: 9.13s    remaining: 4s
139:    learn: 0.4082690    total: 9.18s    remaining: 3.94s
140:    learn: 0.4082225    total: 9.24s    remaining: 3.87s
141:    learn: 0.4080635    total: 9.29s    remaining: 3.79s
142:    learn: 0.4079841    total: 9.35s    remaining: 3.73s
143:    learn: 0.4078202    total: 9.41s    remaining: 3.66s
144:    learn: 0.4076428    total: 9.46s    remaining: 3.59s
145:    learn: 0.4074939    total: 9.52s    remaining: 3.52s
146:    learn: 0.4073740    total: 9.56s    remaining: 3.45s
147:    learn: 0.4073713    total: 9.61s    remaining: 3.38s
148:    learn: 0.4069398    total: 9.66s    remaining: 3.31s
149:    learn: 0.4067826    total: 9.71s    remaining: 3.24s
150:    learn: 0.4066244    total: 9.76s    remaining: 3.17s
151:    learn: 0.4065092    total: 9.8s     remaining: 3.1s
```

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152:    learn: 0.4062722       total: 9.86s     remaining: 3.03s
153:    learn: 0.4060603       total: 9.9s      remaining: 2.96s
154:    learn: 0.4058949       total: 9.95s     remaining: 2.89s
155:    learn: 0.4056507       total: 10s       remaining: 2.83s
156:    learn: 0.4054563       total: 10.1s     remaining: 2.76s
157:    learn: 0.4053416       total: 10.1s     remaining: 2.69s
158:    learn: 0.4051475       total: 10.2s     remaining: 2.63s
159:    learn: 0.4049376       total: 10.3s     remaining: 2.56s
160:    learn: 0.4048327       total: 10.3s     remaining: 2.5s
161:    learn: 0.4045692       total: 10.3s     remaining: 2.43s
162:    learn: 0.4041170       total: 10.4s     remaining: 2.36s
163:    learn: 0.4040187       total: 10.5s     remaining: 2.3s
164:    learn: 0.4038612       total: 10.5s     remaining: 2.23s
165:    learn: 0.4037584       total: 10.6s     remaining: 2.17s
166:    learn: 0.4036252       total: 10.7s     remaining: 2.11s
167:    learn: 0.4034817       total: 10.7s     remaining: 2.04s
168:    learn: 0.4032703       total: 10.8s     remaining: 1.97s
169:    learn: 0.4032527       total: 10.8s     remaining: 1.91s
170:    learn: 0.4031133       total: 10.9s     remaining: 1.85s
171:    learn: 0.4028484       total: 10.9s     remaining: 1.78s
172:    learn: 0.4027700       total: 11s       remaining: 1.72s
173:    learn: 0.4026900       total: 11.1s     remaining: 1.66s
174:    learn: 0.4023857       total: 11.1s     remaining: 1.59s
175:    learn: 0.4020927       total: 11.2s     remaining: 1.53s
176:    learn: 0.4019927       total: 11.3s     remaining: 1.46s
177:    learn: 0.4018290       total: 11.3s     remaining: 1.4s
178:    learn: 0.4015185       total: 11.4s     remaining: 1.33s
179:    learn: 0.4014201       total: 11.4s     remaining: 1.27s
180:    learn: 0.4013006       total: 11.5s     remaining: 1.21s
181:    learn: 0.4012536       total: 11.5s     remaining: 1.14s
182:    learn: 0.4011729       total: 11.6s     remaining: 1.07s
183:    learn: 0.4010696       total: 11.6s     remaining: 1.01s
184:    learn: 0.4009662       total: 11.7s     remaining: 948ms
185:    learn: 0.4008588       total: 11.7s     remaining: 883ms
186:    learn: 0.4007414       total: 11.8s     remaining: 821ms
187:    learn: 0.4006048       total: 11.9s     remaining: 757ms
188:    learn: 0.4003877       total: 11.9s     remaining: 693ms
189:    learn: 0.4003805       total: 12s       remaining: 630ms
190:    learn: 0.4002803       total: 12s       remaining: 566ms
191:    learn: 0.4001641       total: 12s       remaining: 502ms
192:    learn: 0.4001122       total: 12.1s     remaining: 439ms
193:    learn: 0.3999899       total: 12.1s     remaining: 376ms
194:    learn: 0.3998948       total: 12.2s     remaining: 313ms
195:    learn: 0.3997438       total: 12.3s     remaining: 251ms
196:    learn: 0.3994236       total: 12.3s     remaining: 188ms
197:    learn: 0.3992454       total: 12.4s     remaining: 125ms
198:    learn: 0.3989765       total: 12.4s     remaining: 62.5ms
199:    learn: 0.3988394       total: 12.5s     remaining: 0us
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0:      learn: 0.6334001      total: 53.4ms    remaining: 10.6s
1:      learn: 0.5878502      total: 112ms     remaining: 11.1s
2:      learn: 0.5623553      total: 166ms     remaining: 10.9s
3:      learn: 0.5381485      total: 272ms     remaining: 13.3s
4:      learn: 0.5226022      total: 320ms     remaining: 12.5s
5:      learn: 0.5100954      total: 400ms     remaining: 12.9s
6:      learn: 0.4984219      total: 458ms     remaining: 12.6s
7:      learn: 0.4900238      total: 522ms     remaining: 12.5s
8:      learn: 0.4851073      total: 563ms     remaining: 12s
9:      learn: 0.4768765      total: 612ms     remaining: 11.6s
10:     learn: 0.4710158      total: 660ms     remaining: 11.3s
11:     learn: 0.4671514      total: 763ms     remaining: 12s
12:     learn: 0.4637653      total: 898ms     remaining: 12.9s
13:     learn: 0.4613999      total: 1.04s     remaining: 13.8s
14:     learn: 0.4588258      total: 1.16s     remaining: 14.3s
15:     learn: 0.4561787      total: 1.24s     remaining: 14.3s
16:     learn: 0.4539349      total: 1.31s     remaining: 14.1s
17:     learn: 0.4526573      total: 1.38s     remaining: 14s
18:     learn: 0.4509030      total: 1.47s     remaining: 14s
19:     learn: 0.4497544      total: 1.52s     remaining: 13.7s
20:     learn: 0.4485172      total: 1.57s     remaining: 13.4s
21:     learn: 0.4472756      total: 1.65s     remaining: 13.4s
22:     learn: 0.4460668      total: 1.71s     remaining: 13.1s
23:     learn: 0.4453849      total: 1.78s     remaining: 13.1s
24:     learn: 0.4435932      total: 1.83s     remaining: 12.8s
25:     learn: 0.4429871      total: 1.89s     remaining: 12.6s
26:     learn: 0.4421842      total: 1.97s     remaining: 12.6s
27:     learn: 0.4412052      total: 2.03s     remaining: 12.5s
28:     learn: 0.4401731      total: 2.09s     remaining: 12.3s
29:     learn: 0.4393718      total: 2.15s     remaining: 12.2s
30:     learn: 0.4388006      total: 2.21s     remaining: 12.1s
31:     learn: 0.4381212      total: 2.28s     remaining: 12s
32:     learn: 0.4373300      total: 2.34s     remaining: 11.8s
33:     learn: 0.4369195      total: 2.39s     remaining: 11.7s
34:     learn: 0.4365356      total: 2.45s     remaining: 11.6s
35:     learn: 0.4361286      total: 2.52s     remaining: 11.5s
36:     learn: 0.4357392      total: 2.58s     remaining: 11.4s
37:     learn: 0.4356184      total: 2.63s     remaining: 11.2s
38:     learn: 0.4350574      total: 2.7s      remaining: 11.1s
39:     learn: 0.4348826      total: 2.77s     remaining: 11.1s
40:     learn: 0.4344306      total: 2.82s     remaining: 10.9s
41:     learn: 0.4341032      total: 2.87s     remaining: 10.8s
42:     learn: 0.4338577      total: 2.93s     remaining: 10.7s
43:     learn: 0.4331009      total: 2.98s     remaining: 10.6s
44:     learn: 0.4324820      total: 3.03s     remaining: 10.4s
45:     learn: 0.4321988      total: 3.09s     remaining: 10.3s
46:     learn: 0.4318670      total: 3.14s     remaining: 10.2s
47:     learn: 0.4312694      total: 3.21s     remaining: 10.2s
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48:     learn: 0.4307233     total: 3.27s     remaining: 10.1s
49:     learn: 0.4303368     total: 3.33s     remaining: 9.97s
50:     learn: 0.4298944     total: 3.38s     remaining: 9.88s
51:     learn: 0.4296643     total: 3.46s     remaining: 9.85s
52:     learn: 0.4294423     total: 3.51s     remaining: 9.73s
53:     learn: 0.4292408     total: 3.56s     remaining: 9.64s
54:     learn: 0.4291515     total: 3.63s     remaining: 9.57s
55:     learn: 0.4289527     total: 3.71s     remaining: 9.54s
56:     learn: 0.4286587     total: 3.76s     remaining: 9.44s
57:     learn: 0.4284490     total: 3.81s     remaining: 9.34s
58:     learn: 0.4275031     total: 3.89s     remaining: 9.29s
59:     learn: 0.4273208     total: 3.94s     remaining: 9.19s
60:     learn: 0.4271543     total: 4s        remaining: 9.12s
61:     learn: 0.4268840     total: 4.09s     remaining: 9.11s
62:     learn: 0.4261610     total: 4.15s     remaining: 9.02s
63:     learn: 0.4259648     total: 4.2s      remaining: 8.92s
64:     learn: 0.4257159     total: 4.25s     remaining: 8.82s
65:     learn: 0.4253152     total: 4.29s     remaining: 8.71s
66:     learn: 0.4251683     total: 4.34s     remaining: 8.62s
67:     learn: 0.4246682     total: 4.39s     remaining: 8.52s
68:     learn: 0.4244936     total: 4.45s     remaining: 8.45s
69:     learn: 0.4241789     total: 4.59s     remaining: 8.53s
70:     learn: 0.4240970     total: 4.75s     remaining: 8.62s
71:     learn: 0.4240443     total: 4.81s     remaining: 8.56s
72:     learn: 0.4236245     total: 4.87s     remaining: 8.48s
73:     learn: 0.4229532     total: 4.93s     remaining: 8.39s
74:     learn: 0.4227600     total: 4.99s     remaining: 8.32s
75:     learn: 0.4226514     total: 5.07s     remaining: 8.28s
76:     learn: 0.4223267     total: 5.13s     remaining: 8.19s
77:     learn: 0.4218032     total: 5.22s     remaining: 8.17s
78:     learn: 0.4214897     total: 5.28s     remaining: 8.09s
79:     learn: 0.4212525     total: 5.33s     remaining: 8s
80:     learn: 0.4211238     total: 5.38s     remaining: 7.91s
81:     learn: 0.4210183     total: 5.43s     remaining: 7.81s
82:     learn: 0.4208608     total: 5.49s     remaining: 7.73s
83:     learn: 0.4206696     total: 5.53s     remaining: 7.64s
84:     learn: 0.4205671     total: 5.58s     remaining: 7.55s
85:     learn: 0.4203256     total: 5.63s     remaining: 7.47s
86:     learn: 0.4201438     total: 5.68s     remaining: 7.38s
87:     learn: 0.4197728     total: 5.74s     remaining: 7.31s
88:     learn: 0.4194011     total: 5.8s      remaining: 7.23s
89:     learn: 0.4189976     total: 5.85s     remaining: 7.16s
90:     learn: 0.4189976     total: 5.87s     remaining: 7.04s
91:     learn: 0.4188337     total: 5.93s     remaining: 6.96s
92:     learn: 0.4188054     total: 5.98s     remaining: 6.88s
93:     learn: 0.4186859     total: 6.03s     remaining: 6.8s
94:     learn: 0.4181370     total: 6.09s     remaining: 6.73s
95:     learn: 0.4180533     total: 6.14s     remaining: 6.65s
```

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96:     learn: 0.4179578      total: 6.19s    remaining: 6.57s
97:     learn: 0.4179240      total: 6.24s    remaining: 6.49s
98:     learn: 0.4177270      total: 6.28s    remaining: 6.41s
99:     learn: 0.4169255      total: 6.34s    remaining: 6.34s
100:    learn: 0.4165028      total: 6.39s    remaining: 6.27s
101:    learn: 0.4163212      total: 6.46s    remaining: 6.2s
102:    learn: 0.4160602      total: 6.53s    remaining: 6.15s
103:    learn: 0.4156316      total: 6.59s    remaining: 6.08s
104:    learn: 0.4154610      total: 6.65s    remaining: 6.01s
105:    learn: 0.4149976      total: 6.71s    remaining: 5.96s
106:    learn: 0.4147632      total: 6.78s    remaining: 5.89s
107:    learn: 0.4146915      total: 6.83s    remaining: 5.82s
108:    learn: 0.4144542      total: 6.89s    remaining: 5.76s
109:    learn: 0.4142947      total: 6.95s    remaining: 5.69s
110:    learn: 0.4136569      total: 7s       remaining: 5.61s
111:    learn: 0.4134989      total: 7.06s    remaining: 5.54s
112:    learn: 0.4133613      total: 7.12s    remaining: 5.48s
113:    learn: 0.4133123      total: 7.18s    remaining: 5.42s
114:    learn: 0.4132045      total: 7.23s    remaining: 5.34s
115:    learn: 0.4125522      total: 7.28s    remaining: 5.28s
116:    learn: 0.4122958      total: 7.34s    remaining: 5.21s
117:    learn: 0.4120236      total: 7.4s     remaining: 5.14s
118:    learn: 0.4117707      total: 7.46s    remaining: 5.08s
119:    learn: 0.4112254      total: 7.51s    remaining: 5.01s
120:    learn: 0.4110835      total: 7.56s    remaining: 4.93s
121:    learn: 0.4110202      total: 7.62s    remaining: 4.87s
122:    learn: 0.4109454      total: 7.67s    remaining: 4.8s
123:    learn: 0.4108143      total: 7.73s    remaining: 4.74s
124:    learn: 0.4105733      total: 7.78s    remaining: 4.67s
125:    learn: 0.4103989      total: 7.84s    remaining: 4.61s
126:    learn: 0.4102404      total: 7.89s    remaining: 4.54s
127:    learn: 0.4100853      total: 7.94s    remaining: 4.47s
128:    learn: 0.4100441      total: 7.99s    remaining: 4.4s
129:    learn: 0.4099992      total: 8.04s    remaining: 4.33s
130:    learn: 0.4095473      total: 8.1s     remaining: 4.26s
131:    learn: 0.4094280      total: 8.15s    remaining: 4.2s
132:    learn: 0.4089576      total: 8.2s     remaining: 4.13s
133:    learn: 0.4087796      total: 8.26s    remaining: 4.07s
134:    learn: 0.4086742      total: 8.3s     remaining: 4s
135:    learn: 0.4084413      total: 8.35s    remaining: 3.93s
136:    learn: 0.4083021      total: 8.4s     remaining: 3.86s
137:    learn: 0.4082267      total: 8.45s    remaining: 3.79s
138:    learn: 0.4079994      total: 8.52s    remaining: 3.74s
139:    learn: 0.4078821      total: 8.57s    remaining: 3.67s
140:    learn: 0.4078556      total: 8.62s    remaining: 3.6s
141:    learn: 0.4076465      total: 8.67s    remaining: 3.54s
142:    learn: 0.4075813      total: 8.71s    remaining: 3.47s
143:    learn: 0.4073079      total: 8.77s    remaining: 3.41s
```

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144:     learn: 0.4070117      total: 8.82s     remaining: 3.35s
145:     learn: 0.4068073      total: 8.88s     remaining: 3.28s
146:     learn: 0.4065421      total: 8.93s     remaining: 3.22s
147:     learn: 0.4065008      total: 8.98s     remaining: 3.15s
148:     learn: 0.4063591      total: 9.02s     remaining: 3.09s
149:     learn: 0.4060971      total: 9.07s     remaining: 3.02s
150:     learn: 0.4057785      total: 9.12s     remaining: 2.96s
151:     learn: 0.4056536      total: 9.16s     remaining: 2.89s
152:     learn: 0.4055419      total: 9.23s     remaining: 2.84s
153:     learn: 0.4053529      total: 9.29s     remaining: 2.77s
154:     learn: 0.4052027      total: 9.37s     remaining: 2.72s
155:     learn: 0.4050703      total: 9.42s     remaining: 2.66s
156:     learn: 0.4049769      total: 9.49s     remaining: 2.6s
157:     learn: 0.4047492      total: 9.56s     remaining: 2.54s
158:     learn: 0.4044043      total: 9.62s     remaining: 2.48s
159:     learn: 0.4040273      total: 9.67s     remaining: 2.42s
160:     learn: 0.4038533      total: 9.74s     remaining: 2.36s
161:     learn: 0.4036825      total: 9.8s      remaining: 2.3s
162:     learn: 0.4034978      total: 9.86s     remaining: 2.24s
163:     learn: 0.4033441      total: 9.91s     remaining: 2.17s
164:     learn: 0.4031193      total: 9.96s     remaining: 2.11s
165:     learn: 0.4030528      total: 10s       remaining: 2.05s
166:     learn: 0.4029334      total: 10.1s     remaining: 1.99s
167:     learn: 0.4026881      total: 10.1s     remaining: 1.93s
168:     learn: 0.4026683      total: 10.2s     remaining: 1.87s
169:     learn: 0.4024126      total: 10.2s     remaining: 1.81s
170:     learn: 0.4022985      total: 10.3s     remaining: 1.75s
171:     learn: 0.4021383      total: 10.4s     remaining: 1.69s
172:     learn: 0.4016520      total: 10.4s     remaining: 1.63s
173:     learn: 0.4014916      total: 10.5s     remaining: 1.56s
174:     learn: 0.4014417      total: 10.5s     remaining: 1.5s
175:     learn: 0.4013393      total: 10.6s     remaining: 1.44s
176:     learn: 0.4013131      total: 10.7s     remaining: 1.38s
177:     learn: 0.4011166      total: 10.7s     remaining: 1.32s
178:     learn: 0.4010371      total: 10.8s     remaining: 1.26s
179:     learn: 0.4008745      total: 10.8s     remaining: 1.2s
180:     learn: 0.4006061      total: 10.9s     remaining: 1.14s
181:     learn: 0.4004893      total: 10.9s     remaining: 1.08s
182:     learn: 0.4004190      total: 11s       remaining: 1.02s
183:     learn: 0.4003093      total: 11.1s     remaining: 961ms
184:     learn: 0.4001505      total: 11.1s     remaining: 900ms
185:     learn: 0.4000813      total: 11.2s     remaining: 840ms
186:     learn: 0.4000270      total: 11.2s     remaining: 779ms
187:     learn: 0.3998885      total: 11.3s     remaining: 720ms
188:     learn: 0.3996987      total: 11.3s     remaining: 659ms
189:     learn: 0.3995329      total: 11.4s     remaining: 599ms
190:     learn: 0.3994349      total: 11.4s     remaining: 539ms
191:     learn: 0.3991571      total: 11.5s     remaining: 478ms
```

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192:    learn: 0.3989906    total: 11.5s    remaining: 418ms
193:    learn: 0.3988469    total: 11.6s    remaining: 358ms
194:    learn: 0.3987336    total: 11.6s    remaining: 298ms
195:    learn: 0.3984170    total: 11.7s    remaining: 239ms
196:    learn: 0.3983447    total: 11.7s    remaining: 179ms
197:    learn: 0.3982742    total: 11.8s    remaining: 119ms
198:    learn: 0.3979102    total: 11.8s    remaining: 59.5ms
199:    learn: 0.3978617    total: 11.9s    remaining: 0us
```
Mean train f1-score of data (CV) 4 is : 0.8167782154316755
Mean test f1-score of data (CV) 4 is : 0.8035896026646626

Shape of data 5 is :
(27303, 10)
Distribution of 5 is :
Yes   14102
No   13201
Name: TIMELY_RESPONSE, dtype: int64

<IPython.core.display.HTML object>

MetricVisualizer(layout=Layout(align_self='stretch', height='500px'))

Train f1_score [Yes]: for data 5 is : 0.8173698062046415
Train f1_score [No]: for data 5 is : 0.821817615935263

	precision	recall	f1-score	support
No	0.79	0.85	0.82	924
Yes	0.85	0.79	0.82	988
accuracy			0.82	1912
macro avg	0.82	0.82	0.82	1912
weighted avg	0.82	0.82	0.82	1912
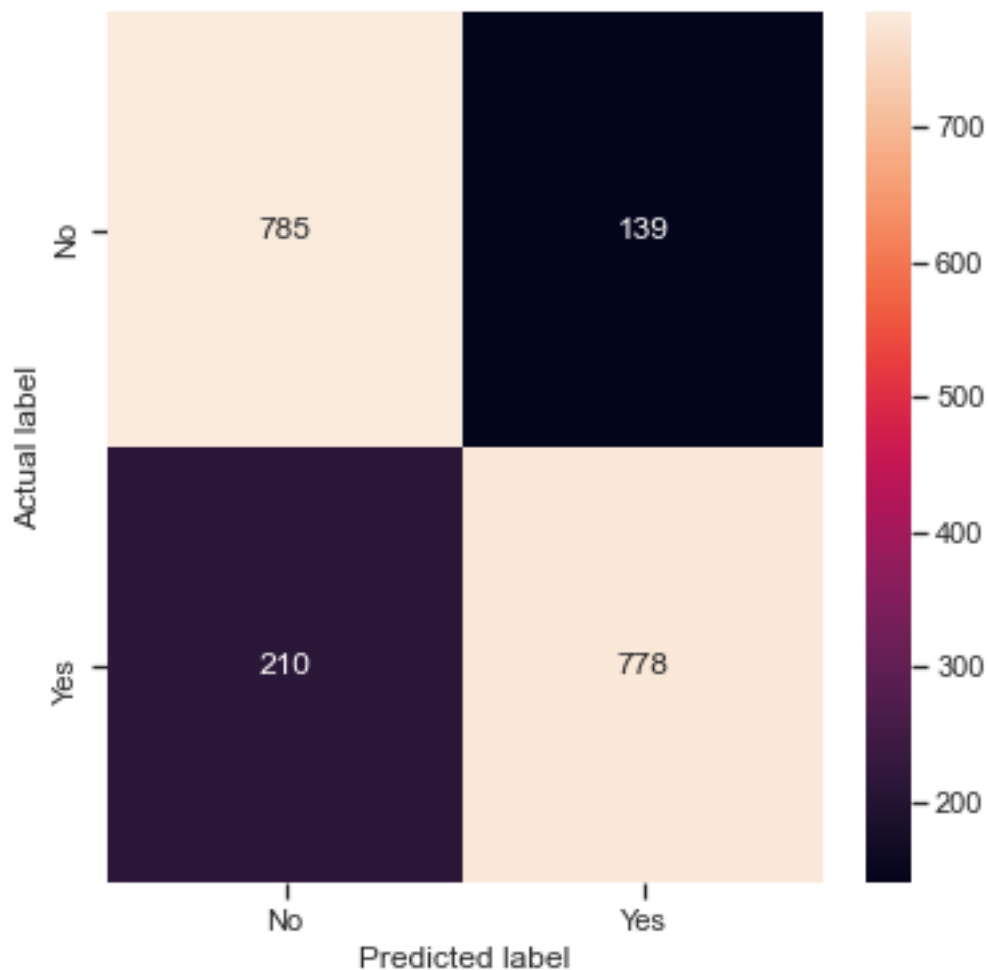
```
Cross validation result for data 5 is :
0:      learn: 0.6409732      total: 42.1ms    remaining: 8.37s
1:      learn: 0.5955957      total: 99ms      remaining: 9.8s
2:      learn: 0.5615305      total: 145ms     remaining: 9.54s
3:      learn: 0.5395843      total: 197ms     remaining: 9.63s
4:      learn: 0.5248248      total: 256ms     remaining: 9.98s
5:      learn: 0.5123119      total: 298ms     remaining: 9.63s
6:      learn: 0.5018096      total: 355ms     remaining: 9.79s
7:      learn: 0.4935467      total: 417ms     remaining: 10s
8:      learn: 0.4871809      total: 467ms     remaining: 9.9s
9:      learn: 0.4798610      total: 511ms     remaining: 9.7s
10:     learn: 0.4751416      total: 559ms     remaining: 9.6s
11:     learn: 0.4705750      total: 602ms     remaining: 9.43s
12:     learn: 0.4675809      total: 656ms     remaining: 9.44s
13:     learn: 0.4642990      total: 725ms     remaining: 9.64s
14:     learn: 0.4618855      total: 786ms     remaining: 9.69s
15:     learn: 0.4598704      total: 839ms     remaining: 9.65s
```

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16:     learn: 0.4586259     total: 915ms     remaining: 9.85s
17:     learn: 0.4568531     total: 967ms     remaining: 9.78s
18:     learn: 0.4550743     total: 1.01s     remaining: 9.64s
19:     learn: 0.4526166     total: 1.06s     remaining: 9.54s
20:     learn: 0.4517884     total: 1.1s      remaining: 9.4s
21:     learn: 0.4497690     total: 1.17s     remaining: 9.5s
22:     learn: 0.4491251     total: 1.24s     remaining: 9.52s
23:     learn: 0.4476586     total: 1.32s     remaining: 9.72s
24:     learn: 0.4468768     total: 1.4s      remaining: 9.79s
25:     learn: 0.4462219     total: 1.45s     remaining: 9.68s
26:     learn: 0.4454728     total: 1.5s      remaining: 9.63s
27:     learn: 0.4447131     total: 1.57s     remaining: 9.63s
28:     learn: 0.4439191     total: 1.63s     remaining: 9.59s
29:     learn: 0.4434979     total: 1.67s     remaining: 9.46s
30:     learn: 0.4427550     total: 1.72s     remaining: 9.37s
31:     learn: 0.4421460     total: 1.76s     remaining: 9.27s
32:     learn: 0.4414904     total: 1.81s     remaining: 9.19s
33:     learn: 0.4412858     total: 1.86s     remaining: 9.07s
34:     learn: 0.4408446     total: 1.9s      remaining: 8.97s
35:     learn: 0.4405050     total: 1.96s     remaining: 8.91s
36:     learn: 0.4403650     total: 2.01s     remaining: 8.87s
37:     learn: 0.4399626     total: 2.07s     remaining: 8.82s
38:     learn: 0.4395550     total: 2.11s     remaining: 8.71s
39:     learn: 0.4391195     total: 2.15s     remaining: 8.62s
40:     learn: 0.4385532     total: 2.2s      remaining: 8.53s
41:     learn: 0.4382836     total: 2.25s     remaining: 8.45s
42:     learn: 0.4379293     total: 2.31s     remaining: 8.42s
43:     learn: 0.4371924     total: 2.35s     remaining: 8.34s
44:     learn: 0.4369508     total: 2.41s     remaining: 8.3s
45:     learn: 0.4368394     total: 2.49s     remaining: 8.34s
46:     learn: 0.4364206     total: 2.55s     remaining: 8.31s
47:     learn: 0.4357553     total: 2.61s     remaining: 8.27s
48:     learn: 0.4352822     total: 2.66s     remaining: 8.21s
49:     learn: 0.4344278     total: 2.71s     remaining: 8.13s
50:     learn: 0.4343056     total: 2.76s     remaining: 8.05s
51:     learn: 0.4338120     total: 2.83s     remaining: 8.04s
52:     learn: 0.4334882     total: 2.89s     remaining: 8.02s
53:     learn: 0.4328126     total: 2.95s     remaining: 7.99s
54:     learn: 0.4325633     total: 3.02s     remaining: 7.95s
55:     learn: 0.4323240     total: 3.07s     remaining: 7.89s
56:     learn: 0.4321677     total: 3.12s     remaining: 7.82s
57:     learn: 0.4319580     total: 3.17s     remaining: 7.75s
58:     learn: 0.4313993     total: 3.24s     remaining: 7.75s
59:     learn: 0.4309345     total: 3.29s     remaining: 7.67s
60:     learn: 0.4303718     total: 3.34s     remaining: 7.62s
61:     learn: 0.4298272     total: 3.4s      remaining: 7.57s
62:     learn: 0.4296968     total: 3.48s     remaining: 7.57s
63:     learn: 0.4293398     total: 3.54s     remaining: 7.52s
```

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64:      learn: 0.4289975      total: 3.59s      remaining: 7.46s
65:      learn: 0.4283227      total: 3.65s      remaining: 7.42s
66:      learn: 0.4283226      total: 3.67s      remaining: 7.28s
67:      learn: 0.4279761      total: 3.72s      remaining: 7.22s
68:      learn: 0.4279761      total: 3.75s      remaining: 7.13s
69:      learn: 0.4274964      total: 3.82s      remaining: 7.09s
70:      learn: 0.4273942      total: 3.87s      remaining: 7.04s
71:      learn: 0.4271942      total: 3.94s      remaining: 7.01s
72:      learn: 0.4269554      total: 3.99s      remaining: 6.95s
73:      learn: 0.4268458      total: 4.05s      remaining: 6.9s
74:      learn: 0.4266126      total: 4.12s      remaining: 6.87s
75:      learn: 0.4264658      total: 4.19s      remaining: 6.84s
76:      learn: 0.4263775      total: 4.24s      remaining: 6.78s
77:      learn: 0.4262686      total: 4.32s      remaining: 6.75s
78:      learn: 0.4255756      total: 4.37s      remaining: 6.7s
79:      learn: 0.4252571      total: 4.43s      remaining: 6.65s
80:      learn: 0.4251065      total: 4.5s       remaining: 6.61s
81:      learn: 0.4248232      total: 4.55s      remaining: 6.55s
82:      learn: 0.4247582      total: 4.61s      remaining: 6.5s
83:      learn: 0.4245903      total: 4.66s      remaining: 6.44s
84:      learn: 0.4242775      total: 4.71s      remaining: 6.38s
85:      learn: 0.4241448      total: 4.76s      remaining: 6.31s
86:      learn: 0.4241448      total: 4.78s      remaining: 6.21s
87:      learn: 0.4240242      total: 4.83s      remaining: 6.15s
88:      learn: 0.4239771      total: 4.88s      remaining: 6.09s
89:      learn: 0.4237595      total: 4.95s      remaining: 6.04s
90:      learn: 0.4236598      total: 5s         remaining: 5.98s
91:      learn: 0.4235660      total: 5.05s      remaining: 5.93s
92:      learn: 0.4233397      total: 5.13s      remaining: 5.9s
93:      learn: 0.4229604      total: 5.19s      remaining: 5.85s
94:      learn: 0.4224554      total: 5.25s      remaining: 5.8s
95:      learn: 0.4223928      total: 5.3s       remaining: 5.74s
96:      learn: 0.4221757      total: 5.36s      remaining: 5.69s
97:      learn: 0.4219639      total: 5.42s      remaining: 5.64s
98:      learn: 0.4219639      total: 5.44s      remaining: 5.55s
99:      learn: 0.4215112      total: 5.5s       remaining: 5.5s
100:     learn: 0.4208074      total: 5.55s      remaining: 5.45s
101:     learn: 0.4206304      total: 5.63s      remaining: 5.41s
102:     learn: 0.4206281      total: 5.66s      remaining: 5.33s
103:     learn: 0.4205140      total: 5.77s      remaining: 5.33s
104:     learn: 0.4205139      total: 5.86s      remaining: 5.3s
105:     learn: 0.4203353      total: 5.96s      remaining: 5.28s
106:     learn: 0.4201246      total: 6.03s      remaining: 5.24s
107:     learn: 0.4199469      total: 6.09s      remaining: 5.18s
108:     learn: 0.4198468      total: 6.16s      remaining: 5.14s
109:     learn: 0.4194690      total: 6.21s      remaining: 5.08s
110:     learn: 0.4189159      total: 6.29s      remaining: 5.04s
111:     learn: 0.4187238      total: 6.35s      remaining: 4.99s
```

```
112:    learn: 0.4185106    total: 6.43s    remaining: 4.95s
113:    learn: 0.4183010    total: 6.49s    remaining: 4.89s
114:    learn: 0.4181917    total: 6.53s    remaining: 4.83s
115:    learn: 0.4178172    total: 6.58s    remaining: 4.76s
116:    learn: 0.4176729    total: 6.7s     remaining: 4.75s
117:    learn: 0.4175493    total: 6.8s     remaining: 4.73s
118:    learn: 0.4171097    total: 6.9s     remaining: 4.7s
119:    learn: 0.4167787    total: 6.98s    remaining: 4.65s
120:    learn: 0.4166349    total: 7.04s    remaining: 4.6s
121:    learn: 0.4163410    total: 7.12s    remaining: 4.55s
122:    learn: 0.4159015    total: 7.19s    remaining: 4.5s
123:    learn: 0.4155656    total: 7.24s    remaining: 4.44s
124:    learn: 0.4152678    total: 7.28s    remaining: 4.37s
125:    learn: 0.4149854    total: 7.35s    remaining: 4.32s
126:    learn: 0.4144756    total: 7.42s    remaining: 4.26s
127:    learn: 0.4143440    total: 7.46s    remaining: 4.2s
128:    learn: 0.4143045    total: 7.51s    remaining: 4.13s
129:    learn: 0.4141083    total: 7.55s    remaining: 4.07s
130:    learn: 0.4140509    total: 7.61s    remaining: 4.01s
131:    learn: 0.4137799    total: 7.67s    remaining: 3.95s
132:    learn: 0.4137049    total: 7.73s    remaining: 3.9s
133:    learn: 0.4136906    total: 7.85s    remaining: 3.87s
134:    learn: 0.4131487    total: 7.91s    remaining: 3.81s
135:    learn: 0.4126601    total: 7.97s    remaining: 3.75s
136:    learn: 0.4124530    total: 8.03s    remaining: 3.69s
137:    learn: 0.4122000    total: 8.08s    remaining: 3.63s
138:    learn: 0.4120392    total: 8.15s    remaining: 3.57s
139:    learn: 0.4119524    total: 8.2s     remaining: 3.52s
140:    learn: 0.4115216    total: 8.26s    remaining: 3.46s
141:    learn: 0.4115031    total: 8.31s    remaining: 3.39s
142:    learn: 0.4112239    total: 8.36s    remaining: 3.33s
143:    learn: 0.4108766    total: 8.42s    remaining: 3.28s
144:    learn: 0.4106756    total: 8.47s    remaining: 3.21s
145:    learn: 0.4106725    total: 8.55s    remaining: 3.16s
146:    learn: 0.4106232    total: 8.62s    remaining: 3.11s
147:    learn: 0.4105153    total: 8.67s    remaining: 3.05s
148:    learn: 0.4102992    total: 8.72s    remaining: 2.98s
149:    learn: 0.4101948    total: 8.78s    remaining: 2.93s
150:    learn: 0.4100513    total: 8.84s    remaining: 2.87s
151:    learn: 0.4097234    total: 8.89s    remaining: 2.81s
152:    learn: 0.4096128    total: 8.96s    remaining: 2.75s
153:    learn: 0.4093378    total: 9.05s    remaining: 2.7s
154:    learn: 0.4092025    total: 9.11s    remaining: 2.65s
155:    learn: 0.4089947    total: 9.17s    remaining: 2.59s
156:    learn: 0.4088723    total: 9.24s    remaining: 2.53s
157:    learn: 0.4086691    total: 9.32s    remaining: 2.48s
158:    learn: 0.4086466    total: 9.38s    remaining: 2.42s
159:    learn: 0.4085139    total: 9.45s    remaining: 2.36s
```

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160:     learn: 0.4083214     total: 9.51s    remaining: 2.3s
161:     learn: 0.4082367     total: 9.59s    remaining: 2.25s
162:     learn: 0.4082235     total: 9.65s    remaining: 2.19s
163:     learn: 0.4080642     total: 9.71s    remaining: 2.13s
164:     learn: 0.4078983     total: 9.77s    remaining: 2.07s
165:     learn: 0.4075900     total: 9.84s    remaining: 2.01s
166:     learn: 0.4072598     total: 9.9s     remaining: 1.96s
167:     learn: 0.4070744     total: 9.95s    remaining: 1.9s
168:     learn: 0.4069003     total: 10s      remaining: 1.83s
169:     learn: 0.4067063     total: 10.1s    remaining: 1.78s
170:     learn: 0.4066208     total: 10.1s    remaining: 1.72s
171:     learn: 0.4064838     total: 10.2s    remaining: 1.66s
172:     learn: 0.4063303     total: 10.2s    remaining: 1.6s
173:     learn: 0.4062932     total: 10.3s    remaining: 1.53s
174:     learn: 0.4058241     total: 10.3s    remaining: 1.48s
175:     learn: 0.4055929     total: 10.4s    remaining: 1.42s
176:     learn: 0.4053821     total: 10.4s    remaining: 1.36s
177:     learn: 0.4052118     total: 10.5s    remaining: 1.3s
178:     learn: 0.4051571     total: 10.6s    remaining: 1.24s
179:     learn: 0.4051119     total: 10.6s    remaining: 1.18s
180:     learn: 0.4048040     total: 10.7s    remaining: 1.12s
181:     learn: 0.4046700     total: 10.7s    remaining: 1.06s
182:     learn: 0.4045670     total: 10.8s    remaining: 1s
183:     learn: 0.4043830     total: 10.8s    remaining: 943ms
184:     learn: 0.4043446     total: 10.9s    remaining: 884ms
185:     learn: 0.4042707     total: 11s      remaining: 825ms
186:     learn: 0.4040235     total: 11s      remaining: 767ms
187:     learn: 0.4039351     total: 11.1s    remaining: 707ms
188:     learn: 0.4037767     total: 11.1s    remaining: 648ms
189:     learn: 0.4036193     total: 11.2s    remaining: 589ms
190:     learn: 0.4033257     total: 11.3s    remaining: 530ms
191:     learn: 0.4032273     total: 11.3s    remaining: 472ms
192:     learn: 0.4030526     total: 11.4s    remaining: 414ms
193:     learn: 0.4029012     total: 11.5s    remaining: 355ms
194:     learn: 0.4027105     total: 11.5s    remaining: 295ms
195:     learn: 0.4024583     total: 11.6s    remaining: 236ms
196:     learn: 0.4023365     total: 11.6s    remaining: 177ms
197:     learn: 0.4022120     total: 11.7s    remaining: 118ms
198:     learn: 0.4019297     total: 11.7s    remaining: 58.9ms
199:     learn: 0.4018275     total: 11.8s    remaining: 0us
0:       learn: 0.6332206     total: 45.4ms   remaining: 9.04s
1:       learn: 0.5911837     total: 90.7ms   remaining: 8.98s
2:       learn: 0.5616682     total: 148ms    remaining: 9.74s
3:       learn: 0.5372592     total: 201ms    remaining: 9.83s
4:       learn: 0.5220775     total: 245ms    remaining: 9.57s
5:       learn: 0.5081382     total: 300ms    remaining: 9.7s
6:       learn: 0.4987850     total: 351ms    remaining: 9.66s
7:       learn: 0.4925943     total: 391ms    remaining: 9.38s
```

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8:      learn: 0.4839210      total: 454ms    remaining: 9.63s
9:      learn: 0.4768736      total: 510ms    remaining: 9.69s
10:     learn: 0.4718225      total: 622ms    remaining: 10.7s
11:     learn: 0.4680437      total: 683ms    remaining: 10.7s
12:     learn: 0.4642761      total: 746ms    remaining: 10.7s
13:     learn: 0.4602688      total: 821ms    remaining: 10.9s
14:     learn: 0.4578809      total: 868ms    remaining: 10.7s
15:     learn: 0.4560893      total: 944ms    remaining: 10.9s
16:     learn: 0.4540956      total: 1.03s    remaining: 11.1s
17:     learn: 0.4524732      total: 1.07s    remaining: 10.8s
18:     learn: 0.4504678      total: 1.12s    remaining: 10.7s
19:     learn: 0.4483253      total: 1.18s    remaining: 10.6s
20:     learn: 0.4469377      total: 1.23s    remaining: 10.5s
21:     learn: 0.4456270      total: 1.29s    remaining: 10.5s
22:     learn: 0.4446328      total: 1.34s    remaining: 10.3s
23:     learn: 0.4431109      total: 1.4s     remaining: 10.3s
24:     learn: 0.4423392      total: 1.47s    remaining: 10.3s
25:     learn: 0.4416576      total: 1.53s    remaining: 10.2s
26:     learn: 0.4409405      total: 1.59s    remaining: 10.2s
27:     learn: 0.4404510      total: 1.66s    remaining: 10.2s
28:     learn: 0.4392349      total: 1.71s    remaining: 10.1s
29:     learn: 0.4383934      total: 1.79s    remaining: 10.1s
30:     learn: 0.4378149      total: 1.84s    remaining: 10s
31:     learn: 0.4375000      total: 1.89s    remaining: 9.9s
32:     learn: 0.4370367      total: 1.94s    remaining: 9.81s
33:     learn: 0.4366432      total: 2s       remaining: 9.76s
34:     learn: 0.4364238      total: 2.07s    remaining: 9.74s
35:     learn: 0.4361406      total: 2.14s    remaining: 9.74s
36:     learn: 0.4356013      total: 2.21s    remaining: 9.72s
37:     learn: 0.4348293      total: 2.27s    remaining: 9.68s
38:     learn: 0.4345591      total: 2.33s    remaining: 9.63s
39:     learn: 0.4340385      total: 2.4s     remaining: 9.62s
40:     learn: 0.4331953      total: 2.45s    remaining: 9.51s
41:     learn: 0.4326935      total: 2.5s     remaining: 9.42s
42:     learn: 0.4320400      total: 2.55s    remaining: 9.31s
43:     learn: 0.4315331      total: 2.61s    remaining: 9.26s
44:     learn: 0.4313746      total: 2.67s    remaining: 9.22s
45:     learn: 0.4311418      total: 2.74s    remaining: 9.18s
46:     learn: 0.4304943      total: 2.82s    remaining: 9.17s
47:     learn: 0.4297510      total: 2.87s    remaining: 9.1s
48:     learn: 0.4295981      total: 2.93s    remaining: 9.04s
49:     learn: 0.4294367      total: 2.98s    remaining: 8.95s
50:     learn: 0.4288849      total: 3.03s    remaining: 8.86s
51:     learn: 0.4286781      total: 3.15s    remaining: 8.98s
52:     learn: 0.4282282      total: 3.23s    remaining: 8.95s
53:     learn: 0.4276173      total: 3.29s    remaining: 8.9s
54:     learn: 0.4271621      total: 3.34s    remaining: 8.81s
55:     learn: 0.4270110      total: 3.39s    remaining: 8.72s
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56:     learn: 0.4262117      total: 3.45s     remaining: 8.66s
57:     learn: 0.4257103      total: 3.51s     remaining: 8.59s
58:     learn: 0.4254285      total: 3.58s     remaining: 8.56s
59:     learn: 0.4246317      total: 3.64s     remaining: 8.5s
60:     learn: 0.4244816      total: 3.69s     remaining: 8.41s
61:     learn: 0.4240017      total: 3.73s     remaining: 8.3s
62:     learn: 0.4234009      total: 3.8s      remaining: 8.26s
63:     learn: 0.4233153      total: 3.86s     remaining: 8.19s
64:     learn: 0.4230536      total: 3.9s      remaining: 8.11s
65:     learn: 0.4228664      total: 3.96s     remaining: 8.04s
66:     learn: 0.4225577      total: 4.02s     remaining: 7.98s
67:     learn: 0.4223778      total: 4.08s     remaining: 7.92s
68:     learn: 0.4222119      total: 4.12s     remaining: 7.82s
69:     learn: 0.4220085      total: 4.16s     remaining: 7.73s
70:     learn: 0.4217485      total: 4.2s      remaining: 7.63s
71:     learn: 0.4213289      total: 4.26s     remaining: 7.58s
72:     learn: 0.4211783      total: 4.32s     remaining: 7.52s
73:     learn: 0.4208699      total: 4.38s     remaining: 7.47s
74:     learn: 0.4207589      total: 4.43s     remaining: 7.38s
75:     learn: 0.4205859      total: 4.49s     remaining: 7.32s
76:     learn: 0.4203727      total: 4.55s     remaining: 7.26s
77:     learn: 0.4202591      total: 4.63s     remaining: 7.24s
78:     learn: 0.4199134      total: 4.68s     remaining: 7.17s
79:     learn: 0.4194933      total: 4.74s     remaining: 7.11s
80:     learn: 0.4193143      total: 4.82s     remaining: 7.08s
81:     learn: 0.4185961      total: 4.91s     remaining: 7.07s
82:     learn: 0.4184808      total: 4.96s     remaining: 6.99s
83:     learn: 0.4181840      total: 5.01s     remaining: 6.92s
84:     learn: 0.4179003      total: 5.07s     remaining: 6.86s
85:     learn: 0.4178369      total: 5.13s     remaining: 6.79s
86:     learn: 0.4176076      total: 5.17s     remaining: 6.72s
87:     learn: 0.4174420      total: 5.24s     remaining: 6.67s
88:     learn: 0.4172925      total: 5.29s     remaining: 6.6s
89:     learn: 0.4172455      total: 5.34s     remaining: 6.53s
90:     learn: 0.4171737      total: 5.39s     remaining: 6.45s
91:     learn: 0.4170050      total: 5.43s     remaining: 6.38s
92:     learn: 0.4167569      total: 5.51s     remaining: 6.34s
93:     learn: 0.4165235      total: 5.58s     remaining: 6.3s
94:     learn: 0.4164697      total: 5.65s     remaining: 6.24s
95:     learn: 0.4162554      total: 5.73s     remaining: 6.2s
96:     learn: 0.4159442      total: 5.79s     remaining: 6.15s
97:     learn: 0.4157541      total: 5.87s     remaining: 6.11s
98:     learn: 0.4156373      total: 5.92s     remaining: 6.04s
99:     learn: 0.4155412      total: 5.98s     remaining: 5.98s
100:    learn: 0.4153689      total: 6.03s     remaining: 5.91s
101:    learn: 0.4151683      total: 6.08s     remaining: 5.84s
102:    learn: 0.4150690      total: 6.16s     remaining: 5.8s
103:    learn: 0.4149084      total: 6.21s     remaining: 5.73s
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104:    learn: 0.4147910      total: 6.25s    remaining: 5.66s
105:    learn: 0.4147104      total: 6.31s    remaining: 5.59s
106:    learn: 0.4146158      total: 6.36s    remaining: 5.53s
107:    learn: 0.4142746      total: 6.45s    remaining: 5.5s
108:    learn: 0.4140403      total: 6.5s     remaining: 5.43s
109:    learn: 0.4137880      total: 6.58s    remaining: 5.39s
110:    learn: 0.4136876      total: 6.65s    remaining: 5.33s
111:    learn: 0.4135227      total: 6.7s     remaining: 5.26s
112:    learn: 0.4129723      total: 6.76s    remaining: 5.2s
113:    learn: 0.4125026      total: 6.8s     remaining: 5.13s
114:    learn: 0.4122137      total: 6.87s    remaining: 5.08s
115:    learn: 0.4117121      total: 6.93s    remaining: 5.02s
116:    learn: 0.4113620      total: 7s       remaining: 4.97s
117:    learn: 0.4110792      total: 7.05s    remaining: 4.9s
118:    learn: 0.4106193      total: 7.12s    remaining: 4.84s
119:    learn: 0.4100854      total: 7.17s    remaining: 4.78s
120:    learn: 0.4096666      total: 7.23s    remaining: 4.72s
121:    learn: 0.4092103      total: 7.28s    remaining: 4.66s
122:    learn: 0.4091247      total: 7.37s    remaining: 4.62s
123:    learn: 0.4090645      total: 7.43s    remaining: 4.55s
124:    learn: 0.4087928      total: 7.49s    remaining: 4.49s
125:    learn: 0.4084994      total: 7.54s    remaining: 4.43s
126:    learn: 0.4084425      total: 7.61s    remaining: 4.38s
127:    learn: 0.4081190      total: 7.66s    remaining: 4.31s
128:    learn: 0.4080674      total: 7.72s    remaining: 4.25s
129:    learn: 0.4076682      total: 7.79s    remaining: 4.19s
130:    learn: 0.4073554      total: 7.85s    remaining: 4.14s
131:    learn: 0.4067820      total: 7.93s    remaining: 4.08s
132:    learn: 0.4066654      total: 7.97s    remaining: 4.02s
133:    learn: 0.4065972      total: 8.07s    remaining: 3.97s
134:    learn: 0.4063792      total: 8.15s    remaining: 3.92s
135:    learn: 0.4061834      total: 8.19s    remaining: 3.85s
136:    learn: 0.4058673      total: 8.24s    remaining: 3.79s
137:    learn: 0.4056145      total: 8.3s     remaining: 3.73s
138:    learn: 0.4054261      total: 8.35s    remaining: 3.66s
139:    learn: 0.4053471      total: 8.41s    remaining: 3.6s
140:    learn: 0.4052469      total: 8.45s    remaining: 3.54s
141:    learn: 0.4050985      total: 8.5s     remaining: 3.47s
142:    learn: 0.4050014      total: 8.54s    remaining: 3.4s
143:    learn: 0.4048631      total: 8.59s    remaining: 3.34s
144:    learn: 0.4046891      total: 8.64s    remaining: 3.28s
145:    learn: 0.4044976      total: 8.7s     remaining: 3.22s
146:    learn: 0.4042004      total: 8.76s    remaining: 3.16s
147:    learn: 0.4040105      total: 8.88s    remaining: 3.12s
148:    learn: 0.4038591      total: 8.93s    remaining: 3.06s
149:    learn: 0.4037994      total: 8.99s    remaining: 3s
150:    learn: 0.4037610      total: 9.03s    remaining: 2.93s
151:    learn: 0.4037119      total: 9.08s    remaining: 2.87s
```

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152:    learn: 0.4036376    total: 9.14s    remaining: 2.81s
153:    learn: 0.4035924    total: 9.2s     remaining: 2.75s
154:    learn: 0.4033258    total: 9.24s    remaining: 2.68s
155:    learn: 0.4028428    total: 9.31s    remaining: 2.63s
156:    learn: 0.4026794    total: 9.36s    remaining: 2.56s
157:    learn: 0.4024790    total: 9.41s    remaining: 2.5s
158:    learn: 0.4022295    total: 9.48s    remaining: 2.44s
159:    learn: 0.4021558    total: 9.54s    remaining: 2.38s
160:    learn: 0.4017662    total: 9.59s    remaining: 2.32s
161:    learn: 0.4016131    total: 9.67s    remaining: 2.27s
162:    learn: 0.4014685    total: 9.72s    remaining: 2.21s
163:    learn: 0.4013671    total: 9.77s    remaining: 2.14s
164:    learn: 0.4012348    total: 9.82s    remaining: 2.08s
165:    learn: 0.4010656    total: 9.87s    remaining: 2.02s
166:    learn: 0.4009699    total: 9.93s    remaining: 1.96s
167:    learn: 0.4004869    total: 9.98s    remaining: 1.9s
168:    learn: 0.4003951    total: 10s      remaining: 1.84s
169:    learn: 0.4003593    total: 10.1s    remaining: 1.78s
170:    learn: 0.4000861    total: 10.1s    remaining: 1.72s
171:    learn: 0.3997956    total: 10.2s    remaining: 1.66s
172:    learn: 0.3995402    total: 10.2s    remaining: 1.6s
173:    learn: 0.3995141    total: 10.3s    remaining: 1.54s
174:    learn: 0.3992663    total: 10.4s    remaining: 1.48s
175:    learn: 0.3991184    total: 10.4s    remaining: 1.42s
176:    learn: 0.3990209    total: 10.5s    remaining: 1.36s
177:    learn: 0.3986964    total: 10.6s    remaining: 1.3s
178:    learn: 0.3986585    total: 10.6s    remaining: 1.25s
179:    learn: 0.3985015    total: 10.7s    remaining: 1.18s
180:    learn: 0.3984420    total: 10.7s    remaining: 1.13s
181:    learn: 0.3983867    total: 10.8s    remaining: 1.06s
182:    learn: 0.3979546    total: 10.8s    remaining: 1.01s
183:    learn: 0.3976847    total: 10.9s    remaining: 947ms
184:    learn: 0.3975756    total: 10.9s    remaining: 887ms
185:    learn: 0.3974080    total: 11s      remaining: 827ms
186:    learn: 0.3973371    total: 11s      remaining: 768ms
187:    learn: 0.3973046    total: 11.1s    remaining: 708ms
188:    learn: 0.3971232    total: 11.2s    remaining: 650ms
189:    learn: 0.3968837    total: 11.2s    remaining: 590ms
190:    learn: 0.3968441    total: 11.3s    remaining: 532ms
191:    learn: 0.3967577    total: 11.4s    remaining: 474ms
192:    learn: 0.3967321    total: 11.4s    remaining: 415ms
193:    learn: 0.3964532    total: 11.5s    remaining: 355ms
194:    learn: 0.3962605    total: 11.5s    remaining: 296ms
195:    learn: 0.3961248    total: 11.6s    remaining: 237ms
196:    learn: 0.3959672    total: 11.7s    remaining: 178ms
197:    learn: 0.3959116    total: 11.7s    remaining: 118ms
198:    learn: 0.3957862    total: 11.8s    remaining: 59.3ms
199:    learn: 0.3955125    total: 11.9s    remaining: 0us
```

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0:      learn: 0.6329660      total: 45.1ms    remaining: 8.96s
1:      learn: 0.5905935      total: 90.8ms    remaining: 8.99s
2:      learn: 0.5604598      total: 148ms     remaining: 9.72s
3:      learn: 0.5347197      total: 192ms     remaining: 9.42s
4:      learn: 0.5203733      total: 241ms     remaining: 9.4s
5:      learn: 0.5067891      total: 281ms     remaining: 9.09s
6:      learn: 0.4962099      total: 347ms     remaining: 9.56s
7:      learn: 0.4891251      total: 434ms     remaining: 10.4s
8:      learn: 0.4836058      total: 522ms     remaining: 11.1s
9:      learn: 0.4775091      total: 573ms     remaining: 10.9s
10:     learn: 0.4730421      total: 658ms     remaining: 11.3s
11:     learn: 0.4679599      total: 727ms     remaining: 11.4s
12:     learn: 0.4644871      total: 773ms     remaining: 11.1s
13:     learn: 0.4613927      total: 841ms     remaining: 11.2s
14:     learn: 0.4584546      total: 890ms     remaining: 11s
15:     learn: 0.4557143      total: 938ms     remaining: 10.8s
16:     learn: 0.4536450      total: 991ms     remaining: 10.7s
17:     learn: 0.4517303      total: 1.04s     remaining: 10.6s
18:     learn: 0.4507895      total: 1.12s     remaining: 10.6s
19:     learn: 0.4491563      total: 1.16s     remaining: 10.5s
20:     learn: 0.4485415      total: 1.21s     remaining: 10.3s
21:     learn: 0.4469032      total: 1.26s     remaining: 10.2s
22:     learn: 0.4462886      total: 1.33s     remaining: 10.3s
23:     learn: 0.4454830      total: 1.39s     remaining: 10.2s
24:     learn: 0.4442309      total: 1.46s     remaining: 10.2s
25:     learn: 0.4436093      total: 1.5s      remaining: 10.1s
26:     learn: 0.4431510      total: 1.55s     remaining: 9.96s
27:     learn: 0.4425171      total: 1.6s      remaining: 9.82s
28:     learn: 0.4415083      total: 1.64s     remaining: 9.7s
29:     learn: 0.4412842      total: 1.71s     remaining: 9.72s
30:     learn: 0.4410261      total: 1.79s     remaining: 9.76s
31:     learn: 0.4404423      total: 1.84s     remaining: 9.67s
32:     learn: 0.4397958      total: 1.89s     remaining: 9.55s
33:     learn: 0.4390135      total: 1.95s     remaining: 9.51s
34:     learn: 0.4386497      total: 2.01s     remaining: 9.48s
35:     learn: 0.4382506      total: 2.07s     remaining: 9.44s
36:     learn: 0.4376366      total: 2.14s     remaining: 9.41s
37:     learn: 0.4370105      total: 2.18s     remaining: 9.3s
38:     learn: 0.4367048      total: 2.26s     remaining: 9.32s
39:     learn: 0.4363300      total: 2.3s      remaining: 9.21s
40:     learn: 0.4356155      total: 2.35s     remaining: 9.12s
41:     learn: 0.4349263      total: 2.4s      remaining: 9.02s
42:     learn: 0.4349162      total: 2.41s     remaining: 8.81s
43:     learn: 0.4346975      total: 2.46s     remaining: 8.72s
44:     learn: 0.4346975      total: 2.5s      remaining: 8.6s
45:     learn: 0.4342441      total: 2.55s     remaining: 8.53s
46:     learn: 0.4340251      total: 2.62s     remaining: 8.52s
47:     learn: 0.4334732      total: 2.69s     remaining: 8.51s
```

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48:     learn: 0.4329696      total: 2.73s     remaining: 8.42s
49:     learn: 0.4327804      total: 2.8s      remaining: 8.39s
50:     learn: 0.4325979      total: 2.86s     remaining: 8.35s
51:     learn: 0.4323985      total: 2.92s     remaining: 8.32s
52:     learn: 0.4323056      total: 2.98s     remaining: 8.26s
53:     learn: 0.4318717      total: 3.03s     remaining: 8.19s
54:     learn: 0.4314784      total: 3.12s     remaining: 8.21s
55:     learn: 0.4313739      total: 3.17s     remaining: 8.14s
56:     learn: 0.4313129      total: 3.23s     remaining: 8.09s
57:     learn: 0.4311503      total: 3.27s     remaining: 8s
58:     learn: 0.4309175      total: 3.32s     remaining: 7.93s
59:     learn: 0.4308315      total: 3.38s     remaining: 7.89s
60:     learn: 0.4307197      total: 3.43s     remaining: 7.82s
61:     learn: 0.4304962      total: 3.49s     remaining: 7.78s
62:     learn: 0.4302409      total: 3.55s     remaining: 7.73s
63:     learn: 0.4297442      total: 3.6s      remaining: 7.64s
64:     learn: 0.4287452      total: 3.65s     remaining: 7.57s
65:     learn: 0.4285987      total: 3.71s     remaining: 7.53s
66:     learn: 0.4284088      total: 3.75s     remaining: 7.45s
67:     learn: 0.4283136      total: 3.8s      remaining: 7.38s
68:     learn: 0.4281730      total: 3.85s     remaining: 7.3s
69:     learn: 0.4281730      total: 3.86s     remaining: 7.17s
70:     learn: 0.4280297      total: 3.92s     remaining: 7.13s
71:     learn: 0.4277337      total: 3.98s     remaining: 7.07s
72:     learn: 0.4273951      total: 4.04s     remaining: 7.03s
73:     learn: 0.4269847      total: 4.09s     remaining: 6.97s
74:     learn: 0.4268806      total: 4.16s     remaining: 6.93s
75:     learn: 0.4266128      total: 4.24s     remaining: 6.92s
76:     learn: 0.4265626      total: 4.29s     remaining: 6.86s
77:     learn: 0.4264119      total: 4.34s     remaining: 6.8s
78:     learn: 0.4260477      total: 4.39s     remaining: 6.73s
79:     learn: 0.4258744      total: 4.45s     remaining: 6.67s
80:     learn: 0.4257074      total: 4.49s     remaining: 6.59s
81:     learn: 0.4252889      total: 4.57s     remaining: 6.57s
82:     learn: 0.4250691      total: 4.62s     remaining: 6.52s
83:     learn: 0.4247832      total: 4.69s     remaining: 6.48s
84:     learn: 0.4244390      total: 4.75s     remaining: 6.42s
85:     learn: 0.4243407      total: 4.81s     remaining: 6.38s
86:     learn: 0.4240748      total: 4.88s     remaining: 6.34s
87:     learn: 0.4238292      total: 4.93s     remaining: 6.28s
88:     learn: 0.4230070      total: 4.98s     remaining: 6.21s
89:     learn: 0.4224535      total: 5.05s     remaining: 6.17s
90:     learn: 0.4221486      total: 5.1s      remaining: 6.11s
91:     learn: 0.4220328      total: 5.15s     remaining: 6.05s
92:     learn: 0.4216435      total: 5.2s      remaining: 5.99s
93:     learn: 0.4214832      total: 5.27s     remaining: 5.94s
94:     learn: 0.4213031      total: 5.34s     remaining: 5.91s
95:     learn: 0.4207682      total: 5.4s      remaining: 5.85s
```

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96:     learn: 0.4200604     total: 5.45s     remaining: 5.79s
97:     learn: 0.4199456     total: 5.51s     remaining: 5.74s
98:     learn: 0.4197949     total: 5.61s     remaining: 5.73s
99:     learn: 0.4196377     total: 5.67s     remaining: 5.67s
100:    learn: 0.4196371     total: 5.71s     remaining: 5.6s
101:    learn: 0.4195724     total: 5.76s     remaining: 5.53s
102:    learn: 0.4193821     total: 5.81s     remaining: 5.48s
103:    learn: 0.4189793     total: 5.87s     remaining: 5.42s
104:    learn: 0.4189788     total: 5.91s     remaining: 5.34s
105:    learn: 0.4187444     total: 5.97s     remaining: 5.29s
106:    learn: 0.4184317     total: 6.02s     remaining: 5.23s
107:    learn: 0.4183887     total: 6.07s     remaining: 5.17s
108:    learn: 0.4181816     total: 6.12s     remaining: 5.11s
109:    learn: 0.4177185     total: 6.19s     remaining: 5.07s
110:    learn: 0.4174948     total: 6.25s     remaining: 5.01s
111:    learn: 0.4173744     total: 6.29s     remaining: 4.94s
112:    learn: 0.4170123     total: 6.34s     remaining: 4.88s
113:    learn: 0.4165247     total: 6.41s     remaining: 4.84s
114:    learn: 0.4162719     total: 6.46s     remaining: 4.78s
115:    learn: 0.4161553     total: 6.52s     remaining: 4.72s
116:    learn: 0.4160655     total: 6.59s     remaining: 4.68s
117:    learn: 0.4159493     total: 6.67s     remaining: 4.63s
118:    learn: 0.4157786     total: 6.71s     remaining: 4.57s
119:    learn: 0.4156559     total: 6.77s     remaining: 4.51s
120:    learn: 0.4152857     total: 6.82s     remaining: 4.45s
121:    learn: 0.4146993     total: 6.88s     remaining: 4.4s
122:    learn: 0.4145039     total: 6.95s     remaining: 4.35s
123:    learn: 0.4144882     total: 6.99s     remaining: 4.28s
124:    learn: 0.4144146     total: 7.04s     remaining: 4.23s
125:    learn: 0.4142752     total: 7.12s     remaining: 4.18s
126:    learn: 0.4138323     total: 7.17s     remaining: 4.12s
127:    learn: 0.4135862     total: 7.24s     remaining: 4.07s
128:    learn: 0.4132925     total: 7.31s     remaining: 4.02s
129:    learn: 0.4132893     total: 7.35s     remaining: 3.96s
130:    learn: 0.4131559     total: 7.42s     remaining: 3.91s
131:    learn: 0.4129803     total: 7.47s     remaining: 3.85s
132:    learn: 0.4127292     total: 7.53s     remaining: 3.79s
133:    learn: 0.4125508     total: 7.57s     remaining: 3.73s
134:    learn: 0.4124192     total: 7.62s     remaining: 3.67s
135:    learn: 0.4121265     total: 7.68s     remaining: 3.61s
136:    learn: 0.4119062     total: 7.74s     remaining: 3.56s
137:    learn: 0.4117811     total: 7.8s      remaining: 3.5s
138:    learn: 0.4116321     total: 7.84s     remaining: 3.44s
139:    learn: 0.4112367     total: 7.91s     remaining: 3.39s
140:    learn: 0.4111487     total: 7.96s     remaining: 3.33s
141:    learn: 0.4111365     total: 8s        remaining: 3.27s
142:    learn: 0.4111257     total: 8.04s     remaining: 3.21s
143:    learn: 0.4108982     total: 8.12s     remaining: 3.16s
```

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144:    learn: 0.4103740    total: 8.17s    remaining: 3.1s
145:    learn: 0.4101549    total: 8.22s    remaining: 3.04s
146:    learn: 0.4100153    total: 8.29s    remaining: 2.99s
147:    learn: 0.4098966    total: 8.36s    remaining: 2.94s
148:    learn: 0.4096783    total: 8.43s    remaining: 2.88s
149:    learn: 0.4095130    total: 8.52s    remaining: 2.84s
150:    learn: 0.4093292    total: 8.57s    remaining: 2.78s
151:    learn: 0.4092384    total: 8.63s    remaining: 2.72s
152:    learn: 0.4090484    total: 8.69s    remaining: 2.67s
153:    learn: 0.4085398    total: 8.75s    remaining: 2.61s
154:    learn: 0.4082702    total: 8.81s    remaining: 2.56s
155:    learn: 0.4079662    total: 8.86s    remaining: 2.5s
156:    learn: 0.4075915    total: 8.91s    remaining: 2.44s
157:    learn: 0.4075186    total: 8.95s    remaining: 2.38s
158:    learn: 0.4074471    total: 9s       remaining: 2.32s
159:    learn: 0.4071894    total: 9.06s    remaining: 2.27s
160:    learn: 0.4069814    total: 9.11s    remaining: 2.21s
161:    learn: 0.4068349    total: 9.15s    remaining: 2.15s
162:    learn: 0.4067645    total: 9.21s    remaining: 2.09s
163:    learn: 0.4066485    total: 9.26s    remaining: 2.03s
164:    learn: 0.4064902    total: 9.3s     remaining: 1.97s
165:    learn: 0.4063472    total: 9.38s    remaining: 1.92s
166:    learn: 0.4062294    total: 9.43s    remaining: 1.86s
167:    learn: 0.4061470    total: 9.48s    remaining: 1.8s
168:    learn: 0.4060143    total: 9.53s    remaining: 1.75s
169:    learn: 0.4058504    total: 9.58s    remaining: 1.69s
170:    learn: 0.4056934    total: 9.63s    remaining: 1.63s
171:    learn: 0.4056740    total: 9.68s    remaining: 1.58s
172:    learn: 0.4053170    total: 9.74s    remaining: 1.52s
173:    learn: 0.4051029    total: 9.78s    remaining: 1.46s
174:    learn: 0.4050968    total: 9.83s    remaining: 1.4s
175:    learn: 0.4049332    total: 9.88s    remaining: 1.35s
176:    learn: 0.4049240    total: 9.93s    remaining: 1.29s
177:    learn: 0.4047081    total: 9.99s    remaining: 1.24s
178:    learn: 0.4045006    total: 10s      remaining: 1.18s
179:    learn: 0.4042690    total: 10.1s    remaining: 1.12s
180:    learn: 0.4040966    total: 10.1s    remaining: 1.06s
181:    learn: 0.4039045    total: 10.2s    remaining: 1.01s
182:    learn: 0.4037127    total: 10.3s    remaining: 953ms
183:    learn: 0.4035868    total: 10.3s    remaining: 897ms
184:    learn: 0.4035679    total: 10.4s    remaining: 840ms
185:    learn: 0.4034552    total: 10.4s    remaining: 785ms
186:    learn: 0.4033574    total: 10.5s    remaining: 728ms
187:    learn: 0.4032268    total: 10.5s    remaining: 673ms
188:    learn: 0.4031337    total: 10.6s    remaining: 617ms
189:    learn: 0.4027689    total: 10.6s    remaining: 560ms
190:    learn: 0.4027511    total: 10.7s    remaining: 504ms
191:    learn: 0.4025981    total: 10.7s    remaining: 448ms
```

```
192:     learn: 0.4025176        total: 10.8s    remaining: 391ms
193:     learn: 0.4024322        total: 10.8s    remaining: 335ms
194:     learn: 0.4022926        total: 10.9s    remaining: 279ms
195:     learn: 0.4021374        total: 10.9s    remaining: 223ms
196:     learn: 0.4019244        total: 11.1s    remaining: 168ms
197:     learn: 0.4017841        total: 11.1s    remaining: 112ms
198:     learn: 0.4016962        total: 11.2s    remaining: 56.1ms
199:     learn: 0.4014758        total: 11.2s    remaining: 0us
```
Mean train f1-score of data (CV) 5 is : 0.8190183085273142
Mean test f1-score of data (CV) 5 is : 0.8049857622183177

Shape of data 6 is :
(27303, 10)
Distribution of 6 is :
Yes   14102
No   13201
Name: TIMELY_RESPONSE, dtype: int64

<IPython.core.display.HTML object>

MetricVisualizer(layout=Layout(align_self='stretch', height='500px'))

Train f1_score [Yes]: for data 6 is : 0.8116233270366947
Train f1_score [No]: for data 6 is : 0.819041735840315

	precision	recall	f1-score	support
No	0.77	0.86	0.81	924
Yes	0.85	0.77	0.81	988
accuracy			0.81	1912
macro avg	0.81	0.81	0.81	1912
weighted avg	0.82	0.81	0.81	1912
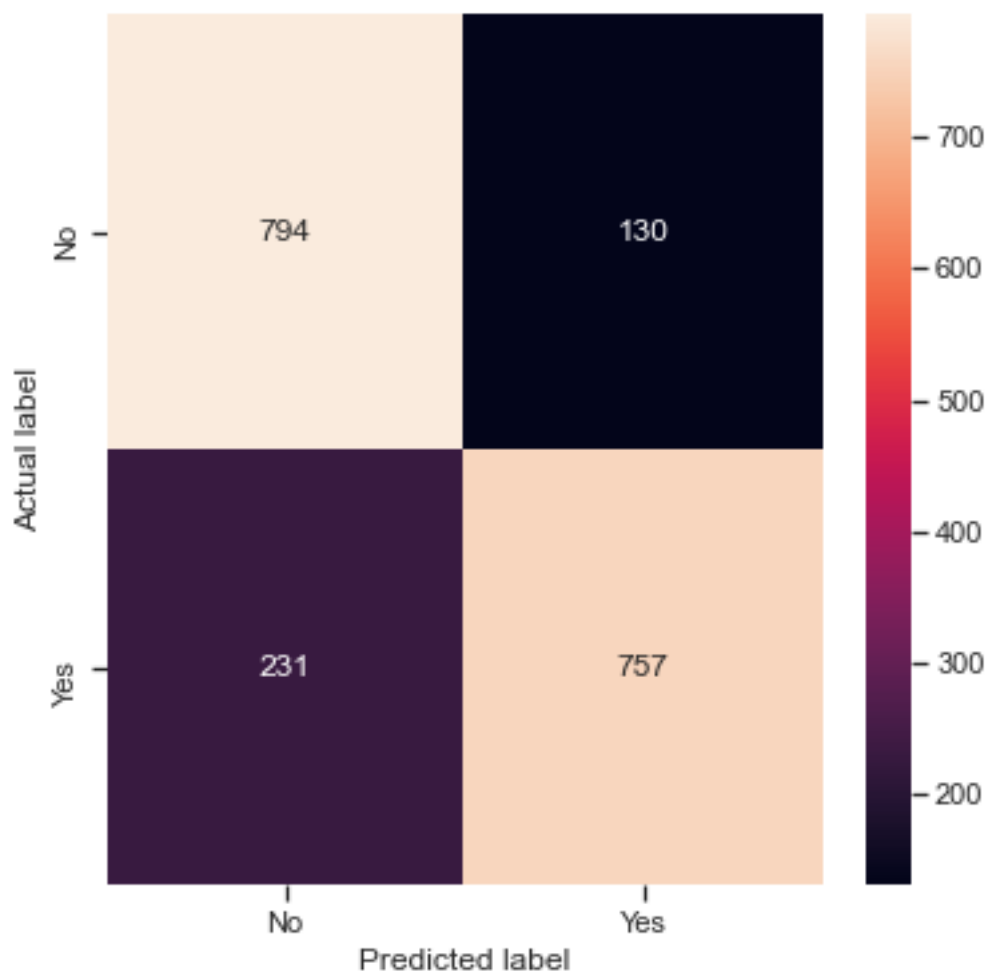
Cross validation result for data 6 is :

```
0:      learn: 0.6353847      total: 54.9ms    remaining: 10.9s
1:      learn: 0.5985333      total: 117ms     remaining: 11.6s
2:      learn: 0.5659092      total: 175ms     remaining: 11.5s
3:      learn: 0.5437285      total: 227ms     remaining: 11.1s
4:      learn: 0.5264725      total: 294ms     remaining: 11.4s
5:      learn: 0.5133450      total: 361ms     remaining: 11.7s
6:      learn: 0.4975148      total: 432ms     remaining: 11.9s
7:      learn: 0.4886355      total: 476ms     remaining: 11.4s
8:      learn: 0.4799142      total: 526ms     remaining: 11.2s
9:      learn: 0.4736644      total: 598ms     remaining: 11.4s
10:     learn: 0.4688724      total: 651ms     remaining: 11.2s
11:     learn: 0.4629778      total: 700ms     remaining: 11s
12:     learn: 0.4592002      total: 750ms     remaining: 10.8s
13:     learn: 0.4568139      total: 804ms     remaining: 10.7s
14:     learn: 0.4541402      total: 863ms     remaining: 10.6s
15:     learn: 0.4515045      total: 919ms     remaining: 10.6s
```

```
16:    learn: 0.4502274    total: 1.01s    remaining: 10.9s
17:    learn: 0.4488142    total: 1.06s    remaining: 10.8s
18:    learn: 0.4471996    total: 1.11s    remaining: 10.6s
19:    learn: 0.4456870    total: 1.18s    remaining: 10.7s
20:    learn: 0.4444117    total: 1.24s    remaining: 10.6s
21:    learn: 0.4434893    total: 1.3s     remaining: 10.5s
22:    learn: 0.4424877    total: 1.36s    remaining: 10.5s
23:    learn: 0.4408566    total: 1.42s    remaining: 10.4s
24:    learn: 0.4398222    total: 1.49s    remaining: 10.4s
25:    learn: 0.4395317    total: 1.57s    remaining: 10.5s
26:    learn: 0.4386755    total: 1.63s    remaining: 10.5s
27:    learn: 0.4384355    total: 1.7s     remaining: 10.4s
28:    learn: 0.4376663    total: 1.78s    remaining: 10.5s
29:    learn: 0.4363577    total: 1.84s    remaining: 10.5s
30:    learn: 0.4359409    total: 1.91s    remaining: 10.4s
31:    learn: 0.4351307    total: 2s       remaining: 10.5s
32:    learn: 0.4347727    total: 2.07s    remaining: 10.5s
33:    learn: 0.4342163    total: 2.13s    remaining: 10.4s
34:    learn: 0.4336477    total: 2.2s     remaining: 10.4s
35:    learn: 0.4333368    total: 2.29s    remaining: 10.4s
36:    learn: 0.4324369    total: 2.35s    remaining: 10.4s
37:    learn: 0.4319016    total: 2.42s    remaining: 10.3s
38:    learn: 0.4317334    total: 2.48s    remaining: 10.2s
39:    learn: 0.4313158    total: 2.55s    remaining: 10.2s
40:    learn: 0.4308567    total: 2.62s    remaining: 10.1s
41:    learn: 0.4305137    total: 2.68s    remaining: 10.1s
42:    learn: 0.4303636    total: 2.76s    remaining: 10.1s
43:    learn: 0.4301179    total: 2.84s    remaining: 10.1s
44:    learn: 0.4298786    total: 2.92s    remaining: 10.1s
45:    learn: 0.4296241    total: 3.05s    remaining: 10.2s
46:    learn: 0.4295490    total: 3.17s    remaining: 10.3s
47:    learn: 0.4290801    total: 3.25s    remaining: 10.3s
48:    learn: 0.4287934    total: 3.32s    remaining: 10.2s
49:    learn: 0.4284046    total: 3.41s    remaining: 10.2s
50:    learn: 0.4281486    total: 3.48s    remaining: 10.2s
51:    learn: 0.4279418    total: 3.56s    remaining: 10.1s
52:    learn: 0.4277179    total: 3.63s    remaining: 10.1s
53:    learn: 0.4275082    total: 3.71s    remaining: 10s
54:    learn: 0.4273292    total: 3.77s    remaining: 9.95s
55:    learn: 0.4269612    total: 3.84s    remaining: 9.87s
56:    learn: 0.4269611    total: 3.86s    remaining: 9.69s
57:    learn: 0.4263561    total: 3.93s    remaining: 9.63s
58:    learn: 0.4258631    total: 4s       remaining: 9.55s
59:    learn: 0.4255959    total: 4.08s    remaining: 9.52s
60:    learn: 0.4255263    total: 4.16s    remaining: 9.49s
61:    learn: 0.4251543    total: 4.23s    remaining: 9.42s
62:    learn: 0.4247490    total: 4.32s    remaining: 9.39s
63:    learn: 0.4246482    total: 4.38s    remaining: 9.3s
```

```
64:      learn: 0.4245122      total: 4.44s      remaining: 9.22s
65:      learn: 0.4242132      total: 4.51s      remaining: 9.15s
66:      learn: 0.4240716      total: 4.61s      remaining: 9.15s
67:      learn: 0.4237461      total: 4.68s      remaining: 9.08s
68:      learn: 0.4236304      total: 4.74s      remaining: 9.01s
69:      learn: 0.4231373      total: 4.81s      remaining: 8.93s
70:      learn: 0.4227760      total: 4.87s      remaining: 8.85s
71:      learn: 0.4224279      total: 4.94s      remaining: 8.78s
72:      learn: 0.4222688      total: 5.01s      remaining: 8.71s
73:      learn: 0.4219568      total: 5.07s      remaining: 8.63s
74:      learn: 0.4219518      total: 5.11s      remaining: 8.52s
75:      learn: 0.4216704      total: 5.17s      remaining: 8.44s
76:      learn: 0.4216704      total: 5.21s      remaining: 8.32s
77:      learn: 0.4215139      total: 5.28s      remaining: 8.25s
78:      learn: 0.4213973      total: 5.34s      remaining: 8.18s
79:      learn: 0.4212999      total: 5.41s      remaining: 8.12s
80:      learn: 0.4211719      total: 5.48s      remaining: 8.05s
81:      learn: 0.4210386      total: 5.56s      remaining: 8s
82:      learn: 0.4206612      total: 5.62s      remaining: 7.92s
83:      learn: 0.4203308      total: 5.7s       remaining: 7.87s
84:      learn: 0.4199001      total: 5.77s      remaining: 7.81s
85:      learn: 0.4195129      total: 5.84s      remaining: 7.75s
86:      learn: 0.4193337      total: 5.92s      remaining: 7.68s
87:      learn: 0.4188938      total: 5.98s      remaining: 7.62s
88:      learn: 0.4185073      total: 6.06s      remaining: 7.56s
89:      learn: 0.4184272      total: 6.12s      remaining: 7.48s
90:      learn: 0.4183637      total: 6.2s       remaining: 7.42s
91:      learn: 0.4179768      total: 6.28s      remaining: 7.37s
92:      learn: 0.4177582      total: 6.36s      remaining: 7.31s
93:      learn: 0.4170649      total: 6.43s      remaining: 7.25s
94:      learn: 0.4168412      total: 6.51s      remaining: 7.2s
95:      learn: 0.4164965      total: 6.58s      remaining: 7.12s
96:      learn: 0.4164371      total: 6.64s      remaining: 7.05s
97:      learn: 0.4161230      total: 6.71s      remaining: 6.99s
98:      learn: 0.4157531      total: 6.79s      remaining: 6.92s
99:      learn: 0.4154156      total: 6.86s      remaining: 6.86s
100:     learn: 0.4152798      total: 6.93s      remaining: 6.8s
101:     learn: 0.4151699      total: 7.01s      remaining: 6.74s
102:     learn: 0.4148864      total: 7.09s      remaining: 6.68s
103:     learn: 0.4146921      total: 7.16s      remaining: 6.61s
104:     learn: 0.4143650      total: 7.23s      remaining: 6.54s
105:     learn: 0.4142480      total: 7.31s      remaining: 6.48s
106:     learn: 0.4137403      total: 7.39s      remaining: 6.42s
107:     learn: 0.4130729      total: 7.46s      remaining: 6.36s
108:     learn: 0.4127669      total: 7.53s      remaining: 6.29s
109:     learn: 0.4125887      total: 7.6s       remaining: 6.22s
110:     learn: 0.4124751      total: 7.69s      remaining: 6.17s
111:     learn: 0.4123807      total: 7.76s      remaining: 6.09s
```

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112:    learn: 0.4123636    total: 7.83s    remaining: 6.03s
113:    learn: 0.4122358    total: 7.91s    remaining: 5.97s
114:    learn: 0.4120894    total: 7.98s    remaining: 5.9s
115:    learn: 0.4116704    total: 8.05s    remaining: 5.83s
116:    learn: 0.4115239    total: 8.17s    remaining: 5.79s
117:    learn: 0.4110238    total: 8.24s    remaining: 5.72s
118:    learn: 0.4107741    total: 8.34s    remaining: 5.68s
119:    learn: 0.4106147    total: 8.43s    remaining: 5.62s
120:    learn: 0.4103902    total: 8.5s     remaining: 5.55s
121:    learn: 0.4102234    total: 8.59s    remaining: 5.49s
122:    learn: 0.4099852    total: 8.65s    remaining: 5.42s
123:    learn: 0.4096682    total: 8.72s    remaining: 5.34s
124:    learn: 0.4093538    total: 8.8s     remaining: 5.28s
125:    learn: 0.4092013    total: 8.86s    remaining: 5.2s
126:    learn: 0.4088091    total: 8.94s    remaining: 5.14s
127:    learn: 0.4087017    total: 9s       remaining: 5.06s
128:    learn: 0.4085990    total: 9.08s    remaining: 5s
129:    learn: 0.4083527    total: 9.14s    remaining: 4.92s
130:    learn: 0.4080709    total: 9.22s    remaining: 4.86s
131:    learn: 0.4079617    total: 9.33s    remaining: 4.8s
132:    learn: 0.4077290    total: 9.4s     remaining: 4.73s
133:    learn: 0.4075423    total: 9.45s    remaining: 4.66s
134:    learn: 0.4074880    total: 9.54s    remaining: 4.59s
135:    learn: 0.4072882    total: 9.6s     remaining: 4.52s
136:    learn: 0.4071307    total: 9.68s    remaining: 4.45s
137:    learn: 0.4067513    total: 9.74s    remaining: 4.38s
138:    learn: 0.4065433    total: 9.8s     remaining: 4.3s
139:    learn: 0.4061865    total: 9.89s    remaining: 4.24s
140:    learn: 0.4059242    total: 9.97s    remaining: 4.17s
141:    learn: 0.4057269    total: 10s      remaining: 4.1s
142:    learn: 0.4053946    total: 10.1s    remaining: 4.03s
143:    learn: 0.4050582    total: 10.2s    remaining: 3.96s
144:    learn: 0.4049113    total: 10.2s    remaining: 3.88s
145:    learn: 0.4047689    total: 10.3s    remaining: 3.81s
146:    learn: 0.4045248    total: 10.4s    remaining: 3.75s
147:    learn: 0.4044947    total: 10.5s    remaining: 3.68s
148:    learn: 0.4044125    total: 10.5s    remaining: 3.61s
149:    learn: 0.4040878    total: 10.6s    remaining: 3.54s
150:    learn: 0.4036326    total: 10.7s    remaining: 3.47s
151:    learn: 0.4035332    total: 10.8s    remaining: 3.4s
152:    learn: 0.4032650    total: 10.8s    remaining: 3.33s
153:    learn: 0.4031604    total: 10.9s    remaining: 3.26s
154:    learn: 0.4028239    total: 11s      remaining: 3.19s
155:    learn: 0.4026756    total: 11s      remaining: 3.12s
156:    learn: 0.4025202    total: 11.1s    remaining: 3.04s
157:    learn: 0.4024807    total: 11.2s    remaining: 2.97s
158:    learn: 0.4024120    total: 11.3s    remaining: 2.9s
159:    learn: 0.4023636    total: 11.3s    remaining: 2.83s
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160:    learn: 0.4022626    total: 11.4s    remaining: 2.76s
161:    learn: 0.4020652    total: 11.5s    remaining: 2.69s
162:    learn: 0.4018898    total: 11.5s    remaining: 2.62s
163:    learn: 0.4018622    total: 11.6s    remaining: 2.54s
164:    learn: 0.4016028    total: 11.7s    remaining: 2.47s
165:    learn: 0.4013525    total: 11.7s    remaining: 2.4s
166:    learn: 0.4012357    total: 11.8s    remaining: 2.33s
167:    learn: 0.4010434    total: 11.8s    remaining: 2.26s
168:    learn: 0.4007728    total: 11.9s    remaining: 2.18s
169:    learn: 0.4007113    total: 12s      remaining: 2.11s
170:    learn: 0.4005783    total: 12s      remaining: 2.04s
171:    learn: 0.4003785    total: 12.1s    remaining: 1.97s
172:    learn: 0.4001116    total: 12.2s    remaining: 1.9s
173:    learn: 0.4000420    total: 12.2s    remaining: 1.83s
174:    learn: 0.3997762    total: 12.3s    remaining: 1.76s
175:    learn: 0.3997354    total: 12.4s    remaining: 1.69s
176:    learn: 0.3996766    total: 12.4s    remaining: 1.62s
177:    learn: 0.3995311    total: 12.5s    remaining: 1.54s
178:    learn: 0.3994758    total: 12.6s    remaining: 1.48s
179:    learn: 0.3994136    total: 12.6s    remaining: 1.4s
180:    learn: 0.3993067    total: 12.7s    remaining: 1.33s
181:    learn: 0.3991951    total: 12.8s    remaining: 1.26s
182:    learn: 0.3990085    total: 12.9s    remaining: 1.2s
183:    learn: 0.3989357    total: 12.9s    remaining: 1.12s
184:    learn: 0.3987855    total: 13s      remaining: 1.05s
185:    learn: 0.3986345    total: 13.1s    remaining: 985ms
186:    learn: 0.3984674    total: 13.2s    remaining: 914ms
187:    learn: 0.3984062    total: 13.2s    remaining: 844ms
188:    learn: 0.3981981    total: 13.3s    remaining: 774ms
189:    learn: 0.3980043    total: 13.4s    remaining: 703ms
190:    learn: 0.3977790    total: 13.5s    remaining: 634ms
191:    learn: 0.3977239    total: 13.5s    remaining: 563ms
192:    learn: 0.3976863    total: 13.6s    remaining: 493ms
193:    learn: 0.3973467    total: 13.7s    remaining: 423ms
194:    learn: 0.3972865    total: 13.7s    remaining: 352ms
195:    learn: 0.3971736    total: 13.8s    remaining: 282ms
196:    learn: 0.3969988    total: 13.9s    remaining: 211ms
197:    learn: 0.3967796    total: 13.9s    remaining: 141ms
198:    learn: 0.3966764    total: 14s      remaining: 70.4ms
199:    learn: 0.3966518    total: 14.1s    remaining: 0us
0:      learn: 0.6344851    total: 68.3ms   remaining: 13.6s
1:      learn: 0.5905340    total: 125ms    remaining: 12.4s
2:      learn: 0.5627297    total: 219ms    remaining: 14.4s
3:      learn: 0.5452467    total: 275ms    remaining: 13.5s
4:      learn: 0.5250021    total: 333ms    remaining: 13s
5:      learn: 0.5135972    total: 377ms    remaining: 12.2s
6:      learn: 0.5034886    total: 435ms    remaining: 12s
7:      learn: 0.4942478    total: 514ms    remaining: 12.3s
```

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8:        learn: 0.4851488        total: 581ms       remaining: 12.3s
9:        learn: 0.4786515        total: 661ms       remaining: 12.6s
10:       learn: 0.4744611        total: 725ms       remaining: 12.5s
11:       learn: 0.4697500        total: 813ms       remaining: 12.7s
12:       learn: 0.4658767        total: 865ms       remaining: 12.4s
13:       learn: 0.4611415        total: 923ms       remaining: 12.3s
14:       learn: 0.4587732        total: 998ms       remaining: 12.3s
15:       learn: 0.4562078        total: 1.08s       remaining: 12.4s
16:       learn: 0.4542105        total: 1.14s       remaining: 12.2s
17:       learn: 0.4524416        total: 1.22s       remaining: 12.3s
18:       learn: 0.4506911        total: 1.3s        remaining: 12.4s
19:       learn: 0.4491011        total: 1.39s       remaining: 12.5s
20:       learn: 0.4479922        total: 1.49s       remaining: 12.7s
21:       learn: 0.4465794        total: 1.56s       remaining: 12.6s
22:       learn: 0.4454737        total: 1.64s       remaining: 12.6s
23:       learn: 0.4444616        total: 1.71s       remaining: 12.5s
24:       learn: 0.4426143        total: 1.79s       remaining: 12.5s
25:       learn: 0.4416487        total: 1.86s       remaining: 12.4s
26:       learn: 0.4411409        total: 1.93s       remaining: 12.4s
27:       learn: 0.4399904        total: 2s          remaining: 12.3s
28:       learn: 0.4389927        total: 2.11s       remaining: 12.5s
29:       learn: 0.4380667        total: 2.22s       remaining: 12.6s
30:       learn: 0.4374688        total: 2.3s        remaining: 12.6s
31:       learn: 0.4367471        total: 2.39s       remaining: 12.6s
32:       learn: 0.4362970        total: 2.46s       remaining: 12.5s
33:       learn: 0.4361018        total: 2.53s       remaining: 12.3s
34:       learn: 0.4356688        total: 2.61s       remaining: 12.3s
35:       learn: 0.4351078        total: 2.68s       remaining: 12.2s
36:       learn: 0.4345957        total: 2.75s       remaining: 12.1s
37:       learn: 0.4343681        total: 2.83s       remaining: 12.1s
38:       learn: 0.4338001        total: 2.89s       remaining: 11.9s
39:       learn: 0.4332368        total: 2.98s       remaining: 11.9s
40:       learn: 0.4330416        total: 3.06s       remaining: 11.9s
41:       learn: 0.4328601        total: 3.12s       remaining: 11.8s
42:       learn: 0.4322715        total: 3.19s       remaining: 11.7s
43:       learn: 0.4320172        total: 3.27s       remaining: 11.6s
44:       learn: 0.4315326        total: 3.34s       remaining: 11.5s
45:       learn: 0.4312891        total: 3.42s       remaining: 11.5s
46:       learn: 0.4309987        total: 3.5s        remaining: 11.4s
47:       learn: 0.4307818        total: 3.58s       remaining: 11.3s
48:       learn: 0.4305800        total: 3.65s       remaining: 11.3s
49:       learn: 0.4303494        total: 3.72s       remaining: 11.2s
50:       learn: 0.4300051        total: 3.79s       remaining: 11.1s
51:       learn: 0.4294990        total: 3.85s       remaining: 11s
52:       learn: 0.4293091        total: 3.92s       remaining: 10.9s
53:       learn: 0.4291388        total: 3.98s       remaining: 10.8s
54:       learn: 0.4289191        total: 4.05s       remaining: 10.7s
55:       learn: 0.4285492        total: 4.19s       remaining: 10.8s
```

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56:     learn: 0.4282210     total: 4.28s     remaining: 10.7s
57:     learn: 0.4279906     total: 4.36s     remaining: 10.7s
58:     learn: 0.4279469     total: 4.43s     remaining: 10.6s
59:     learn: 0.4278541     total: 4.49s     remaining: 10.5s
60:     learn: 0.4274410     total: 4.55s     remaining: 10.4s
61:     learn: 0.4271707     total: 4.62s     remaining: 10.3s
62:     learn: 0.4266519     total: 4.71s     remaining: 10.2s
63:     learn: 0.4263033     total: 4.79s     remaining: 10.2s
64:     learn: 0.4259045     total: 4.85s     remaining: 10.1s
65:     learn: 0.4259022     total: 4.88s     remaining: 9.91s
66:     learn: 0.4256848     total: 4.94s     remaining: 9.81s
67:     learn: 0.4255693     total: 5.02s     remaining: 9.75s
68:     learn: 0.4255654     total: 5.05s     remaining: 9.58s
69:     learn: 0.4253906     total: 5.13s     remaining: 9.53s
70:     learn: 0.4251660     total: 5.2s      remaining: 9.45s
71:     learn: 0.4250436     total: 5.26s     remaining: 9.35s
72:     learn: 0.4248801     total: 5.33s     remaining: 9.27s
73:     learn: 0.4246163     total: 5.39s     remaining: 9.18s
74:     learn: 0.4244881     total: 5.46s     remaining: 9.09s
75:     learn: 0.4242682     total: 5.52s     remaining: 9s
76:     learn: 0.4241911     total: 5.58s     remaining: 8.91s
77:     learn: 0.4241535     total: 5.64s     remaining: 8.83s
78:     learn: 0.4240281     total: 5.71s     remaining: 8.75s
79:     learn: 0.4238856     total: 5.83s     remaining: 8.74s
80:     learn: 0.4235391     total: 5.91s     remaining: 8.68s
81:     learn: 0.4233315     total: 5.98s     remaining: 8.61s
82:     learn: 0.4231942     total: 6.04s     remaining: 8.52s
83:     learn: 0.4230495     total: 6.11s     remaining: 8.44s
84:     learn: 0.4228869     total: 6.17s     remaining: 8.35s
85:     learn: 0.4225412     total: 6.25s     remaining: 8.29s
86:     learn: 0.4225059     total: 6.32s     remaining: 8.21s
87:     learn: 0.4224790     total: 6.38s     remaining: 8.12s
88:     learn: 0.4215246     total: 6.45s     remaining: 8.04s
89:     learn: 0.4208678     total: 6.53s     remaining: 7.98s
90:     learn: 0.4205193     total: 6.6s      remaining: 7.9s
91:     learn: 0.4198676     total: 6.66s     remaining: 7.82s
92:     learn: 0.4195763     total: 6.74s     remaining: 7.75s
93:     learn: 0.4195238     total: 6.8s      remaining: 7.67s
94:     learn: 0.4192817     total: 6.88s     remaining: 7.61s
95:     learn: 0.4184520     total: 6.95s     remaining: 7.53s
96:     learn: 0.4182960     total: 7.01s     remaining: 7.45s
97:     learn: 0.4175578     total: 7.07s     remaining: 7.36s
98:     learn: 0.4172000     total: 7.14s     remaining: 7.28s
99:     learn: 0.4171807     total: 7.2s      remaining: 7.2s
100:    learn: 0.4170335     total: 7.26s     remaining: 7.12s
101:    learn: 0.4170135     total: 7.32s     remaining: 7.03s
102:    learn: 0.4169294     total: 7.39s     remaining: 6.96s
103:    learn: 0.4167279     total: 7.45s     remaining: 6.88s
```

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104:     learn: 0.4162906     total: 7.52s     remaining: 6.8s
105:     learn: 0.4161551     total: 7.6s      remaining: 6.74s
106:     learn: 0.4160491     total: 7.66s     remaining: 6.66s
107:     learn: 0.4159442     total: 7.73s     remaining: 6.58s
108:     learn: 0.4158372     total: 7.82s     remaining: 6.52s
109:     learn: 0.4156810     total: 7.89s     remaining: 6.45s
110:     learn: 0.4153792     total: 7.95s     remaining: 6.37s
111:     learn: 0.4152698     total: 8.02s     remaining: 6.3s
112:     learn: 0.4151435     total: 8.09s     remaining: 6.23s
113:     learn: 0.4141211     total: 8.15s     remaining: 6.15s
114:     learn: 0.4138221     total: 8.22s     remaining: 6.08s
115:     learn: 0.4135410     total: 8.28s     remaining: 6s
116:     learn: 0.4134543     total: 8.34s     remaining: 5.92s
117:     learn: 0.4128982     total: 8.42s     remaining: 5.85s
118:     learn: 0.4127598     total: 8.49s     remaining: 5.78s
119:     learn: 0.4126213     total: 8.55s     remaining: 5.7s
120:     learn: 0.4125813     total: 8.62s     remaining: 5.63s
121:     learn: 0.4121927     total: 8.69s     remaining: 5.55s
122:     learn: 0.4120098     total: 8.76s     remaining: 5.49s
123:     learn: 0.4114073     total: 8.82s     remaining: 5.41s
124:     learn: 0.4113644     total: 8.89s     remaining: 5.33s
125:     learn: 0.4112340     total: 8.96s     remaining: 5.26s
126:     learn: 0.4111482     total: 9.02s     remaining: 5.18s
127:     learn: 0.4110987     total: 9.09s     remaining: 5.11s
128:     learn: 0.4109940     total: 9.15s     remaining: 5.04s
129:     learn: 0.4108732     total: 9.21s     remaining: 4.96s
130:     learn: 0.4107226     total: 9.29s     remaining: 4.89s
131:     learn: 0.4105975     total: 9.35s     remaining: 4.82s
132:     learn: 0.4104044     total: 9.43s     remaining: 4.75s
133:     learn: 0.4101530     total: 9.51s     remaining: 4.68s
134:     learn: 0.4097484     total: 9.59s     remaining: 4.62s
135:     learn: 0.4097129     total: 9.67s     remaining: 4.55s
136:     learn: 0.4096631     total: 9.72s     remaining: 4.47s
137:     learn: 0.4092757     total: 9.79s     remaining: 4.4s
138:     learn: 0.4091818     total: 9.85s     remaining: 4.32s
139:     learn: 0.4090342     total: 9.91s     remaining: 4.25s
140:     learn: 0.4089007     total: 9.97s     remaining: 4.17s
141:     learn: 0.4085940     total: 10s       remaining: 4.1s
142:     learn: 0.4084897     total: 10.1s     remaining: 4.04s
143:     learn: 0.4084774     total: 10.2s     remaining: 3.96s
144:     learn: 0.4082788     total: 10.3s     remaining: 3.89s
145:     learn: 0.4079412     total: 10.3s     remaining: 3.82s
146:     learn: 0.4076696     total: 10.4s     remaining: 3.75s
147:     learn: 0.4073977     total: 10.5s     remaining: 3.68s
148:     learn: 0.4071473     total: 10.5s     remaining: 3.6s
149:     learn: 0.4069044     total: 10.6s     remaining: 3.53s
150:     learn: 0.4064513     total: 10.7s     remaining: 3.46s
151:     learn: 0.4063603     total: 10.7s     remaining: 3.38s
```

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152:    learn: 0.4062754    total: 10.8s    remaining: 3.31s
153:    learn: 0.4061231    total: 10.8s    remaining: 3.24s
154:    learn: 0.4059458    total: 10.9s    remaining: 3.17s
155:    learn: 0.4057223    total: 11s      remaining: 3.09s
156:    learn: 0.4055848    total: 11s      remaining: 3.02s
157:    learn: 0.4055805    total: 11.1s    remaining: 2.95s
158:    learn: 0.4053994    total: 11.2s    remaining: 2.88s
159:    learn: 0.4052128    total: 11.2s    remaining: 2.81s
160:    learn: 0.4049766    total: 11.3s    remaining: 2.74s
161:    learn: 0.4048671    total: 11.4s    remaining: 2.67s
162:    learn: 0.4046536    total: 11.5s    remaining: 2.6s
163:    learn: 0.4043855    total: 11.5s    remaining: 2.53s
164:    learn: 0.4042456    total: 11.6s    remaining: 2.46s
165:    learn: 0.4040188    total: 11.7s    remaining: 2.39s
166:    learn: 0.4037726    total: 11.7s    remaining: 2.32s
167:    learn: 0.4036762    total: 11.8s    remaining: 2.25s
168:    learn: 0.4034467    total: 11.9s    remaining: 2.17s
169:    learn: 0.4030439    total: 11.9s    remaining: 2.1s
170:    learn: 0.4030379    total: 12s      remaining: 2.03s
171:    learn: 0.4029335    total: 12s      remaining: 1.96s
172:    learn: 0.4028245    total: 12.1s    remaining: 1.89s
173:    learn: 0.4027247    total: 12.2s    remaining: 1.82s
174:    learn: 0.4025812    total: 12.3s    remaining: 1.75s
175:    learn: 0.4023041    total: 12.4s    remaining: 1.68s
176:    learn: 0.4022571    total: 12.4s    remaining: 1.61s
177:    learn: 0.4021740    total: 12.5s    remaining: 1.54s
178:    learn: 0.4020200    total: 12.5s    remaining: 1.47s
179:    learn: 0.4019355    total: 12.6s    remaining: 1.4s
180:    learn: 0.4018169    total: 12.7s    remaining: 1.33s
181:    learn: 0.4017241    total: 12.7s    remaining: 1.26s
182:    learn: 0.4016303    total: 12.8s    remaining: 1.19s
183:    learn: 0.4015183    total: 12.9s    remaining: 1.12s
184:    learn: 0.4013750    total: 12.9s    remaining: 1.05s
185:    learn: 0.4011908    total: 13s      remaining: 980ms
186:    learn: 0.4010923    total: 13.1s    remaining: 910ms
187:    learn: 0.4009712    total: 13.2s    remaining: 840ms
188:    learn: 0.4007902    total: 13.2s    remaining: 770ms
189:    learn: 0.4006434    total: 13.3s    remaining: 699ms
190:    learn: 0.4005794    total: 13.4s    remaining: 630ms
191:    learn: 0.4005699    total: 13.5s    remaining: 561ms
192:    learn: 0.4004051    total: 13.6s    remaining: 492ms
193:    learn: 0.4003317    total: 13.6s    remaining: 422ms
194:    learn: 0.4002145    total: 13.7s    remaining: 352ms
195:    learn: 0.3998987    total: 13.8s    remaining: 281ms
196:    learn: 0.3998141    total: 13.8s    remaining: 211ms
197:    learn: 0.3996120    total: 13.9s    remaining: 141ms
198:    learn: 0.3995275    total: 14s      remaining: 70.3ms
199:    learn: 0.3994692    total: 14.1s    remaining: 0us
```

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0:      learn: 0.6319015      total: 60.9ms    remaining: 12.1s
1:      learn: 0.5969078      total: 127ms     remaining: 12.6s
2:      learn: 0.5702002      total: 193ms     remaining: 12.7s
3:      learn: 0.5467844      total: 261ms     remaining: 12.8s
4:      learn: 0.5237312      total: 328ms     remaining: 12.8s
5:      learn: 0.5075705      total: 401ms     remaining: 13s
6:      learn: 0.4951797      total: 482ms     remaining: 13.3s
7:      learn: 0.4855406      total: 550ms     remaining: 13.2s
8:      learn: 0.4768501      total: 626ms     remaining: 13.3s
9:      learn: 0.4701348      total: 683ms     remaining: 13s
10:     learn: 0.4645002      total: 740ms     remaining: 12.7s
11:     learn: 0.4596916      total: 806ms     remaining: 12.6s
12:     learn: 0.4572207      total: 869ms     remaining: 12.5s
13:     learn: 0.4543776      total: 925ms     remaining: 12.3s
14:     learn: 0.4521739      total: 981ms     remaining: 12.1s
15:     learn: 0.4500349      total: 1.05s     remaining: 12.1s
16:     learn: 0.4479091      total: 1.11s     remaining: 12s
17:     learn: 0.4460425      total: 1.18s     remaining: 11.9s
18:     learn: 0.4443771      total: 1.23s     remaining: 11.8s
19:     learn: 0.4431155      total: 1.29s     remaining: 11.6s
20:     learn: 0.4421635      total: 1.35s     remaining: 11.5s
21:     learn: 0.4410189      total: 1.41s     remaining: 11.4s
22:     learn: 0.4398963      total: 1.48s     remaining: 11.4s
23:     learn: 0.4394295      total: 1.54s     remaining: 11.3s
24:     learn: 0.4384981      total: 1.6s      remaining: 11.2s
25:     learn: 0.4378123      total: 1.67s     remaining: 11.2s
26:     learn: 0.4374309      total: 1.73s     remaining: 11.1s
27:     learn: 0.4364510      total: 1.8s      remaining: 11s
28:     learn: 0.4359207      total: 1.86s     remaining: 11s
29:     learn: 0.4353032      total: 1.93s     remaining: 10.9s
30:     learn: 0.4348985      total: 1.99s     remaining: 10.8s
31:     learn: 0.4344632      total: 2.04s     remaining: 10.7s
32:     learn: 0.4341796      total: 2.11s     remaining: 10.7s
33:     learn: 0.4335326      total: 2.17s     remaining: 10.6s
34:     learn: 0.4332076      total: 2.23s     remaining: 10.5s
35:     learn: 0.4325447      total: 2.29s     remaining: 10.5s
36:     learn: 0.4323117      total: 2.37s     remaining: 10.4s
37:     learn: 0.4316791      total: 2.43s     remaining: 10.4s
38:     learn: 0.4313214      total: 2.52s     remaining: 10.4s
39:     learn: 0.4310876      total: 2.57s     remaining: 10.3s
40:     learn: 0.4308955      total: 2.65s     remaining: 10.3s
41:     learn: 0.4298375      total: 2.71s     remaining: 10.2s
42:     learn: 0.4293370      total: 2.77s     remaining: 10.1s
43:     learn: 0.4291498      total: 2.85s     remaining: 10.1s
44:     learn: 0.4289264      total: 2.92s     remaining: 10.1s
45:     learn: 0.4288355      total: 2.98s     remaining: 9.96s
46:     learn: 0.4282666      total: 3.05s     remaining: 9.92s
47:     learn: 0.4276999      total: 3.11s     remaining: 9.84s
```

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48:     learn: 0.4271732      total: 3.17s    remaining: 9.77s
49:     learn: 0.4265735      total: 3.24s    remaining: 9.73s
50:     learn: 0.4264513      total: 3.31s    remaining: 9.66s
51:     learn: 0.4259987      total: 3.37s    remaining: 9.59s
52:     learn: 0.4257338      total: 3.45s    remaining: 9.56s
53:     learn: 0.4255876      total: 3.51s    remaining: 9.49s
54:     learn: 0.4254806      total: 3.57s    remaining: 9.41s
55:     learn: 0.4253245      total: 3.63s    remaining: 9.34s
56:     learn: 0.4250587      total: 3.69s    remaining: 9.27s
57:     learn: 0.4249528      total: 3.76s    remaining: 9.21s
58:     learn: 0.4249211      total: 3.8s     remaining: 9.08s
59:     learn: 0.4248313      total: 3.86s    remaining: 9.01s
60:     learn: 0.4246056      total: 3.92s    remaining: 8.94s
61:     learn: 0.4240814      total: 3.98s    remaining: 8.87s
62:     learn: 0.4236379      total: 4.05s    remaining: 8.8s
63:     learn: 0.4234812      total: 4.11s    remaining: 8.72s
64:     learn: 0.4233376      total: 4.17s    remaining: 8.67s
65:     learn: 0.4232576      total: 4.22s    remaining: 8.58s
66:     learn: 0.4231126      total: 4.28s    remaining: 8.49s
67:     learn: 0.4229099      total: 4.33s    remaining: 8.41s
68:     learn: 0.4226519      total: 4.4s     remaining: 8.36s
69:     learn: 0.4224502      total: 4.48s    remaining: 8.32s
70:     learn: 0.4222759      total: 4.54s    remaining: 8.25s
71:     learn: 0.4216264      total: 4.61s    remaining: 8.2s
72:     learn: 0.4214407      total: 4.67s    remaining: 8.13s
73:     learn: 0.4209774      total: 4.78s    remaining: 8.13s
74:     learn: 0.4207192      total: 4.85s    remaining: 8.08s
75:     learn: 0.4204984      total: 4.95s    remaining: 8.08s
76:     learn: 0.4204173      total: 5.02s    remaining: 8.03s
77:     learn: 0.4204035      total: 5.07s    remaining: 7.93s
78:     learn: 0.4199953      total: 5.15s    remaining: 7.89s
79:     learn: 0.4199131      total: 5.21s    remaining: 7.81s
80:     learn: 0.4196347      total: 5.3s     remaining: 7.78s
81:     learn: 0.4194350      total: 5.38s    remaining: 7.74s
82:     learn: 0.4192657      total: 5.44s    remaining: 7.67s
83:     learn: 0.4190693      total: 5.53s    remaining: 7.63s
84:     learn: 0.4189187      total: 5.6s     remaining: 7.57s
85:     learn: 0.4186751      total: 5.67s    remaining: 7.52s
86:     learn: 0.4184883      total: 5.76s    remaining: 7.48s
87:     learn: 0.4183361      total: 5.82s    remaining: 7.41s
88:     learn: 0.4179390      total: 5.89s    remaining: 7.35s
89:     learn: 0.4176268      total: 5.95s    remaining: 7.27s
90:     learn: 0.4169146      total: 6.03s    remaining: 7.22s
91:     learn: 0.4164067      total: 6.11s    remaining: 7.17s
92:     learn: 0.4161062      total: 6.21s    remaining: 7.15s
93:     learn: 0.4153299      total: 6.29s    remaining: 7.09s
94:     learn: 0.4148363      total: 6.39s    remaining: 7.06s
95:     learn: 0.4146749      total: 6.46s    remaining: 7s
```

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96:     learn: 0.4144728     total: 6.52s     remaining: 6.92s
97:     learn: 0.4143253     total: 6.59s     remaining: 6.86s
98:     learn: 0.4142018     total: 6.67s     remaining: 6.8s
99:     learn: 0.4140895     total: 6.73s     remaining: 6.73s
100:    learn: 0.4138283     total: 6.81s     remaining: 6.67s
101:    learn: 0.4135740     total: 6.87s     remaining: 6.61s
102:    learn: 0.4132970     total: 6.96s     remaining: 6.55s
103:    learn: 0.4130994     total: 7.06s     remaining: 6.52s
104:    learn: 0.4123397     total: 7.15s     remaining: 6.47s
105:    learn: 0.4122522     total: 7.2s      remaining: 6.39s
106:    learn: 0.4121092     total: 7.28s     remaining: 6.33s
107:    learn: 0.4115243     total: 7.37s     remaining: 6.28s
108:    learn: 0.4112082     total: 7.51s     remaining: 6.27s
109:    learn: 0.4109507     total: 7.58s     remaining: 6.2s
110:    learn: 0.4109105     total: 7.64s     remaining: 6.13s
111:    learn: 0.4108580     total: 7.71s     remaining: 6.06s
112:    learn: 0.4108515     total: 7.77s     remaining: 5.98s
113:    learn: 0.4103715     total: 7.84s     remaining: 5.92s
114:    learn: 0.4102403     total: 7.94s     remaining: 5.87s
115:    learn: 0.4100669     total: 8.01s     remaining: 5.8s
116:    learn: 0.4100120     total: 8.12s     remaining: 5.76s
117:    learn: 0.4097806     total: 8.2s      remaining: 5.7s
118:    learn: 0.4097459     total: 8.27s     remaining: 5.63s
119:    learn: 0.4092575     total: 8.36s     remaining: 5.57s
120:    learn: 0.4090454     total: 8.45s     remaining: 5.52s
121:    learn: 0.4089641     total: 8.54s     remaining: 5.46s
122:    learn: 0.4087500     total: 8.61s     remaining: 5.39s
123:    learn: 0.4085690     total: 8.68s     remaining: 5.32s
124:    learn: 0.4083230     total: 8.74s     remaining: 5.24s
125:    learn: 0.4081696     total: 8.81s     remaining: 5.17s
126:    learn: 0.4077262     total: 8.88s     remaining: 5.1s
127:    learn: 0.4075227     total: 8.95s     remaining: 5.03s
128:    learn: 0.4072276     total: 9.03s     remaining: 4.97s
129:    learn: 0.4071824     total: 9.1s      remaining: 4.9s
130:    learn: 0.4069404     total: 9.15s     remaining: 4.82s
131:    learn: 0.4066149     total: 9.21s     remaining: 4.75s
132:    learn: 0.4065367     total: 9.28s     remaining: 4.67s
133:    learn: 0.4064516     total: 9.33s     remaining: 4.6s
134:    learn: 0.4063197     total: 9.4s      remaining: 4.53s
135:    learn: 0.4060157     total: 9.5s      remaining: 4.47s
136:    learn: 0.4056800     total: 9.56s     remaining: 4.39s
137:    learn: 0.4053902     total: 9.62s     remaining: 4.32s
138:    learn: 0.4052077     total: 9.69s     remaining: 4.25s
139:    learn: 0.4047645     total: 9.74s     remaining: 4.17s
140:    learn: 0.4047581     total: 9.81s     remaining: 4.1s
141:    learn: 0.4045050     total: 9.88s     remaining: 4.03s
142:    learn: 0.4044649     total: 9.94s     remaining: 3.96s
143:    learn: 0.4043020     total: 10s       remaining: 3.89s
```

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144:    learn: 0.4042201      total: 10.1s     remaining: 3.82s
145:    learn: 0.4040167      total: 10.1s     remaining: 3.75s
146:    learn: 0.4038390      total: 10.2s     remaining: 3.67s
147:    learn: 0.4035137      total: 10.3s     remaining: 3.6s
148:    learn: 0.4033938      total: 10.3s     remaining: 3.53s
149:    learn: 0.4033687      total: 10.4s     remaining: 3.46s
150:    learn: 0.4033634      total: 10.5s     remaining: 3.39s
151:    learn: 0.4031553      total: 10.5s     remaining: 3.32s
152:    learn: 0.4028473      total: 10.6s     remaining: 3.25s
153:    learn: 0.4024898      total: 10.7s     remaining: 3.18s
154:    learn: 0.4023574      total: 10.7s     remaining: 3.11s
155:    learn: 0.4023335      total: 10.8s     remaining: 3.04s
156:    learn: 0.4021889      total: 10.9s     remaining: 2.98s
157:    learn: 0.4021280      total: 10.9s     remaining: 2.9s
158:    learn: 0.4020866      total: 11s       remaining: 2.83s
159:    learn: 0.4020333      total: 11.1s     remaining: 2.76s
160:    learn: 0.4019896      total: 11.1s     remaining: 2.69s
161:    learn: 0.4017945      total: 11.2s     remaining: 2.62s
162:    learn: 0.4017187      total: 11.2s     remaining: 2.55s
163:    learn: 0.4015825      total: 11.3s     remaining: 2.48s
164:    learn: 0.4013196      total: 11.4s     remaining: 2.41s
165:    learn: 0.4011071      total: 11.4s     remaining: 2.34s
166:    learn: 0.4008449      total: 11.5s     remaining: 2.27s
167:    learn: 0.4005232      total: 11.6s     remaining: 2.2s
168:    learn: 0.4003855      total: 11.6s     remaining: 2.13s
169:    learn: 0.4001639      total: 11.7s     remaining: 2.06s
170:    learn: 0.3999678      total: 11.8s     remaining: 2s
171:    learn: 0.3998949      total: 11.8s     remaining: 1.93s
172:    learn: 0.3996202      total: 11.9s     remaining: 1.86s
173:    learn: 0.3994069      total: 12s       remaining: 1.79s
174:    learn: 0.3993654      total: 12s       remaining: 1.72s
175:    learn: 0.3990772      total: 12.1s     remaining: 1.65s
176:    learn: 0.3989576      total: 12.2s     remaining: 1.58s
177:    learn: 0.3985206      total: 12.3s     remaining: 1.51s
178:    learn: 0.3985029      total: 12.3s     remaining: 1.44s
179:    learn: 0.3984052      total: 12.4s     remaining: 1.38s
180:    learn: 0.3982108      total: 12.5s     remaining: 1.31s
181:    learn: 0.3981037      total: 12.5s     remaining: 1.24s
182:    learn: 0.3978809      total: 12.6s     remaining: 1.17s
183:    learn: 0.3976733      total: 12.7s     remaining: 1.1s
184:    learn: 0.3976019      total: 12.7s     remaining: 1.03s
185:    learn: 0.3973112      total: 12.8s     remaining: 965ms
186:    learn: 0.3972218      total: 12.9s     remaining: 895ms
187:    learn: 0.3970482      total: 13s       remaining: 827ms
188:    learn: 0.3968957      total: 13s       remaining: 758ms
189:    learn: 0.3967297      total: 13.1s     remaining: 689ms
190:    learn: 0.3964401      total: 13.2s     remaining: 620ms
191:    learn: 0.3962110      total: 13.2s     remaining: 551ms
```

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192:    learn: 0.3960822    total: 13.3s    remaining: 482ms
193:    learn: 0.3958757    total: 13.4s    remaining: 413ms
194:    learn: 0.3957794    total: 13.4s    remaining: 344ms
195:    learn: 0.3957298    total: 13.5s    remaining: 275ms
196:    learn: 0.3955467    total: 13.6s    remaining: 206ms
197:    learn: 0.3953183    total: 13.6s    remaining: 138ms
198:    learn: 0.3952328    total: 13.7s    remaining: 68.8ms
199:    learn: 0.3951165    total: 13.8s    remaining: 0us
```
Mean train f1-score of data (CV) 6 is : 0.8185346765203784
Mean test f1-score of data (CV) 6 is : 0.8055780844345634

Shape of data 7 is :
(27303, 10)
Distribution of 7 is :
Yes   14102
No   13201
Name: TIMELY_RESPONSE, dtype: int64

<IPython.core.display.HTML object>

MetricVisualizer(layout=Layout(align_self='stretch', height='500px'))

Train f1_score [Yes]: for data 7 is : 0.8073969849246231
Train f1_score [No]: for data 7 is : 0.8150692862932797

	precision	recall	f1-score	support
No	0.76	0.86	0.81	924
Yes	0.85	0.75	0.80	988
accuracy			0.80	1912
macro avg	0.81	0.80	0.80	1912
weighted avg	0.81	0.80	0.80	1912
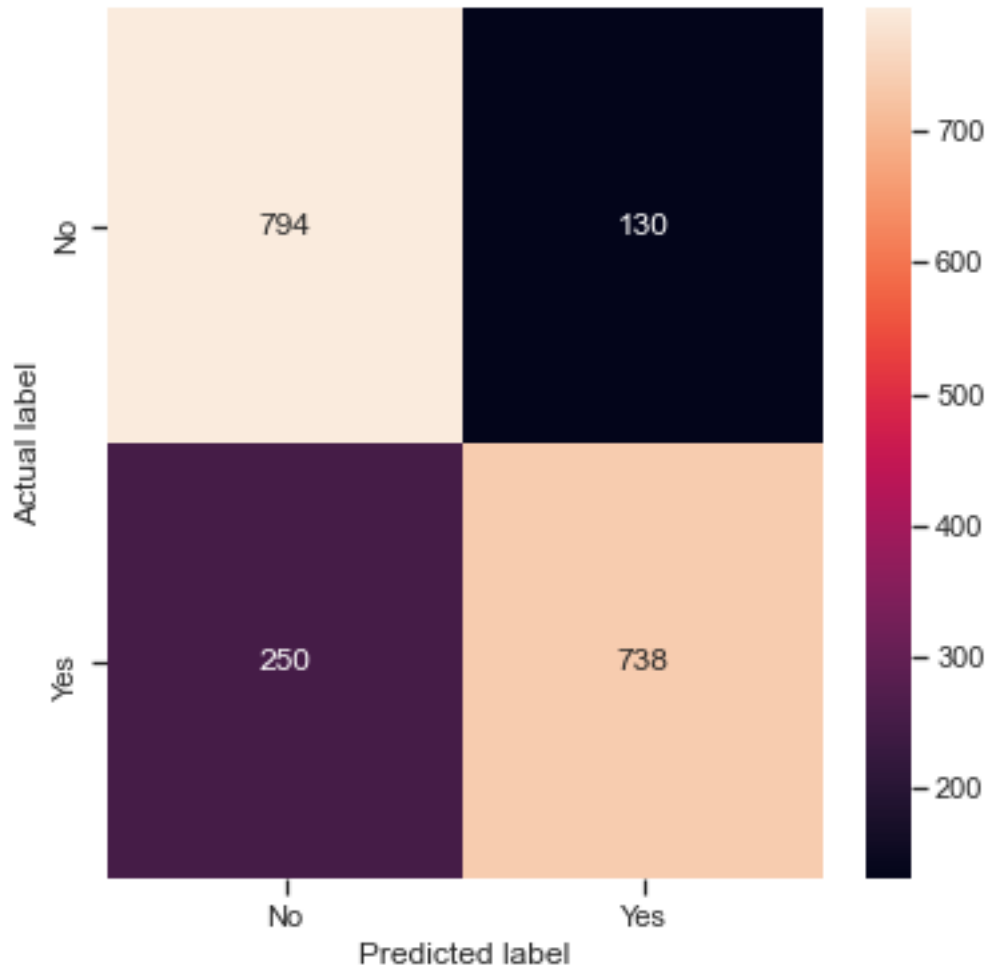
```
Cross validation result for data 7 is :
0:      learn: 0.6457641        total: 58.5ms    remaining: 11.6s
1:      learn: 0.5995777        total: 121ms     remaining: 12s
2:      learn: 0.5728013        total: 180ms     remaining: 11.8s
3:      learn: 0.5444527        total: 241ms     remaining: 11.8s
4:      learn: 0.5266383        total: 327ms     remaining: 12.8s
5:      learn: 0.5151274        total: 387ms     remaining: 12.5s
6:      learn: 0.5020920        total: 443ms     remaining: 12.2s
7:      learn: 0.4919472        total: 547ms     remaining: 13.1s
8:      learn: 0.4822449        total: 617ms     remaining: 13.1s
9:      learn: 0.4773664        total: 673ms     remaining: 12.8s
10:     learn: 0.4719806        total: 740ms     remaining: 12.7s
11:     learn: 0.4675005        total: 795ms     remaining: 12.5s
12:     learn: 0.4636435        total: 869ms     remaining: 12.5s
13:     learn: 0.4611098        total: 937ms     remaining: 12.4s
14:     learn: 0.4591397        total: 999ms     remaining: 12.3s
15:     learn: 0.4570403        total: 1.06s     remaining: 12.2s
```

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16:     learn: 0.4551547     total: 1.15s     remaining: 12.4s
17:     learn: 0.4540147     total: 1.21s     remaining: 12.3s
18:     learn: 0.4528016     total: 1.27s     remaining: 12.1s
19:     learn: 0.4517096     total: 1.36s     remaining: 12.2s
20:     learn: 0.4499575     total: 1.43s     remaining: 12.2s
21:     learn: 0.4487546     total: 1.49s     remaining: 12.1s
22:     learn: 0.4482890     total: 1.56s     remaining: 12s
23:     learn: 0.4473788     total: 1.62s     remaining: 11.9s
24:     learn: 0.4464887     total: 1.67s     remaining: 11.7s
25:     learn: 0.4460065     total: 1.75s     remaining: 11.7s
26:     learn: 0.4453008     total: 1.81s     remaining: 11.6s
27:     learn: 0.4445114     total: 1.86s     remaining: 11.5s
28:     learn: 0.4438368     total: 1.92s     remaining: 11.3s
29:     learn: 0.4432646     total: 1.99s     remaining: 11.3s
30:     learn: 0.4425933     total: 2.07s     remaining: 11.3s
31:     learn: 0.4424904     total: 2.09s     remaining: 11s
32:     learn: 0.4421535     total: 2.15s     remaining: 10.9s
33:     learn: 0.4412247     total: 2.2s      remaining: 10.7s
34:     learn: 0.4410448     total: 2.25s     remaining: 10.6s
35:     learn: 0.4405810     total: 2.31s     remaining: 10.5s
36:     learn: 0.4396271     total: 2.37s     remaining: 10.4s
37:     learn: 0.4393874     total: 2.43s     remaining: 10.3s
38:     learn: 0.4391722     total: 2.49s     remaining: 10.3s
39:     learn: 0.4387489     total: 2.55s     remaining: 10.2s
40:     learn: 0.4384390     total: 2.61s     remaining: 10.1s
41:     learn: 0.4374519     total: 2.66s     remaining: 10s
42:     learn: 0.4371505     total: 2.73s     remaining: 9.97s
43:     learn: 0.4369070     total: 2.79s     remaining: 9.88s
44:     learn: 0.4360204     total: 2.85s     remaining: 9.82s
45:     learn: 0.4359262     total: 2.92s     remaining: 9.78s
46:     learn: 0.4358169     total: 2.97s     remaining: 9.67s
47:     learn: 0.4355045     total: 3.03s     remaining: 9.59s
48:     learn: 0.4352634     total: 3.09s     remaining: 9.53s
49:     learn: 0.4350829     total: 3.16s     remaining: 9.48s
50:     learn: 0.4349378     total: 3.24s     remaining: 9.48s
51:     learn: 0.4347960     total: 3.32s     remaining: 9.44s
52:     learn: 0.4342496     total: 3.38s     remaining: 9.36s
53:     learn: 0.4333954     total: 3.44s     remaining: 9.3s
54:     learn: 0.4332674     total: 3.51s     remaining: 9.26s
55:     learn: 0.4329962     total: 3.57s     remaining: 9.19s
56:     learn: 0.4328942     total: 3.63s     remaining: 9.12s
57:     learn: 0.4316888     total: 3.69s     remaining: 9.04s
58:     learn: 0.4315581     total: 3.75s     remaining: 8.95s
59:     learn: 0.4314710     total: 3.84s     remaining: 8.95s
60:     learn: 0.4310793     total: 3.9s      remaining: 8.88s
61:     learn: 0.4308824     total: 3.95s     remaining: 8.8s
62:     learn: 0.4306670     total: 4.01s     remaining: 8.73s
63:     learn: 0.4303019     total: 4.07s     remaining: 8.65s
```

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64:     learn: 0.4299933      total: 4.15s     remaining: 8.61s
65:     learn: 0.4297680      total: 4.2s      remaining: 8.53s
66:     learn: 0.4296220      total: 4.26s     remaining: 8.47s
67:     learn: 0.4295523      total: 4.33s     remaining: 8.4s
68:     learn: 0.4294006      total: 4.38s     remaining: 8.31s
69:     learn: 0.4292713      total: 4.45s     remaining: 8.26s
70:     learn: 0.4292020      total: 4.52s     remaining: 8.21s
71:     learn: 0.4289053      total: 4.58s     remaining: 8.15s
72:     learn: 0.4286280      total: 4.65s     remaining: 8.09s
73:     learn: 0.4285535      total: 4.71s     remaining: 8.02s
74:     learn: 0.4281556      total: 4.78s     remaining: 7.96s
75:     learn: 0.4280014      total: 4.84s     remaining: 7.89s
76:     learn: 0.4278173      total: 4.92s     remaining: 7.85s
77:     learn: 0.4275610      total: 4.98s     remaining: 7.79s
78:     learn: 0.4272338      total: 5.05s     remaining: 7.74s
79:     learn: 0.4269920      total: 5.12s     remaining: 7.68s
80:     learn: 0.4266434      total: 5.18s     remaining: 7.61s
81:     learn: 0.4265705      total: 5.24s     remaining: 7.54s
82:     learn: 0.4265702      total: 5.27s     remaining: 7.43s
83:     learn: 0.4259807      total: 5.35s     remaining: 7.38s
84:     learn: 0.4258908      total: 5.41s     remaining: 7.33s
85:     learn: 0.4258078      total: 5.46s     remaining: 7.24s
86:     learn: 0.4255474      total: 5.53s     remaining: 7.19s
87:     learn: 0.4253182      total: 5.63s     remaining: 7.16s
88:     learn: 0.4251611      total: 5.68s     remaining: 7.09s
89:     learn: 0.4247838      total: 5.76s     remaining: 7.04s
90:     learn: 0.4243083      total: 5.84s     remaining: 7s
91:     learn: 0.4240169      total: 5.97s     remaining: 7.01s
92:     learn: 0.4238158      total: 6.06s     remaining: 6.97s
93:     learn: 0.4237349      total: 6.14s     remaining: 6.92s
94:     learn: 0.4234938      total: 6.21s     remaining: 6.86s
95:     learn: 0.4231145      total: 6.27s     remaining: 6.79s
96:     learn: 0.4228169      total: 6.35s     remaining: 6.75s
97:     learn: 0.4227778      total: 6.46s     remaining: 6.72s
98:     learn: 0.4226162      total: 6.53s     remaining: 6.66s
99:     learn: 0.4224385      total: 6.59s     remaining: 6.59s
100:    learn: 0.4222647      total: 6.65s     remaining: 6.52s
101:    learn: 0.4221102      total: 6.71s     remaining: 6.45s
102:    learn: 0.4215772      total: 6.81s     remaining: 6.41s
103:    learn: 0.4214565      total: 6.86s     remaining: 6.33s
104:    learn: 0.4211148      total: 6.92s     remaining: 6.26s
105:    learn: 0.4204065      total: 7.01s     remaining: 6.22s
106:    learn: 0.4202336      total: 7.07s     remaining: 6.14s
107:    learn: 0.4200688      total: 7.13s     remaining: 6.07s
108:    learn: 0.4200603      total: 7.18s     remaining: 6s
109:    learn: 0.4200300      total: 7.23s     remaining: 5.92s
110:    learn: 0.4198420      total: 7.29s     remaining: 5.84s
111:    learn: 0.4191493      total: 7.34s     remaining: 5.76s
```

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112:    learn: 0.4188561    total: 7.4s    remaining: 5.7s
113:    learn: 0.4188278    total: 7.45s   remaining: 5.62s
114:    learn: 0.4182190    total: 7.5s    remaining: 5.55s
115:    learn: 0.4176795    total: 7.57s   remaining: 5.48s
116:    learn: 0.4173287    total: 7.64s   remaining: 5.42s
117:    learn: 0.4169666    total: 7.7s    remaining: 5.35s
118:    learn: 0.4166550    total: 7.8s    remaining: 5.31s
119:    learn: 0.4162746    total: 7.85s   remaining: 5.23s
120:    learn: 0.4162201    total: 7.92s   remaining: 5.17s
121:    learn: 0.4159515    total: 7.99s   remaining: 5.11s
122:    learn: 0.4159453    total: 8.05s   remaining: 5.04s
123:    learn: 0.4158193    total: 8.1s    remaining: 4.96s
124:    learn: 0.4157010    total: 8.16s   remaining: 4.9s
125:    learn: 0.4156462    total: 8.22s   remaining: 4.83s
126:    learn: 0.4153946    total: 8.3s    remaining: 4.77s
127:    learn: 0.4153767    total: 8.36s   remaining: 4.7s
128:    learn: 0.4152752    total: 8.42s   remaining: 4.63s
129:    learn: 0.4145789    total: 8.49s   remaining: 4.57s
130:    learn: 0.4143882    total: 8.57s   remaining: 4.51s
131:    learn: 0.4143664    total: 8.63s   remaining: 4.44s
132:    learn: 0.4140288    total: 8.7s    remaining: 4.38s
133:    learn: 0.4136569    total: 8.77s   remaining: 4.32s
134:    learn: 0.4132710    total: 8.84s   remaining: 4.25s
135:    learn: 0.4130777    total: 8.9s    remaining: 4.19s
136:    learn: 0.4129719    total: 8.96s   remaining: 4.12s
137:    learn: 0.4127985    total: 9.04s   remaining: 4.06s
138:    learn: 0.4126896    total: 9.12s   remaining: 4s
139:    learn: 0.4126811    total: 9.19s   remaining: 3.94s
140:    learn: 0.4124367    total: 9.28s   remaining: 3.88s
141:    learn: 0.4120453    total: 9.35s   remaining: 3.82s
142:    learn: 0.4116341    total: 9.43s   remaining: 3.76s
143:    learn: 0.4114273    total: 9.54s   remaining: 3.71s
144:    learn: 0.4112899    total: 9.61s   remaining: 3.65s
145:    learn: 0.4111850    total: 9.69s   remaining: 3.58s
146:    learn: 0.4108907    total: 9.76s   remaining: 3.52s
147:    learn: 0.4104256    total: 9.83s   remaining: 3.45s
148:    learn: 0.4104087    total: 9.89s   remaining: 3.39s
149:    learn: 0.4098913    total: 9.96s   remaining: 3.32s
150:    learn: 0.4095396    total: 10s     remaining: 3.26s
151:    learn: 0.4094356    total: 10.1s   remaining: 3.19s
152:    learn: 0.4093481    total: 10.2s   remaining: 3.13s
153:    learn: 0.4091209    total: 10.2s   remaining: 3.06s
154:    learn: 0.4087941    total: 10.4s   remaining: 3.01s
155:    learn: 0.4087034    total: 10.5s   remaining: 2.96s
156:    learn: 0.4084461    total: 10.6s   remaining: 2.89s
157:    learn: 0.4083566    total: 10.6s   remaining: 2.83s
158:    learn: 0.4079809    total: 10.7s   remaining: 2.76s
159:    learn: 0.4079483    total: 10.8s   remaining: 2.69s
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160:    learn: 0.4078977    total: 10.8s    remaining: 2.62s
161:    learn: 0.4076953    total: 10.9s    remaining: 2.56s
162:    learn: 0.4075912    total: 10.9s    remaining: 2.48s
163:    learn: 0.4073166    total: 11s      remaining: 2.42s
164:    learn: 0.4071157    total: 11.1s    remaining: 2.35s
165:    learn: 0.4069272    total: 11.2s    remaining: 2.3s
166:    learn: 0.4066551    total: 11.3s    remaining: 2.24s
167:    learn: 0.4065796    total: 11.4s    remaining: 2.17s
168:    learn: 0.4062228    total: 11.5s    remaining: 2.11s
169:    learn: 0.4062002    total: 11.5s    remaining: 2.04s
170:    learn: 0.4060161    total: 11.6s    remaining: 1.97s
171:    learn: 0.4058362    total: 11.7s    remaining: 1.91s
172:    learn: 0.4057036    total: 11.8s    remaining: 1.85s
173:    learn: 0.4054242    total: 11.9s    remaining: 1.78s
174:    learn: 0.4052624    total: 12s      remaining: 1.71s
175:    learn: 0.4050738    total: 12s      remaining: 1.64s
176:    learn: 0.4047268    total: 12.1s    remaining: 1.57s
177:    learn: 0.4045912    total: 12.2s    remaining: 1.5s
178:    learn: 0.4043481    total: 12.2s    remaining: 1.43s
179:    learn: 0.4042419    total: 12.3s    remaining: 1.36s
180:    learn: 0.4039125    total: 12.3s    remaining: 1.29s
181:    learn: 0.4035352    total: 12.4s    remaining: 1.23s
182:    learn: 0.4034305    total: 12.5s    remaining: 1.16s
183:    learn: 0.4032784    total: 12.5s    remaining: 1.09s
184:    learn: 0.4031631    total: 12.6s    remaining: 1.02s
185:    learn: 0.4030582    total: 12.6s    remaining: 952ms
186:    learn: 0.4029433    total: 12.7s    remaining: 883ms
187:    learn: 0.4027795    total: 12.8s    remaining: 815ms
188:    learn: 0.4026904    total: 12.8s    remaining: 747ms
189:    learn: 0.4025468    total: 12.9s    remaining: 678ms
190:    learn: 0.4022481    total: 12.9s    remaining: 610ms
191:    learn: 0.4020531    total: 13s      remaining: 542ms
192:    learn: 0.4017798    total: 13.1s    remaining: 475ms
193:    learn: 0.4016457    total: 13.1s    remaining: 406ms
194:    learn: 0.4015561    total: 13.2s    remaining: 338ms
195:    learn: 0.4015485    total: 13.3s    remaining: 271ms
196:    learn: 0.4013070    total: 13.3s    remaining: 203ms
197:    learn: 0.4010808    total: 13.4s    remaining: 135ms
198:    learn: 0.4009320    total: 13.5s    remaining: 67.6ms
199:    learn: 0.4007941    total: 13.5s    remaining: 0us
0:      learn: 0.6376328    total: 107ms    remaining: 21.2s
1:      learn: 0.5973243    total: 180ms    remaining: 17.8s
2:      learn: 0.5720684    total: 245ms    remaining: 16.1s
3:      learn: 0.5517265    total: 311ms    remaining: 15.2s
4:      learn: 0.5362814    total: 377ms    remaining: 14.7s
5:      learn: 0.5199360    total: 454ms    remaining: 14.7s
6:      learn: 0.5084746    total: 536ms    remaining: 14.8s
7:      learn: 0.4991064    total: 591ms    remaining: 14.2s
```

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8:      learn: 0.4916829    total: 659ms    remaining: 14s
9:      learn: 0.4858103    total: 730ms    remaining: 13.9s
10:     learn: 0.4811357    total: 795ms    remaining: 13.7s
11:     learn: 0.4751806    total: 849ms    remaining: 13.3s
12:     learn: 0.4715436    total: 932ms    remaining: 13.4s
13:     learn: 0.4690160    total: 996ms    remaining: 13.2s
14:     learn: 0.4664830    total: 1.05s    remaining: 13s
15:     learn: 0.4638989    total: 1.11s    remaining: 12.7s
16:     learn: 0.4616557    total: 1.17s    remaining: 12.6s
17:     learn: 0.4602011    total: 1.22s    remaining: 12.4s
18:     learn: 0.4582093    total: 1.28s    remaining: 12.2s
19:     learn: 0.4565552    total: 1.35s    remaining: 12.1s
20:     learn: 0.4548021    total: 1.43s    remaining: 12.2s
21:     learn: 0.4538048    total: 1.48s    remaining: 12s
22:     learn: 0.4525015    total: 1.55s    remaining: 12s
23:     learn: 0.4520915    total: 1.64s    remaining: 12s
24:     learn: 0.4513999    total: 1.7s     remaining: 11.9s
25:     learn: 0.4508619    total: 1.75s    remaining: 11.7s
26:     learn: 0.4501988    total: 1.8s     remaining: 11.6s
27:     learn: 0.4500645    total: 1.85s    remaining: 11.4s
28:     learn: 0.4494034    total: 1.91s    remaining: 11.3s
29:     learn: 0.4481589    total: 2s       remaining: 11.3s
30:     learn: 0.4476844    total: 2.06s    remaining: 11.2s
31:     learn: 0.4474035    total: 2.12s    remaining: 11.1s
32:     learn: 0.4470306    total: 2.18s    remaining: 11s
33:     learn: 0.4465575    total: 2.25s    remaining: 11s
34:     learn: 0.4460298    total: 2.31s    remaining: 10.9s
35:     learn: 0.4457273    total: 2.37s    remaining: 10.8s
36:     learn: 0.4450534    total: 2.44s    remaining: 10.8s
37:     learn: 0.4446282    total: 2.5s     remaining: 10.7s
38:     learn: 0.4441893    total: 2.56s    remaining: 10.6s
39:     learn: 0.4439444    total: 2.64s    remaining: 10.6s
40:     learn: 0.4429296    total: 2.69s    remaining: 10.4s
41:     learn: 0.4429140    total: 2.71s    remaining: 10.2s
42:     learn: 0.4422866    total: 2.81s    remaining: 10.2s
43:     learn: 0.4413714    total: 2.86s    remaining: 10.1s
44:     learn: 0.4411458    total: 2.92s    remaining: 10.1s
45:     learn: 0.4405642    total: 2.99s    remaining: 10s
46:     learn: 0.4402613    total: 3.08s    remaining: 10s
47:     learn: 0.4400041    total: 3.15s    remaining: 9.97s
48:     learn: 0.4393684    total: 3.22s    remaining: 9.92s
49:     learn: 0.4391538    total: 3.29s    remaining: 9.88s
50:     learn: 0.4386351    total: 3.36s    remaining: 9.81s
51:     learn: 0.4384024    total: 3.42s    remaining: 9.74s
52:     learn: 0.4380464    total: 3.5s     remaining: 9.71s
53:     learn: 0.4375872    total: 3.58s    remaining: 9.67s
54:     learn: 0.4375765    total: 3.62s    remaining: 9.54s
55:     learn: 0.4370623    total: 3.68s    remaining: 9.46s
```

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56:     learn: 0.4363548     total: 3.74s     remaining: 9.39s
57:     learn: 0.4355901     total: 3.81s     remaining: 9.32s
58:     learn: 0.4345262     total: 3.86s     remaining: 9.23s
59:     learn: 0.4342936     total: 3.92s     remaining: 9.15s
60:     learn: 0.4339927     total: 4.01s     remaining: 9.14s
61:     learn: 0.4337173     total: 4.09s     remaining: 9.11s
62:     learn: 0.4333621     total: 4.18s     remaining: 9.09s
63:     learn: 0.4330997     total: 4.25s     remaining: 9.03s
64:     learn: 0.4327735     total: 4.32s     remaining: 8.97s
65:     learn: 0.4325007     total: 4.37s     remaining: 8.87s
66:     learn: 0.4323961     total: 4.43s     remaining: 8.79s
67:     learn: 0.4319593     total: 4.49s     remaining: 8.72s
68:     learn: 0.4316125     total: 4.55s     remaining: 8.63s
69:     learn: 0.4314746     total: 4.62s     remaining: 8.58s
70:     learn: 0.4313185     total: 4.67s     remaining: 8.49s
71:     learn: 0.4311407     total: 4.72s     remaining: 8.4s
72:     learn: 0.4304509     total: 4.78s     remaining: 8.31s
73:     learn: 0.4302793     total: 4.84s     remaining: 8.25s
74:     learn: 0.4298785     total: 4.92s     remaining: 8.21s
75:     learn: 0.4295160     total: 4.99s     remaining: 8.14s
76:     learn: 0.4293425     total: 5.06s     remaining: 8.08s
77:     learn: 0.4289707     total: 5.12s     remaining: 8.01s
78:     learn: 0.4286716     total: 5.21s     remaining: 7.97s
79:     learn: 0.4285206     total: 5.26s     remaining: 7.89s
80:     learn: 0.4284701     total: 5.31s     remaining: 7.8s
81:     learn: 0.4281983     total: 5.36s     remaining: 7.71s
82:     learn: 0.4274954     total: 5.42s     remaining: 7.64s
83:     learn: 0.4272793     total: 5.48s     remaining: 7.57s
84:     learn: 0.4270762     total: 5.54s     remaining: 7.5s
85:     learn: 0.4269132     total: 5.61s     remaining: 7.44s
86:     learn: 0.4264400     total: 5.67s     remaining: 7.36s
87:     learn: 0.4262694     total: 5.73s     remaining: 7.3s
88:     learn: 0.4261455     total: 5.79s     remaining: 7.22s
89:     learn: 0.4259425     total: 5.84s     remaining: 7.14s
90:     learn: 0.4257169     total: 5.91s     remaining: 7.07s
91:     learn: 0.4252746     total: 5.96s     remaining: 7s
92:     learn: 0.4248408     total: 6.02s     remaining: 6.93s
93:     learn: 0.4246259     total: 6.08s     remaining: 6.86s
94:     learn: 0.4242413     total: 6.14s     remaining: 6.79s
95:     learn: 0.4239323     total: 6.21s     remaining: 6.72s
96:     learn: 0.4238780     total: 6.26s     remaining: 6.65s
97:     learn: 0.4238192     total: 6.32s     remaining: 6.57s
98:     learn: 0.4230157     total: 6.37s     remaining: 6.49s
99:     learn: 0.4227577     total: 6.42s     remaining: 6.42s
100:    learn: 0.4224294     total: 6.47s     remaining: 6.34s
101:    learn: 0.4223039     total: 6.54s     remaining: 6.29s
102:    learn: 0.4219824     total: 6.63s     remaining: 6.24s
103:    learn: 0.4213770     total: 6.68s     remaining: 6.17s
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104:    learn: 0.4211907    total: 6.74s    remaining: 6.09s
105:    learn: 0.4206530    total: 6.8s     remaining: 6.03s
106:    learn: 0.4205255    total: 6.85s    remaining: 5.95s
107:    learn: 0.4201750    total: 6.91s    remaining: 5.88s
108:    learn: 0.4199775    total: 6.96s    remaining: 5.81s
109:    learn: 0.4197817    total: 7.01s    remaining: 5.74s
110:    learn: 0.4195426    total: 7.09s    remaining: 5.68s
111:    learn: 0.4193374    total: 7.14s    remaining: 5.61s
112:    learn: 0.4189116    total: 7.19s    remaining: 5.54s
113:    learn: 0.4184043    total: 7.25s    remaining: 5.47s
114:    learn: 0.4177611    total: 7.31s    remaining: 5.4s
115:    learn: 0.4174272    total: 7.37s    remaining: 5.34s
116:    learn: 0.4173409    total: 7.42s    remaining: 5.26s
117:    learn: 0.4166531    total: 7.47s    remaining: 5.19s
118:    learn: 0.4164396    total: 7.53s    remaining: 5.12s
119:    learn: 0.4161989    total: 7.62s    remaining: 5.08s
120:    learn: 0.4157531    total: 7.67s    remaining: 5.01s
121:    learn: 0.4154159    total: 7.72s    remaining: 4.93s
122:    learn: 0.4151331    total: 7.78s    remaining: 4.87s
123:    learn: 0.4148254    total: 7.84s    remaining: 4.8s
124:    learn: 0.4142364    total: 7.91s    remaining: 4.74s
125:    learn: 0.4138828    total: 7.97s    remaining: 4.68s
126:    learn: 0.4137037    total: 8.03s    remaining: 4.61s
127:    learn: 0.4136342    total: 8.08s    remaining: 4.54s
128:    learn: 0.4134030    total: 8.14s    remaining: 4.48s
129:    learn: 0.4130973    total: 8.22s    remaining: 4.43s
130:    learn: 0.4128351    total: 8.27s    remaining: 4.36s
131:    learn: 0.4125581    total: 8.34s    remaining: 4.29s
132:    learn: 0.4121503    total: 8.41s    remaining: 4.24s
133:    learn: 0.4118737    total: 8.46s    remaining: 4.17s
134:    learn: 0.4118194    total: 8.51s    remaining: 4.1s
135:    learn: 0.4115645    total: 8.69s    remaining: 4.09s
136:    learn: 0.4113687    total: 8.79s    remaining: 4.04s
137:    learn: 0.4108856    total: 8.85s    remaining: 3.97s
138:    learn: 0.4106972    total: 8.91s    remaining: 3.91s
139:    learn: 0.4106410    total: 8.99s    remaining: 3.85s
140:    learn: 0.4104374    total: 9.04s    remaining: 3.78s
141:    learn: 0.4100789    total: 9.11s    remaining: 3.72s
142:    learn: 0.4097436    total: 9.23s    remaining: 3.68s
143:    learn: 0.4095557    total: 9.31s    remaining: 3.62s
144:    learn: 0.4093003    total: 9.36s    remaining: 3.55s
145:    learn: 0.4091047    total: 9.42s    remaining: 3.48s
146:    learn: 0.4089096    total: 9.48s    remaining: 3.42s
147:    learn: 0.4086087    total: 9.54s    remaining: 3.35s
148:    learn: 0.4086004    total: 9.6s     remaining: 3.29s
149:    learn: 0.4085503    total: 9.65s    remaining: 3.21s
150:    learn: 0.4083876    total: 9.71s    remaining: 3.15s
151:    learn: 0.4079909    total: 9.8s     remaining: 3.1s
```

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152:    learn: 0.4079166    total: 9.88s    remaining: 3.04s
153:    learn: 0.4077152    total: 9.94s    remaining: 2.97s
154:    learn: 0.4075927    total: 10s      remaining: 2.9s
155:    learn: 0.4074324    total: 10s      remaining: 2.83s
156:    learn: 0.4072033    total: 10.1s    remaining: 2.77s
157:    learn: 0.4068360    total: 10.2s    remaining: 2.7s
158:    learn: 0.4065914    total: 10.2s    remaining: 2.64s
159:    learn: 0.4064721    total: 10.3s    remaining: 2.57s
160:    learn: 0.4063806    total: 10.3s    remaining: 2.5s
161:    learn: 0.4058169    total: 10.4s    remaining: 2.44s
162:    learn: 0.4056297    total: 10.5s    remaining: 2.38s
163:    learn: 0.4054158    total: 10.5s    remaining: 2.31s
164:    learn: 0.4054099    total: 10.6s    remaining: 2.24s
165:    learn: 0.4052246    total: 10.6s    remaining: 2.18s
166:    learn: 0.4051384    total: 10.7s    remaining: 2.11s
167:    learn: 0.4049062    total: 10.7s    remaining: 2.04s
168:    learn: 0.4047448    total: 10.8s    remaining: 1.98s
169:    learn: 0.4046083    total: 10.9s    remaining: 1.92s
170:    learn: 0.4045051    total: 10.9s    remaining: 1.85s
171:    learn: 0.4042492    total: 11s      remaining: 1.79s
172:    learn: 0.4042270    total: 11.1s    remaining: 1.73s
173:    learn: 0.4042219    total: 11.1s    remaining: 1.66s
174:    learn: 0.4039982    total: 11.2s    remaining: 1.59s
175:    learn: 0.4038023    total: 11.2s    remaining: 1.53s
176:    learn: 0.4036812    total: 11.3s    remaining: 1.47s
177:    learn: 0.4035699    total: 11.4s    remaining: 1.4s
178:    learn: 0.4034225    total: 11.4s    remaining: 1.34s
179:    learn: 0.4030711    total: 11.5s    remaining: 1.27s
180:    learn: 0.4029183    total: 11.5s    remaining: 1.21s
181:    learn: 0.4027261    total: 11.6s    remaining: 1.14s
182:    learn: 0.4025323    total: 11.6s    remaining: 1.08s
183:    learn: 0.4022540    total: 11.7s    remaining: 1.02s
184:    learn: 0.4018989    total: 11.7s    remaining: 952ms
185:    learn: 0.4016189    total: 11.8s    remaining: 890ms
186:    learn: 0.4013650    total: 12.1s    remaining: 841ms
187:    learn: 0.4012459    total: 12.2s    remaining: 777ms
188:    learn: 0.4009817    total: 12.2s    remaining: 712ms
189:    learn: 0.4007814    total: 12.3s    remaining: 647ms
190:    learn: 0.4006066    total: 12.4s    remaining: 583ms
191:    learn: 0.4003800    total: 12.4s    remaining: 518ms
192:    learn: 0.4002991    total: 12.5s    remaining: 453ms
193:    learn: 0.4001213    total: 12.6s    remaining: 390ms
194:    learn: 0.3999472    total: 12.7s    remaining: 325ms
195:    learn: 0.3997219    total: 12.7s    remaining: 260ms
196:    learn: 0.3996284    total: 12.8s    remaining: 195ms
197:    learn: 0.3995159    total: 12.9s    remaining: 130ms
198:    learn: 0.3994486    total: 12.9s    remaining: 64.9ms
199:    learn: 0.3994061    total: 13s      remaining: 0us
```

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0:      learn: 0.6324947      total: 54.9ms    remaining: 10.9s
1:      learn: 0.5927384      total: 107ms     remaining: 10.6s
2:      learn: 0.5647950      total: 162ms     remaining: 10.7s
3:      learn: 0.5444772      total: 230ms     remaining: 11.3s
4:      learn: 0.5282667      total: 283ms     remaining: 11s
5:      learn: 0.5136118      total: 360ms     remaining: 11.7s
6:      learn: 0.5014151      total: 423ms     remaining: 11.7s
7:      learn: 0.4935359      total: 468ms     remaining: 11.2s
8:      learn: 0.4868673      total: 567ms     remaining: 12s
9:      learn: 0.4808551      total: 611ms     remaining: 11.6s
10:     learn: 0.4739837      total: 653ms     remaining: 11.2s
11:     learn: 0.4709329      total: 709ms     remaining: 11.1s
12:     learn: 0.4653780      total: 773ms     remaining: 11.1s
13:     learn: 0.4623392      total: 836ms     remaining: 11.1s
14:     learn: 0.4603562      total: 928ms     remaining: 11.4s
15:     learn: 0.4579162      total: 994ms     remaining: 11.4s
16:     learn: 0.4555661      total: 1.05s     remaining: 11.4s
17:     learn: 0.4543596      total: 1.12s     remaining: 11.3s
18:     learn: 0.4524041      total: 1.17s     remaining: 11.2s
19:     learn: 0.4512269      total: 1.22s     remaining: 10.9s
20:     learn: 0.4501514      total: 1.27s     remaining: 10.8s
21:     learn: 0.4493098      total: 1.33s     remaining: 10.8s
22:     learn: 0.4483636      total: 1.38s     remaining: 10.6s
23:     learn: 0.4474769      total: 1.43s     remaining: 10.5s
24:     learn: 0.4466925      total: 1.48s     remaining: 10.4s
25:     learn: 0.4459567      total: 1.56s     remaining: 10.4s
26:     learn: 0.4453008      total: 1.61s     remaining: 10.3s
27:     learn: 0.4446940      total: 1.66s     remaining: 10.2s
28:     learn: 0.4436360      total: 1.74s     remaining: 10.3s
29:     learn: 0.4431052      total: 1.81s     remaining: 10.2s
30:     learn: 0.4424159      total: 1.86s     remaining: 10.2s
31:     learn: 0.4417688      total: 1.9s      remaining: 10s
32:     learn: 0.4411796      total: 1.95s     remaining: 9.89s
33:     learn: 0.4407392      total: 2.03s     remaining: 9.93s
34:     learn: 0.4406425      total: 2.07s     remaining: 9.75s
35:     learn: 0.4400644      total: 2.13s     remaining: 9.72s
36:     learn: 0.4395419      total: 2.2s      remaining: 9.71s
37:     learn: 0.4392554      total: 2.26s     remaining: 9.63s
38:     learn: 0.4386325      total: 2.33s     remaining: 9.63s
39:     learn: 0.4382769      total: 2.39s     remaining: 9.57s
40:     learn: 0.4380894      total: 2.46s     remaining: 9.53s
41:     learn: 0.4378498      total: 2.51s     remaining: 9.44s
42:     learn: 0.4373552      total: 2.58s     remaining: 9.41s
43:     learn: 0.4365647      total: 2.63s     remaining: 9.34s
44:     learn: 0.4361986      total: 2.68s     remaining: 9.24s
45:     learn: 0.4359785      total: 2.75s     remaining: 9.19s
46:     learn: 0.4356983      total: 2.79s     remaining: 9.1s
47:     learn: 0.4347876      total: 2.85s     remaining: 9.03s
```

```
48:      learn: 0.4345741        total: 2.9s      remaining: 8.93s
49:      learn: 0.4339621        total: 2.96s     remaining: 8.87s
50:      learn: 0.4335667        total: 3s        remaining: 8.78s
51:      learn: 0.4333627        total: 3.06s     remaining: 8.71s
52:      learn: 0.4331278        total: 3.12s     remaining: 8.64s
53:      learn: 0.4325319        total: 3.17s     remaining: 8.57s
54:      learn: 0.4322024        total: 3.25s     remaining: 8.58s
55:      learn: 0.4317894        total: 3.31s     remaining: 8.5s
56:      learn: 0.4315703        total: 3.36s     remaining: 8.44s
57:      learn: 0.4313886        total: 3.42s     remaining: 8.38s
58:      learn: 0.4310116        total: 3.48s     remaining: 8.32s
59:      learn: 0.4307099        total: 3.53s     remaining: 8.24s
60:      learn: 0.4302675        total: 3.6s      remaining: 8.2s
61:      learn: 0.4300640        total: 3.65s     remaining: 8.12s
62:      learn: 0.4299942        total: 3.69s     remaining: 8.03s
63:      learn: 0.4299470        total: 3.74s     remaining: 7.94s
64:      learn: 0.4297811        total: 3.78s     remaining: 7.85s
65:      learn: 0.4296569        total: 3.84s     remaining: 7.79s
66:      learn: 0.4289494        total: 3.89s     remaining: 7.72s
67:      learn: 0.4282771        total: 3.95s     remaining: 7.66s
68:      learn: 0.4276041        total: 4s        remaining: 7.59s
69:      learn: 0.4274323        total: 4.05s     remaining: 7.52s
70:      learn: 0.4270943        total: 4.1s      remaining: 7.45s
71:      learn: 0.4262924        total: 4.15s     remaining: 7.38s
72:      learn: 0.4260711        total: 4.22s     remaining: 7.34s
73:      learn: 0.4260258        total: 4.28s     remaining: 7.29s
74:      learn: 0.4259599        total: 4.34s     remaining: 7.23s
75:      learn: 0.4258721        total: 4.39s     remaining: 7.16s
76:      learn: 0.4257523        total: 4.44s     remaining: 7.1s
77:      learn: 0.4256559        total: 4.5s      remaining: 7.03s
78:      learn: 0.4253621        total: 4.55s     remaining: 6.97s
79:      learn: 0.4248110        total: 4.61s     remaining: 6.92s
80:      learn: 0.4246090        total: 4.67s     remaining: 6.85s
81:      learn: 0.4243752        total: 4.72s     remaining: 6.8s
82:      learn: 0.4239944        total: 4.8s      remaining: 6.76s
83:      learn: 0.4237870        total: 4.86s     remaining: 6.71s
84:      learn: 0.4234962        total: 4.92s     remaining: 6.66s
85:      learn: 0.4232646        total: 4.98s     remaining: 6.61s
86:      learn: 0.4229134        total: 5.05s     remaining: 6.56s
87:      learn: 0.4225579        total: 5.11s     remaining: 6.5s
88:      learn: 0.4223190        total: 5.16s     remaining: 6.44s
89:      learn: 0.4218090        total: 5.23s     remaining: 6.39s
90:      learn: 0.4214736        total: 5.29s     remaining: 6.33s
91:      learn: 0.4213253        total: 5.35s     remaining: 6.28s
92:      learn: 0.4209156        total: 5.42s     remaining: 6.24s
93:      learn: 0.4206969        total: 5.5s      remaining: 6.21s
94:      learn: 0.4205278        total: 5.6s      remaining: 6.19s
95:      learn: 0.4202266        total: 5.67s     remaining: 6.14s
```

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96:     learn: 0.4199278     total: 5.73s     remaining: 6.08s
97:     learn: 0.4193110     total: 5.79s     remaining: 6.02s
98:     learn: 0.4191757     total: 5.85s     remaining: 5.96s
99:     learn: 0.4185161     total: 5.92s     remaining: 5.92s
100:    learn: 0.4181982     total: 5.97s     remaining: 5.85s
101:    learn: 0.4177507     total: 6.04s     remaining: 5.8s
102:    learn: 0.4175299     total: 6.1s      remaining: 5.74s
103:    learn: 0.4174969     total: 6.15s     remaining: 5.68s
104:    learn: 0.4174342     total: 6.2s      remaining: 5.61s
105:    learn: 0.4172648     total: 6.26s     remaining: 5.55s
106:    learn: 0.4169742     total: 6.33s     remaining: 5.5s
107:    learn: 0.4166383     total: 6.4s      remaining: 5.45s
108:    learn: 0.4166020     total: 6.46s     remaining: 5.39s
109:    learn: 0.4162693     total: 6.52s     remaining: 5.34s
110:    learn: 0.4162580     total: 6.58s     remaining: 5.27s
111:    learn: 0.4159633     total: 6.64s     remaining: 5.21s
112:    learn: 0.4159525     total: 6.72s     remaining: 5.17s
113:    learn: 0.4159283     total: 6.78s     remaining: 5.12s
114:    learn: 0.4155265     total: 6.84s     remaining: 5.06s
115:    learn: 0.4154430     total: 6.9s      remaining: 5s
116:    learn: 0.4151557     total: 6.96s     remaining: 4.94s
117:    learn: 0.4150390     total: 7.03s     remaining: 4.88s
118:    learn: 0.4148846     total: 7.09s     remaining: 4.82s
119:    learn: 0.4143118     total: 7.16s     remaining: 4.77s
120:    learn: 0.4140385     total: 7.22s     remaining: 4.72s
121:    learn: 0.4136610     total: 7.35s     remaining: 4.7s
122:    learn: 0.4135125     total: 7.42s     remaining: 4.64s
123:    learn: 0.4131617     total: 7.5s      remaining: 4.59s
124:    learn: 0.4131440     total: 7.55s     remaining: 4.53s
125:    learn: 0.4129158     total: 7.62s     remaining: 4.47s
126:    learn: 0.4125044     total: 7.67s     remaining: 4.41s
127:    learn: 0.4124865     total: 7.73s     remaining: 4.35s
128:    learn: 0.4123445     total: 7.78s     remaining: 4.28s
129:    learn: 0.4121142     total: 7.86s     remaining: 4.23s
130:    learn: 0.4117215     total: 7.93s     remaining: 4.18s
131:    learn: 0.4117196     total: 8.01s     remaining: 4.13s
132:    learn: 0.4115040     total: 8.11s     remaining: 4.08s
133:    learn: 0.4114436     total: 8.16s     remaining: 4.02s
134:    learn: 0.4112467     total: 8.22s     remaining: 3.96s
135:    learn: 0.4110809     total: 8.31s     remaining: 3.91s
136:    learn: 0.4110783     total: 8.37s     remaining: 3.85s
137:    learn: 0.4110522     total: 8.42s     remaining: 3.78s
138:    learn: 0.4109838     total: 8.47s     remaining: 3.72s
139:    learn: 0.4109604     total: 8.53s     remaining: 3.65s
140:    learn: 0.4107356     total: 8.6s      remaining: 3.6s
141:    learn: 0.4103475     total: 8.65s     remaining: 3.54s
142:    learn: 0.4102379     total: 8.72s     remaining: 3.48s
143:    learn: 0.4099220     total: 8.78s     remaining: 3.42s
```

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144:    learn: 0.4096991    total: 8.85s    remaining: 3.36s
145:    learn: 0.4094804    total: 8.91s    remaining: 3.3s
146:    learn: 0.4094390    total: 8.97s    remaining: 3.23s
147:    learn: 0.4093270    total: 9.03s    remaining: 3.17s
148:    learn: 0.4092185    total: 9.11s    remaining: 3.12s
149:    learn: 0.4087492    total: 9.18s    remaining: 3.06s
150:    learn: 0.4086202    total: 9.24s    remaining: 3s
151:    learn: 0.4084293    total: 9.31s    remaining: 2.94s
152:    learn: 0.4083053    total: 9.4s     remaining: 2.89s
153:    learn: 0.4081169    total: 9.45s    remaining: 2.82s
154:    learn: 0.4078267    total: 9.52s    remaining: 2.76s
155:    learn: 0.4078240    total: 9.59s    remaining: 2.71s
156:    learn: 0.4074569    total: 9.65s    remaining: 2.64s
157:    learn: 0.4073658    total: 9.72s    remaining: 2.58s
158:    learn: 0.4073622    total: 9.78s    remaining: 2.52s
159:    learn: 0.4072230    total: 9.84s    remaining: 2.46s
160:    learn: 0.4072077    total: 9.9s     remaining: 2.4s
161:    learn: 0.4071466    total: 9.95s    remaining: 2.33s
162:    learn: 0.4071377    total: 10s      remaining: 2.27s
163:    learn: 0.4069279    total: 10.1s    remaining: 2.21s
164:    learn: 0.4067674    total: 10.1s    remaining: 2.15s
165:    learn: 0.4065443    total: 10.2s    remaining: 2.09s
166:    learn: 0.4064730    total: 10.3s    remaining: 2.03s
167:    learn: 0.4063964    total: 10.3s    remaining: 1.97s
168:    learn: 0.4062484    total: 10.4s    remaining: 1.91s
169:    learn: 0.4059737    total: 10.5s    remaining: 1.85s
170:    learn: 0.4059736    total: 10.5s    remaining: 1.78s
171:    learn: 0.4058096    total: 10.6s    remaining: 1.73s
172:    learn: 0.4053744    total: 10.7s    remaining: 1.66s
173:    learn: 0.4052561    total: 10.7s    remaining: 1.6s
174:    learn: 0.4050018    total: 10.8s    remaining: 1.54s
175:    learn: 0.4048834    total: 10.8s    remaining: 1.48s
176:    learn: 0.4048248    total: 10.9s    remaining: 1.42s
177:    learn: 0.4046076    total: 11s      remaining: 1.35s
178:    learn: 0.4041276    total: 11s      remaining: 1.29s
179:    learn: 0.4037580    total: 11.1s    remaining: 1.23s
180:    learn: 0.4035468    total: 11.2s    remaining: 1.17s
181:    learn: 0.4035149    total: 11.2s    remaining: 1.11s
182:    learn: 0.4033371    total: 11.3s    remaining: 1.05s
183:    learn: 0.4031831    total: 11.4s    remaining: 990ms
184:    learn: 0.4027513    total: 11.4s    remaining: 927ms
185:    learn: 0.4027088    total: 11.5s    remaining: 865ms
186:    learn: 0.4025839    total: 11.5s    remaining: 803ms
187:    learn: 0.4025032    total: 11.6s    remaining: 741ms
188:    learn: 0.4023987    total: 11.7s    remaining: 679ms
189:    learn: 0.4022411    total: 11.7s    remaining: 617ms
190:    learn: 0.4020004    total: 11.8s    remaining: 557ms
191:    learn: 0.4017541    total: 11.9s    remaining: 495ms
```

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192:    learn: 0.4016223      total: 12s      remaining: 434ms
193:    learn: 0.4015419      total: 12s      remaining: 371ms
194:    learn: 0.4014664      total: 12.1s    remaining: 309ms
195:    learn: 0.4014155      total: 12.1s    remaining: 247ms
196:    learn: 0.4012987      total: 12.2s    remaining: 186ms
197:    learn: 0.4012977      total: 12.2s    remaining: 124ms
198:    learn: 0.4010988      total: 12.4s    remaining: 62.2ms
199:    learn: 0.4009812      total: 12.4s    remaining: 0us
Mean train f1-score of data (CV) 7 is : 0.8142011310095804
Mean test f1-score of data (CV) 7 is : 0.8009787314720441
```

```
Shape of data 8 is :
(27303, 10)
Distribution of 8 is :
Yes    14102
No     13201
Name: TIMELY_RESPONSE, dtype: int64

<IPython.core.display.HTML object>

MetricVisualizer(layout=Layout(align_self='stretch', height='500px'))

Train f1_score [Yes]: for data 8 is : 0.8119716334789053
Train f1_score [No]: for data 8 is : 0.8182627889865625
```

	precision	recall	f1-score	support
No	0.78	0.84	0.81	924
Yes	0.84	0.77	0.81	988
accuracy			0.81	1912
macro avg	0.81	0.81	0.81	1912
weighted avg	0.81	0.81	0.81	1912
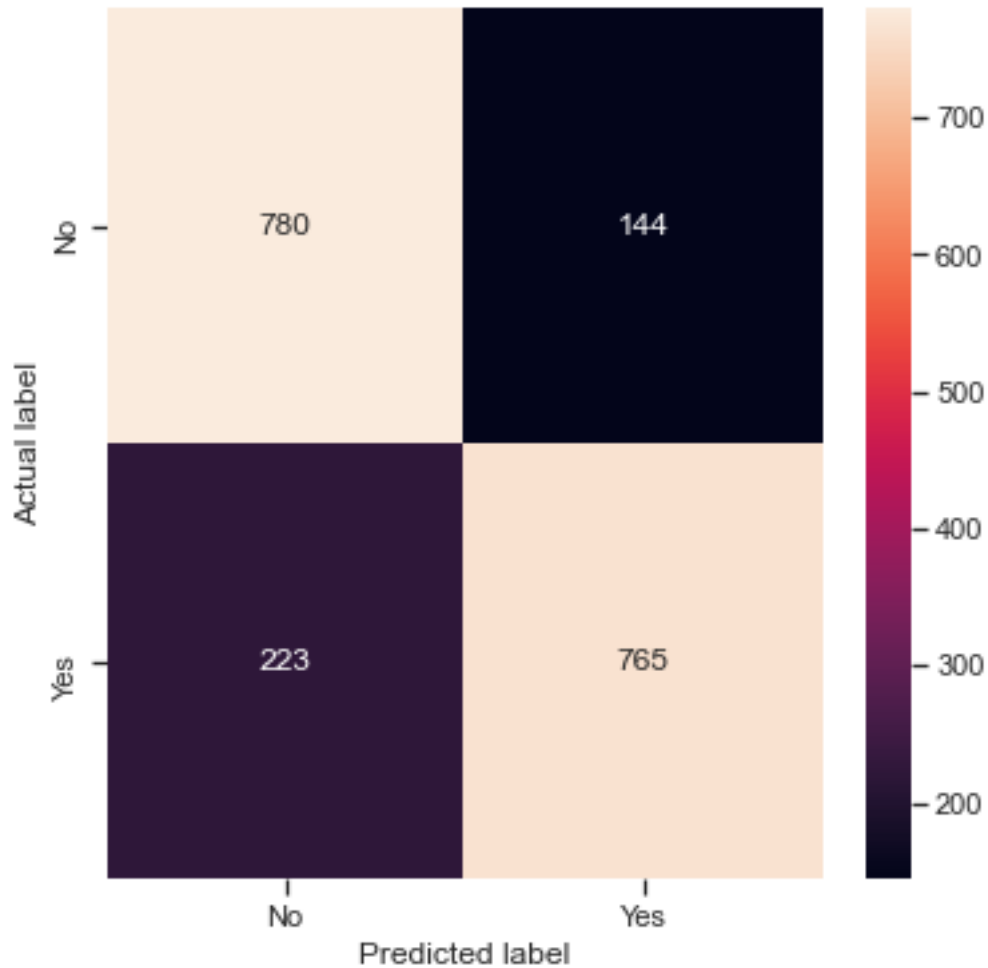
Cross validation result for data 8 is :

```
0:      learn: 0.6462468      total: 48.3ms   remaining: 9.62s
1:      learn: 0.5969066      total: 99.9ms   remaining: 9.89s
2:      learn: 0.5626447      total: 159ms    remaining: 10.4s
3:      learn: 0.5425519      total: 208ms    remaining: 10.2s
4:      learn: 0.5254380      total: 289ms    remaining: 11.3s
5:      learn: 0.5140207      total: 350ms    remaining: 11.3s
6:      learn: 0.4991198      total: 404ms    remaining: 11.1s
7:      learn: 0.4917475      total: 453ms    remaining: 10.9s
8:      learn: 0.4854937      total: 510ms    remaining: 10.8s
9:      learn: 0.4786112      total: 574ms    remaining: 10.9s
10:     learn: 0.4733411      total: 636ms    remaining: 10.9s
11:     learn: 0.4682895      total: 692ms    remaining: 10.8s
12:     learn: 0.4640478      total: 736ms    remaining: 10.6s
13:     learn: 0.4603177      total: 796ms    remaining: 10.6s
14:     learn: 0.4582351      total: 843ms    remaining: 10.4s
15:     learn: 0.4558098      total: 919ms    remaining: 10.6s
```

```
16:     learn: 0.4545269     total: 989ms     remaining: 10.6s
17:     learn: 0.4530990     total: 1.04s     remaining: 10.5s
18:     learn: 0.4515638     total: 1.09s     remaining: 10.4s
19:     learn: 0.4496918     total: 1.14s     remaining: 10.3s
20:     learn: 0.4484579     total: 1.2s      remaining: 10.2s
21:     learn: 0.4474139     total: 1.26s     remaining: 10.2s
22:     learn: 0.4465421     total: 1.33s     remaining: 10.2s
23:     learn: 0.4457828     total: 1.38s     remaining: 10.1s
24:     learn: 0.4450595     total: 1.42s     remaining: 9.94s
25:     learn: 0.4437188     total: 1.48s     remaining: 9.94s
26:     learn: 0.4429854     total: 1.54s     remaining: 9.86s
27:     learn: 0.4421698     total: 1.59s     remaining: 9.77s
28:     learn: 0.4414475     total: 1.64s     remaining: 9.66s
29:     learn: 0.4411724     total: 1.72s     remaining: 9.74s
30:     learn: 0.4411217     total: 1.76s     remaining: 9.6s
31:     learn: 0.4405340     total: 1.82s     remaining: 9.58s
32:     learn: 0.4400528     total: 1.89s     remaining: 9.55s
33:     learn: 0.4392001     total: 1.94s     remaining: 9.48s
34:     learn: 0.4387395     total: 2s        remaining: 9.4s
35:     learn: 0.4383667     total: 2.04s     remaining: 9.3s
36:     learn: 0.4377192     total: 2.11s     remaining: 9.29s
37:     learn: 0.4373894     total: 2.16s     remaining: 9.21s
38:     learn: 0.4369131     total: 2.21s     remaining: 9.14s
39:     learn: 0.4365269     total: 2.27s     remaining: 9.08s
40:     learn: 0.4356594     total: 2.32s     remaining: 9.01s
41:     learn: 0.4354854     total: 2.39s     remaining: 9s
42:     learn: 0.4345920     total: 2.46s     remaining: 8.98s
43:     learn: 0.4342705     total: 2.52s     remaining: 8.94s
44:     learn: 0.4337160     total: 2.57s     remaining: 8.85s
45:     learn: 0.4333412     total: 2.61s     remaining: 8.75s
46:     learn: 0.4332239     total: 2.7s      remaining: 8.78s
47:     learn: 0.4326791     total: 2.75s     remaining: 8.71s
48:     learn: 0.4320977     total: 2.81s     remaining: 8.67s
49:     learn: 0.4320193     total: 2.88s     remaining: 8.65s
50:     learn: 0.4314478     total: 2.94s     remaining: 8.59s
51:     learn: 0.4313292     total: 2.99s     remaining: 8.52s
52:     learn: 0.4311064     total: 3.05s     remaining: 8.46s
53:     learn: 0.4307585     total: 3.12s     remaining: 8.43s
54:     learn: 0.4304396     total: 3.17s     remaining: 8.36s
55:     learn: 0.4301974     total: 3.22s     remaining: 8.28s
56:     learn: 0.4293975     total: 3.27s     remaining: 8.22s
57:     learn: 0.4287177     total: 3.34s     remaining: 8.18s
58:     learn: 0.4284520     total: 3.39s     remaining: 8.11s
59:     learn: 0.4282051     total: 3.46s     remaining: 8.07s
60:     learn: 0.4280008     total: 3.51s     remaining: 8.01s
61:     learn: 0.4277698     total: 3.57s     remaining: 7.96s
62:     learn: 0.4275626     total: 3.63s     remaining: 7.89s
63:     learn: 0.4273277     total: 3.7s      remaining: 7.86s
```

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64:     learn: 0.4270864      total: 3.74s     remaining: 7.77s
65:     learn: 0.4268304      total: 3.82s     remaining: 7.75s
66:     learn: 0.4266799      total: 3.87s     remaining: 7.67s
67:     learn: 0.4260427      total: 3.93s     remaining: 7.63s
68:     learn: 0.4256379      total: 3.99s     remaining: 7.58s
69:     learn: 0.4253937      total: 4.05s     remaining: 7.51s
70:     learn: 0.4252178      total: 4.1s      remaining: 7.45s
71:     learn: 0.4250963      total: 4.16s     remaining: 7.39s
72:     learn: 0.4248548      total: 4.22s     remaining: 7.34s
73:     learn: 0.4247523      total: 4.27s     remaining: 7.27s
74:     learn: 0.4244101      total: 4.32s     remaining: 7.21s
75:     learn: 0.4243436      total: 4.37s     remaining: 7.13s
76:     learn: 0.4242030      total: 4.46s     remaining: 7.12s
77:     learn: 0.4242030      total: 4.49s     remaining: 7.02s
78:     learn: 0.4240574      total: 4.54s     remaining: 6.95s
79:     learn: 0.4237041      total: 4.59s     remaining: 6.89s
80:     learn: 0.4237041      total: 4.63s     remaining: 6.8s
81:     learn: 0.4235304      total: 4.69s     remaining: 6.75s
82:     learn: 0.4233719      total: 4.75s     remaining: 6.7s
83:     learn: 0.4232580      total: 4.79s     remaining: 6.62s
84:     learn: 0.4231243      total: 4.84s     remaining: 6.55s
85:     learn: 0.4230289      total: 4.9s      remaining: 6.5s
86:     learn: 0.4227637      total: 4.94s     remaining: 6.42s
87:     learn: 0.4223971      total: 4.99s     remaining: 6.35s
88:     learn: 0.4221654      total: 5.04s     remaining: 6.28s
89:     learn: 0.4220840      total: 5.1s      remaining: 6.24s
90:     learn: 0.4218041      total: 5.16s     remaining: 6.17s
91:     learn: 0.4217490      total: 5.21s     remaining: 6.11s
92:     learn: 0.4212889      total: 5.26s     remaining: 6.05s
93:     learn: 0.4211955      total: 5.31s     remaining: 5.99s
94:     learn: 0.4210322      total: 5.39s     remaining: 5.96s
95:     learn: 0.4204489      total: 5.46s     remaining: 5.92s
96:     learn: 0.4200331      total: 5.51s     remaining: 5.85s
97:     learn: 0.4194186      total: 5.56s     remaining: 5.79s
98:     learn: 0.4193186      total: 5.63s     remaining: 5.74s
99:     learn: 0.4191128      total: 5.7s      remaining: 5.7s
100:    learn: 0.4187700      total: 5.75s     remaining: 5.64s
101:    learn: 0.4184970      total: 5.81s     remaining: 5.58s
102:    learn: 0.4184970      total: 5.83s     remaining: 5.49s
103:    learn: 0.4182873      total: 5.88s     remaining: 5.42s
104:    learn: 0.4182245      total: 5.93s     remaining: 5.36s
105:    learn: 0.4180149      total: 5.99s     remaining: 5.31s
106:    learn: 0.4178830      total: 6.03s     remaining: 5.25s
107:    learn: 0.4177479      total: 6.1s      remaining: 5.2s
108:    learn: 0.4174494      total: 6.17s     remaining: 5.15s
109:    learn: 0.4172315      total: 6.24s     remaining: 5.11s
110:    learn: 0.4171256      total: 6.3s      remaining: 5.05s
111:    learn: 0.4168464      total: 6.34s     remaining: 4.98s
```

```
112:    learn: 0.4167449    total: 6.39s    remaining: 4.92s
113:    learn: 0.4165709    total: 6.46s    remaining: 4.88s
114:    learn: 0.4163101    total: 6.53s    remaining: 4.82s
115:    learn: 0.4160707    total: 6.62s    remaining: 4.79s
116:    learn: 0.4158405    total: 6.7s     remaining: 4.75s
117:    learn: 0.4152409    total: 6.77s    remaining: 4.7s
118:    learn: 0.4151018    total: 6.82s    remaining: 4.64s
119:    learn: 0.4150313    total: 6.88s    remaining: 4.59s
120:    learn: 0.4149281    total: 6.94s    remaining: 4.53s
121:    learn: 0.4148107    total: 7.01s    remaining: 4.48s
122:    learn: 0.4146910    total: 7.07s    remaining: 4.43s
123:    learn: 0.4144833    total: 7.13s    remaining: 4.37s
124:    learn: 0.4141395    total: 7.18s    remaining: 4.3s
125:    learn: 0.4140389    total: 7.22s    remaining: 4.24s
126:    learn: 0.4139551    total: 7.3s     remaining: 4.2s
127:    learn: 0.4138500    total: 7.34s    remaining: 4.13s
128:    learn: 0.4136100    total: 7.39s    remaining: 4.07s
129:    learn: 0.4129747    total: 7.45s    remaining: 4.01s
130:    learn: 0.4128312    total: 7.5s     remaining: 3.95s
131:    learn: 0.4127000    total: 7.55s    remaining: 3.89s
132:    learn: 0.4123933    total: 7.6s     remaining: 3.83s
133:    learn: 0.4122509    total: 7.65s    remaining: 3.77s
134:    learn: 0.4119960    total: 7.7s     remaining: 3.71s
135:    learn: 0.4117255    total: 7.77s    remaining: 3.65s
136:    learn: 0.4116071    total: 7.82s    remaining: 3.6s
137:    learn: 0.4112378    total: 7.89s    remaining: 3.55s
138:    learn: 0.4111234    total: 7.95s    remaining: 3.49s
139:    learn: 0.4110670    total: 8.01s    remaining: 3.43s
140:    learn: 0.4109728    total: 8.05s    remaining: 3.37s
141:    learn: 0.4108410    total: 8.11s    remaining: 3.31s
142:    learn: 0.4106023    total: 8.17s    remaining: 3.25s
143:    learn: 0.4105293    total: 8.23s    remaining: 3.2s
144:    learn: 0.4103923    total: 8.28s    remaining: 3.14s
145:    learn: 0.4099092    total: 8.33s    remaining: 3.08s
146:    learn: 0.4098169    total: 8.39s    remaining: 3.02s
147:    learn: 0.4096123    total: 8.45s    remaining: 2.97s
148:    learn: 0.4095598    total: 8.51s    remaining: 2.91s
149:    learn: 0.4094699    total: 8.56s    remaining: 2.85s
150:    learn: 0.4091856    total: 8.61s    remaining: 2.79s
151:    learn: 0.4090464    total: 8.69s    remaining: 2.75s
152:    learn: 0.4088503    total: 8.77s    remaining: 2.69s
153:    learn: 0.4087684    total: 8.82s    remaining: 2.63s
154:    learn: 0.4086116    total: 8.9s     remaining: 2.58s
155:    learn: 0.4085107    total: 8.97s    remaining: 2.53s
156:    learn: 0.4082562    total: 9.02s    remaining: 2.47s
157:    learn: 0.4081686    total: 9.1s     remaining: 2.42s
158:    learn: 0.4080763    total: 9.15s    remaining: 2.36s
159:    learn: 0.4079653    total: 9.2s     remaining: 2.3s
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160:      learn: 0.4076303      total: 9.26s      remaining: 2.24s
161:      learn: 0.4072103      total: 9.33s      remaining: 2.19s
162:      learn: 0.4070906      total: 9.39s      remaining: 2.13s
163:      learn: 0.4069884      total: 9.45s      remaining: 2.07s
164:      learn: 0.4069134      total: 9.5s       remaining: 2.01s
165:      learn: 0.4067067      total: 9.57s      remaining: 1.96s
166:      learn: 0.4063842      total: 9.63s      remaining: 1.9s
167:      learn: 0.4062600      total: 9.69s      remaining: 1.85s
168:      learn: 0.4060251      total: 9.75s      remaining: 1.79s
169:      learn: 0.4058850      total: 9.81s      remaining: 1.73s
170:      learn: 0.4057937      total: 9.86s      remaining: 1.67s
171:      learn: 0.4055275      total: 9.93s      remaining: 1.62s
172:      learn: 0.4052248      total: 9.99s      remaining: 1.56s
173:      learn: 0.4050389      total: 10.1s      remaining: 1.51s
174:      learn: 0.4050135      total: 10.1s      remaining: 1.45s
175:      learn: 0.4048787      total: 10.2s      remaining: 1.39s
176:      learn: 0.4046144      total: 10.3s      remaining: 1.33s
177:      learn: 0.4043500      total: 10.3s      remaining: 1.27s
178:      learn: 0.4042495      total: 10.4s      remaining: 1.22s
179:      learn: 0.4041401      total: 10.5s      remaining: 1.16s
180:      learn: 0.4040175      total: 10.5s      remaining: 1.11s
181:      learn: 0.4038885      total: 10.6s      remaining: 1.05s
182:      learn: 0.4036253      total: 10.7s      remaining: 992ms
183:      learn: 0.4035965      total: 10.7s      remaining: 933ms
184:      learn: 0.4035116      total: 10.8s      remaining: 875ms
185:      learn: 0.4033827      total: 10.9s      remaining: 817ms
186:      learn: 0.4032315      total: 10.9s      remaining: 759ms
187:      learn: 0.4030572      total: 11s        remaining: 701ms
188:      learn: 0.4029305      total: 11s        remaining: 643ms
189:      learn: 0.4027198      total: 11.1s      remaining: 585ms
190:      learn: 0.4025222      total: 11.2s      remaining: 528ms
191:      learn: 0.4023585      total: 11.3s      remaining: 469ms
192:      learn: 0.4021939      total: 11.3s      remaining: 410ms
193:      learn: 0.4019460      total: 11.4s      remaining: 352ms
194:      learn: 0.4018397      total: 11.5s      remaining: 294ms
195:      learn: 0.4016176      total: 11.5s      remaining: 235ms
196:      learn: 0.4014989      total: 11.6s      remaining: 176ms
197:      learn: 0.4012616      total: 11.7s      remaining: 118ms
198:      learn: 0.4010419      total: 11.8s      remaining: 59.2ms
199:      learn: 0.4009690      total: 11.8s      remaining: 0us
0:        learn: 0.6456798      total: 58.9ms     remaining: 11.7s
1:        learn: 0.5984956      total: 116ms      remaining: 11.5s
2:        learn: 0.5748684      total: 167ms      remaining: 11s
3:        learn: 0.5515311      total: 226ms      remaining: 11.1s
4:        learn: 0.5363977      total: 286ms      remaining: 11.2s
5:        learn: 0.5184521      total: 332ms      remaining: 10.7s
6:        learn: 0.5084278      total: 386ms      remaining: 10.6s
7:        learn: 0.4958621      total: 437ms      remaining: 10.5s
```

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8:       learn: 0.4902464      total: 460ms      remaining: 9.76s
9:       learn: 0.4833630      total: 516ms      remaining: 9.8s
10:      learn: 0.4768572      total: 588ms      remaining: 10.1s
11:      learn: 0.4711552      total: 679ms      remaining: 10.6s
12:      learn: 0.4669833      total: 730ms      remaining: 10.5s
13:      learn: 0.4636106      total: 797ms      remaining: 10.6s
14:      learn: 0.4612136      total: 865ms      remaining: 10.7s
15:      learn: 0.4595534      total: 925ms      remaining: 10.6s
16:      learn: 0.4568185      total: 978ms      remaining: 10.5s
17:      learn: 0.4550671      total: 1.05s      remaining: 10.6s
18:      learn: 0.4529383      total: 1.12s      remaining: 10.6s
19:      learn: 0.4515994      total: 1.16s      remaining: 10.4s
20:      learn: 0.4507191      total: 1.23s      remaining: 10.4s
21:      learn: 0.4496314      total: 1.27s      remaining: 10.3s
22:      learn: 0.4488870      total: 1.32s      remaining: 10.2s
23:      learn: 0.4479358      total: 1.37s      remaining: 10.1s
24:      learn: 0.4469658      total: 1.43s      remaining: 10s
25:      learn: 0.4455962      total: 1.5s       remaining: 10s
26:      learn: 0.4448643      total: 1.55s      remaining: 9.93s
27:      learn: 0.4439823      total: 1.6s       remaining: 9.85s
28:      learn: 0.4425159      total: 1.66s      remaining: 9.81s
29:      learn: 0.4421221      total: 1.71s      remaining: 9.69s
30:      learn: 0.4417709      total: 1.75s      remaining: 9.54s
31:      learn: 0.4414758      total: 1.8s       remaining: 9.47s
32:      learn: 0.4406236      total: 1.87s      remaining: 9.47s
33:      learn: 0.4402506      total: 1.93s      remaining: 9.43s
34:      learn: 0.4398281      total: 2s         remaining: 9.44s
35:      learn: 0.4392088      total: 2.07s      remaining: 9.43s
36:      learn: 0.4382223      total: 2.12s      remaining: 9.35s
37:      learn: 0.4372392      total: 2.18s      remaining: 9.3s
38:      learn: 0.4366933      total: 2.25s      remaining: 9.29s
39:      learn: 0.4361800      total: 2.44s      remaining: 9.78s
40:      learn: 0.4358226      total: 2.67s      remaining: 10.4s
41:      learn: 0.4354362      total: 2.8s       remaining: 10.5s
42:      learn: 0.4349254      total: 2.92s      remaining: 10.7s
43:      learn: 0.4347291      total: 3.05s      remaining: 10.8s
44:      learn: 0.4341678      total: 3.19s      remaining: 11s
45:      learn: 0.4334229      total: 3.27s      remaining: 10.9s
46:      learn: 0.4332682      total: 3.33s      remaining: 10.8s
47:      learn: 0.4331360      total: 3.43s      remaining: 10.9s
48:      learn: 0.4327033      total: 3.48s      remaining: 10.7s
49:      learn: 0.4324317      total: 3.54s      remaining: 10.6s
50:      learn: 0.4322115      total: 3.6s       remaining: 10.5s
51:      learn: 0.4319254      total: 3.7s       remaining: 10.5s
52:      learn: 0.4317292      total: 3.79s      remaining: 10.5s
53:      learn: 0.4312383      total: 3.9s       remaining: 10.5s
54:      learn: 0.4308722      total: 3.97s      remaining: 10.5s
55:      learn: 0.4302168      total: 4.08s      remaining: 10.5s
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56:      learn: 0.4299587      total: 4.17s      remaining: 10.5s
57:      learn: 0.4298034      total: 4.28s      remaining: 10.5s
58:      learn: 0.4293643      total: 4.34s      remaining: 10.4s
59:      learn: 0.4285399      total: 4.45s      remaining: 10.4s
60:      learn: 0.4284795      total: 4.52s      remaining: 10.3s
61:      learn: 0.4279352      total: 4.58s      remaining: 10.2s
62:      learn: 0.4277453      total: 4.63s      remaining: 10.1s
63:      learn: 0.4276015      total: 4.71s      remaining: 10s
64:      learn: 0.4270318      total: 4.76s      remaining: 9.89s
65:      learn: 0.4269667      total: 4.83s      remaining: 9.81s
66:      learn: 0.4266865      total: 4.93s      remaining: 9.79s
67:      learn: 0.4263461      total: 4.98s      remaining: 9.66s
68:      learn: 0.4257524      total: 5.05s      remaining: 9.58s
69:      learn: 0.4255430      total: 5.1s       remaining: 9.48s
70:      learn: 0.4252206      total: 5.16s      remaining: 9.37s
71:      learn: 0.4250817      total: 5.23s      remaining: 9.3s
72:      learn: 0.4244501      total: 5.3s       remaining: 9.22s
73:      learn: 0.4240845      total: 5.35s      remaining: 9.11s
74:      learn: 0.4237611      total: 5.41s      remaining: 9.01s
75:      learn: 0.4234342      total: 5.46s      remaining: 8.91s
76:      learn: 0.4231354      total: 5.51s      remaining: 8.81s
77:      learn: 0.4229698      total: 5.57s      remaining: 8.71s
78:      learn: 0.4226858      total: 5.63s      remaining: 8.62s
79:      learn: 0.4224769      total: 5.71s      remaining: 8.57s
80:      learn: 0.4222839      total: 5.79s      remaining: 8.51s
81:      learn: 0.4220786      total: 5.95s      remaining: 8.56s
82:      learn: 0.4217797      total: 6s         remaining: 8.46s
83:      learn: 0.4217108      total: 6.07s      remaining: 8.38s
84:      learn: 0.4215505      total: 6.15s      remaining: 8.31s
85:      learn: 0.4213151      total: 6.24s      remaining: 8.28s
86:      learn: 0.4208915      total: 6.31s      remaining: 8.2s
87:      learn: 0.4204419      total: 6.38s      remaining: 8.12s
88:      learn: 0.4203141      total: 6.44s      remaining: 8.04s
89:      learn: 0.4200250      total: 6.51s      remaining: 7.96s
90:      learn: 0.4195684      total: 6.63s      remaining: 7.94s
91:      learn: 0.4195021      total: 6.71s      remaining: 7.87s
92:      learn: 0.4190402      total: 6.77s      remaining: 7.79s
93:      learn: 0.4187153      total: 6.84s      remaining: 7.71s
94:      learn: 0.4184896      total: 6.91s      remaining: 7.63s
95:      learn: 0.4182406      total: 6.95s      remaining: 7.53s
96:      learn: 0.4181072      total: 7s         remaining: 7.43s
97:      learn: 0.4178651      total: 7.05s      remaining: 7.33s
98:      learn: 0.4176428      total: 7.09s      remaining: 7.24s
99:      learn: 0.4174098      total: 7.15s      remaining: 7.15s
100:     learn: 0.4171303      total: 7.21s      remaining: 7.07s
101:     learn: 0.4170022      total: 7.29s      remaining: 7s
102:     learn: 0.4163381      total: 7.35s      remaining: 6.92s
103:     learn: 0.4160500      total: 7.41s      remaining: 6.84s
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104:    learn: 0.4158261    total: 7.45s    remaining: 6.74s
105:    learn: 0.4157779    total: 7.51s    remaining: 6.66s
106:    learn: 0.4156629    total: 7.59s    remaining: 6.59s
107:    learn: 0.4154176    total: 7.65s    remaining: 6.51s
108:    learn: 0.4148684    total: 7.7s     remaining: 6.43s
109:    learn: 0.4147257    total: 7.76s    remaining: 6.35s
110:    learn: 0.4143218    total: 7.83s    remaining: 6.28s
111:    learn: 0.4141882    total: 7.88s    remaining: 6.19s
112:    learn: 0.4139955    total: 7.95s    remaining: 6.12s
113:    learn: 0.4137528    total: 8.01s    remaining: 6.04s
114:    learn: 0.4135509    total: 8.07s    remaining: 5.97s
115:    learn: 0.4133970    total: 8.12s    remaining: 5.88s
116:    learn: 0.4132420    total: 8.2s     remaining: 5.82s
117:    learn: 0.4124762    total: 8.27s    remaining: 5.75s
118:    learn: 0.4122955    total: 8.34s    remaining: 5.68s
119:    learn: 0.4122595    total: 8.42s    remaining: 5.61s
120:    learn: 0.4120869    total: 8.47s    remaining: 5.53s
121:    learn: 0.4115991    total: 8.54s    remaining: 5.46s
122:    learn: 0.4114732    total: 8.6s     remaining: 5.38s
123:    learn: 0.4109224    total: 8.67s    remaining: 5.31s
124:    learn: 0.4106354    total: 8.72s    remaining: 5.23s
125:    learn: 0.4104262    total: 8.78s    remaining: 5.16s
126:    learn: 0.4104226    total: 8.82s    remaining: 5.07s
127:    learn: 0.4101814    total: 8.88s    remaining: 4.99s
128:    learn: 0.4095908    total: 8.93s    remaining: 4.92s
129:    learn: 0.4094649    total: 8.98s    remaining: 4.84s
130:    learn: 0.4093175    total: 9.04s    remaining: 4.76s
131:    learn: 0.4090745    total: 9.1s     remaining: 4.69s
132:    learn: 0.4088626    total: 9.17s    remaining: 4.62s
133:    learn: 0.4087637    total: 9.25s    remaining: 4.56s
134:    learn: 0.4084297    total: 9.34s    remaining: 4.5s
135:    learn: 0.4082018    total: 9.41s    remaining: 4.43s
136:    learn: 0.4081528    total: 9.46s    remaining: 4.35s
137:    learn: 0.4078809    total: 9.52s    remaining: 4.28s
138:    learn: 0.4077767    total: 9.58s    remaining: 4.2s
139:    learn: 0.4076939    total: 9.65s    remaining: 4.14s
140:    learn: 0.4073899    total: 9.71s    remaining: 4.06s
141:    learn: 0.4070106    total: 9.77s    remaining: 3.99s
142:    learn: 0.4066217    total: 9.83s    remaining: 3.92s
143:    learn: 0.4065487    total: 9.89s    remaining: 3.85s
144:    learn: 0.4063284    total: 9.98s    remaining: 3.79s
145:    learn: 0.4059589    total: 10s      remaining: 3.71s
146:    learn: 0.4058279    total: 10.1s    remaining: 3.63s
147:    learn: 0.4055929    total: 10.1s    remaining: 3.56s
148:    learn: 0.4055878    total: 10.2s    remaining: 3.49s
149:    learn: 0.4055423    total: 10.2s    remaining: 3.41s
150:    learn: 0.4055035    total: 10.3s    remaining: 3.34s
151:    learn: 0.4054279    total: 10.3s    remaining: 3.26s
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152:    learn: 0.4050275      total: 10.4s    remaining: 3.19s
153:    learn: 0.4048162      total: 10.4s    remaining: 3.12s
154:    learn: 0.4046223      total: 10.5s    remaining: 3.05s
155:    learn: 0.4045155      total: 10.5s    remaining: 2.97s
156:    learn: 0.4042183      total: 10.6s    remaining: 2.9s
157:    learn: 0.4039419      total: 10.7s    remaining: 2.83s
158:    learn: 0.4037483      total: 10.7s    remaining: 2.76s
159:    learn: 0.4035748      total: 10.8s    remaining: 2.69s
160:    learn: 0.4034031      total: 10.8s    remaining: 2.62s
161:    learn: 0.4031403      total: 10.9s    remaining: 2.55s
162:    learn: 0.4031357      total: 10.9s    remaining: 2.48s
163:    learn: 0.4030849      total: 11s      remaining: 2.41s
164:    learn: 0.4030057      total: 11s      remaining: 2.34s
165:    learn: 0.4029162      total: 11.1s    remaining: 2.27s
166:    learn: 0.4028040      total: 11.2s    remaining: 2.2s
167:    learn: 0.4026000      total: 11.2s    remaining: 2.13s
168:    learn: 0.4024987      total: 11.3s    remaining: 2.07s
169:    learn: 0.4021035      total: 11.3s    remaining: 2s
170:    learn: 0.4020836      total: 11.4s    remaining: 1.93s
171:    learn: 0.4020216      total: 11.4s    remaining: 1.86s
172:    learn: 0.4018508      total: 11.5s    remaining: 1.79s
173:    learn: 0.4018064      total: 11.5s    remaining: 1.72s
174:    learn: 0.4016473      total: 11.6s    remaining: 1.66s
175:    learn: 0.4015504      total: 11.7s    remaining: 1.59s
176:    learn: 0.4014151      total: 11.7s    remaining: 1.52s
177:    learn: 0.4012480      total: 11.8s    remaining: 1.45s
178:    learn: 0.4011174      total: 11.8s    remaining: 1.39s
179:    learn: 0.4010077      total: 11.9s    remaining: 1.32s
180:    learn: 0.4008469      total: 11.9s    remaining: 1.25s
181:    learn: 0.4007149      total: 12s      remaining: 1.18s
182:    learn: 0.4004340      total: 12s      remaining: 1.12s
183:    learn: 0.4001936      total: 12.1s    remaining: 1.05s
184:    learn: 0.4000855      total: 12.1s    remaining: 985ms
185:    learn: 0.3999841      total: 12.2s    remaining: 918ms
186:    learn: 0.3997527      total: 12.2s    remaining: 851ms
187:    learn: 0.3996146      total: 12.3s    remaining: 785ms
188:    learn: 0.3994123      total: 12.4s    remaining: 720ms
189:    learn: 0.3992942      total: 12.4s    remaining: 654ms
190:    learn: 0.3991954      total: 12.5s    remaining: 591ms
191:    learn: 0.3988787      total: 12.6s    remaining: 525ms
192:    learn: 0.3987139      total: 12.7s    remaining: 459ms
193:    learn: 0.3986259      total: 12.7s    remaining: 393ms
194:    learn: 0.3983719      total: 12.8s    remaining: 327ms
195:    learn: 0.3982338      total: 12.8s    remaining: 262ms
196:    learn: 0.3982059      total: 12.9s    remaining: 196ms
197:    learn: 0.3980897      total: 12.9s    remaining: 130ms
198:    learn: 0.3979798      total: 13s      remaining: 65.2ms
199:    learn: 0.3977427      total: 13s      remaining: 0us
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0:      learn: 0.6330320      total: 50.3ms    remaining: 10s
1:      learn: 0.5981760      total: 103ms     remaining: 10.2s
2:      learn: 0.5615045      total: 191ms     remaining: 12.6s
3:      learn: 0.5382561      total: 242ms     remaining: 11.9s
4:      learn: 0.5203410      total: 293ms     remaining: 11.4s
5:      learn: 0.5076834      total: 343ms     remaining: 11.1s
6:      learn: 0.4976729      total: 425ms     remaining: 11.7s
7:      learn: 0.4892591      total: 478ms     remaining: 11.5s
8:      learn: 0.4798809      total: 538ms     remaining: 11.4s
9:      learn: 0.4735216      total: 599ms     remaining: 11.4s
10:     learn: 0.4686358      total: 663ms     remaining: 11.4s
11:     learn: 0.4653643      total: 709ms     remaining: 11.1s
12:     learn: 0.4618755      total: 762ms     remaining: 11s
13:     learn: 0.4589195      total: 824ms     remaining: 10.9s
14:     learn: 0.4561035      total: 874ms     remaining: 10.8s
15:     learn: 0.4541235      total: 940ms     remaining: 10.8s
16:     learn: 0.4517747      total: 992ms     remaining: 10.7s
17:     learn: 0.4491998      total: 1.05s     remaining: 10.6s
18:     learn: 0.4477897      total: 1.1s      remaining: 10.4s
19:     learn: 0.4465756      total: 1.14s     remaining: 10.3s
20:     learn: 0.4453239      total: 1.2s      remaining: 10.2s
21:     learn: 0.4446017      total: 1.24s     remaining: 10s
22:     learn: 0.4437109      total: 1.29s     remaining: 9.96s
23:     learn: 0.4428346      total: 1.36s     remaining: 9.99s
24:     learn: 0.4416931      total: 1.41s     remaining: 9.9s
25:     learn: 0.4407891      total: 1.48s     remaining: 9.9s
26:     learn: 0.4403022      total: 1.55s     remaining: 9.95s
27:     learn: 0.4397875      total: 1.61s     remaining: 9.91s
28:     learn: 0.4391233      total: 1.66s     remaining: 9.81s
29:     learn: 0.4377329      total: 1.72s     remaining: 9.76s
30:     learn: 0.4369636      total: 1.78s     remaining: 9.7s
31:     learn: 0.4367513      total: 1.84s     remaining: 9.65s
32:     learn: 0.4363868      total: 1.91s     remaining: 9.66s
33:     learn: 0.4356912      total: 1.97s     remaining: 9.61s
34:     learn: 0.4353473      total: 2.03s     remaining: 9.59s
35:     learn: 0.4352763      total: 2.06s     remaining: 9.37s
36:     learn: 0.4342739      total: 2.11s     remaining: 9.31s
37:     learn: 0.4340063      total: 2.17s     remaining: 9.24s
38:     learn: 0.4333557      total: 2.24s     remaining: 9.23s
39:     learn: 0.4330040      total: 2.29s     remaining: 9.16s
40:     learn: 0.4325186      total: 2.36s     remaining: 9.16s
41:     learn: 0.4320101      total: 2.45s     remaining: 9.21s
42:     learn: 0.4317113      total: 2.51s     remaining: 9.17s
43:     learn: 0.4313241      total: 2.57s     remaining: 9.11s
44:     learn: 0.4310887      total: 2.62s     remaining: 9.03s
45:     learn: 0.4306410      total: 2.68s     remaining: 8.97s
46:     learn: 0.4303711      total: 2.73s     remaining: 8.9s
47:     learn: 0.4301781      total: 2.8s      remaining: 8.88s
```

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48:     learn: 0.4299809       total: 2.86s      remaining: 8.81s
49:     learn: 0.4295664       total: 2.91s      remaining: 8.73s
50:     learn: 0.4292300       total: 2.99s      remaining: 8.75s
51:     learn: 0.4285583       total: 3.05s      remaining: 8.68s
52:     learn: 0.4283720       total: 3.1s       remaining: 8.59s
53:     learn: 0.4280738       total: 3.14s      remaining: 8.5s
54:     learn: 0.4277002       total: 3.19s      remaining: 8.41s
55:     learn: 0.4274598       total: 3.23s      remaining: 8.32s
56:     learn: 0.4271759       total: 3.29s      remaining: 8.25s
57:     learn: 0.4264825       total: 3.36s      remaining: 8.22s
58:     learn: 0.4262833       total: 3.42s      remaining: 8.16s
59:     learn: 0.4258250       total: 3.47s      remaining: 8.09s
60:     learn: 0.4250335       total: 3.52s      remaining: 8.01s
61:     learn: 0.4248942       total: 3.56s      remaining: 7.93s
62:     learn: 0.4245731       total: 3.62s      remaining: 7.88s
63:     learn: 0.4243360       total: 3.68s      remaining: 7.83s
64:     learn: 0.4238648       total: 3.74s      remaining: 7.78s
65:     learn: 0.4236328       total: 3.81s      remaining: 7.74s
66:     learn: 0.4231614       total: 3.86s      remaining: 7.67s
67:     learn: 0.4230444       total: 3.93s      remaining: 7.63s
68:     learn: 0.4228781       total: 3.99s      remaining: 7.58s
69:     learn: 0.4227776       total: 4.07s      remaining: 7.55s
70:     learn: 0.4220473       total: 4.13s      remaining: 7.51s
71:     learn: 0.4218029       total: 4.18s      remaining: 7.43s
72:     learn: 0.4216957       total: 4.23s      remaining: 7.36s
73:     learn: 0.4214288       total: 4.29s      remaining: 7.3s
74:     learn: 0.4210898       total: 4.35s      remaining: 7.25s
75:     learn: 0.4208693       total: 4.42s      remaining: 7.21s
76:     learn: 0.4208009       total: 4.48s      remaining: 7.15s
77:     learn: 0.4206049       total: 4.55s      remaining: 7.11s
78:     learn: 0.4203888       total: 4.6s       remaining: 7.04s
79:     learn: 0.4201256       total: 4.66s      remaining: 6.98s
80:     learn: 0.4199166       total: 4.73s      remaining: 6.95s
81:     learn: 0.4197327       total: 4.8s       remaining: 6.9s
82:     learn: 0.4194473       total: 4.86s      remaining: 6.86s
83:     learn: 0.4193228       total: 4.93s      remaining: 6.82s
84:     learn: 0.4190303       total: 5.01s      remaining: 6.78s
85:     learn: 0.4189894       total: 5.06s      remaining: 6.71s
86:     learn: 0.4189139       total: 5.12s      remaining: 6.65s
87:     learn: 0.4187385       total: 5.19s      remaining: 6.61s
88:     learn: 0.4186553       total: 5.28s      remaining: 6.58s
89:     learn: 0.4184407       total: 5.32s      remaining: 6.5s
90:     learn: 0.4179015       total: 5.38s      remaining: 6.44s
91:     learn: 0.4177874       total: 5.43s      remaining: 6.38s
92:     learn: 0.4174317       total: 5.48s      remaining: 6.31s
93:     learn: 0.4172995       total: 5.56s      remaining: 6.27s
94:     learn: 0.4171558       total: 5.63s      remaining: 6.22s
95:     learn: 0.4169562       total: 5.7s       remaining: 6.18s
```

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96:      learn: 0.4168561      total: 5.8s      remaining: 6.15s
97:      learn: 0.4166680      total: 5.87s     remaining: 6.11s
98:      learn: 0.4164535      total: 5.92s     remaining: 6.04s
99:      learn: 0.4162129      total: 5.98s     remaining: 5.98s
100:     learn: 0.4157513      total: 6.06s     remaining: 5.94s
101:     learn: 0.4156421      total: 6.12s     remaining: 5.88s
102:     learn: 0.4152938      total: 6.17s     remaining: 5.81s
103:     learn: 0.4150854      total: 6.23s     remaining: 5.75s
104:     learn: 0.4148239      total: 6.29s     remaining: 5.69s
105:     learn: 0.4144279      total: 6.37s     remaining: 5.65s
106:     learn: 0.4141204      total: 6.42s     remaining: 5.58s
107:     learn: 0.4139584      total: 6.47s     remaining: 5.51s
108:     learn: 0.4137960      total: 6.53s     remaining: 5.45s
109:     learn: 0.4135904      total: 6.59s     remaining: 5.4s
110:     learn: 0.4133990      total: 6.65s     remaining: 5.33s
111:     learn: 0.4133828      total: 6.7s      remaining: 5.26s
112:     learn: 0.4130348      total: 6.75s     remaining: 5.2s
113:     learn: 0.4127360      total: 6.82s     remaining: 5.14s
114:     learn: 0.4126839      total: 6.87s     remaining: 5.08s
115:     learn: 0.4124662      total: 6.92s     remaining: 5.01s
116:     learn: 0.4123855      total: 6.97s     remaining: 4.95s
117:     learn: 0.4122185      total: 7.03s     remaining: 4.88s
118:     learn: 0.4120362      total: 7.08s     remaining: 4.82s
119:     learn: 0.4118194      total: 7.14s     remaining: 4.76s
120:     learn: 0.4116133      total: 7.2s      remaining: 4.7s
121:     learn: 0.4114931      total: 7.26s     remaining: 4.64s
122:     learn: 0.4114410      total: 7.32s     remaining: 4.58s
123:     learn: 0.4111519      total: 7.38s     remaining: 4.53s
124:     learn: 0.4109939      total: 7.45s     remaining: 4.47s
125:     learn: 0.4107207      total: 7.51s     remaining: 4.41s
126:     learn: 0.4106887      total: 7.57s     remaining: 4.35s
127:     learn: 0.4104863      total: 7.62s     remaining: 4.29s
128:     learn: 0.4103401      total: 7.68s     remaining: 4.23s
129:     learn: 0.4103265      total: 7.73s     remaining: 4.16s
130:     learn: 0.4102854      total: 7.8s      remaining: 4.11s
131:     learn: 0.4101201      total: 7.85s     remaining: 4.04s
132:     learn: 0.4095721      total: 7.91s     remaining: 3.98s
133:     learn: 0.4094615      total: 7.99s     remaining: 3.93s
134:     learn: 0.4091818      total: 8.03s     remaining: 3.87s
135:     learn: 0.4090502      total: 8.1s      remaining: 3.81s
136:     learn: 0.4085621      total: 8.17s     remaining: 3.76s
137:     learn: 0.4084252      total: 8.23s     remaining: 3.7s
138:     learn: 0.4083061      total: 8.27s     remaining: 3.63s
139:     learn: 0.4080310      total: 8.33s     remaining: 3.57s
140:     learn: 0.4079367      total: 8.38s     remaining: 3.51s
141:     learn: 0.4077535      total: 8.46s     remaining: 3.45s
142:     learn: 0.4075286      total: 8.53s     remaining: 3.4s
143:     learn: 0.4074704      total: 8.6s      remaining: 3.34s
```

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144:    learn: 0.4073957        total: 8.66s    remaining: 3.28s
145:    learn: 0.4071226        total: 8.71s    remaining: 3.22s
146:    learn: 0.4068717        total: 8.76s    remaining: 3.16s
147:    learn: 0.4067939        total: 8.82s    remaining: 3.1s
148:    learn: 0.4067776        total: 8.87s    remaining: 3.04s
149:    learn: 0.4067008        total: 8.95s    remaining: 2.98s
150:    learn: 0.4065720        total: 9s       remaining: 2.92s
151:    learn: 0.4064364        total: 9.07s    remaining: 2.86s
152:    learn: 0.4062012        total: 9.15s    remaining: 2.81s
153:    learn: 0.4060575        total: 9.21s    remaining: 2.75s
154:    learn: 0.4056395        total: 9.26s    remaining: 2.69s
155:    learn: 0.4052402        total: 9.32s    remaining: 2.63s
156:    learn: 0.4051556        total: 9.38s    remaining: 2.57s
157:    learn: 0.4050411        total: 9.44s    remaining: 2.51s
158:    learn: 0.4049732        total: 9.49s    remaining: 2.45s
159:    learn: 0.4047469        total: 9.54s    remaining: 2.39s
160:    learn: 0.4044514        total: 9.61s    remaining: 2.33s
161:    learn: 0.4041045        total: 9.66s    remaining: 2.27s
162:    learn: 0.4040828        total: 9.72s    remaining: 2.21s
163:    learn: 0.4039407        total: 9.78s    remaining: 2.15s
164:    learn: 0.4034907        total: 9.83s    remaining: 2.08s
165:    learn: 0.4034562        total: 9.88s    remaining: 2.02s
166:    learn: 0.4032525        total: 9.94s    remaining: 1.96s
167:    learn: 0.4030481        total: 10s      remaining: 1.91s
168:    learn: 0.4030481        total: 10.1s    remaining: 1.84s
169:    learn: 0.4028290        total: 10.1s    remaining: 1.79s
170:    learn: 0.4027252        total: 10.2s    remaining: 1.73s
171:    learn: 0.4026219        total: 10.2s    remaining: 1.66s
172:    learn: 0.4024782        total: 10.3s    remaining: 1.6s
173:    learn: 0.4023107        total: 10.3s    remaining: 1.54s
174:    learn: 0.4021665        total: 10.4s    remaining: 1.49s
175:    learn: 0.4020791        total: 10.4s    remaining: 1.42s
176:    learn: 0.4020132        total: 10.5s    remaining: 1.36s
177:    learn: 0.4018426        total: 10.6s    remaining: 1.31s
178:    learn: 0.4017437        total: 10.6s    remaining: 1.25s
179:    learn: 0.4014431        total: 10.7s    remaining: 1.19s
180:    learn: 0.4013874        total: 10.7s    remaining: 1.13s
181:    learn: 0.4013341        total: 10.8s    remaining: 1.07s
182:    learn: 0.4011775        total: 10.8s    remaining: 1.01s
183:    learn: 0.4010952        total: 10.9s    remaining: 948ms
184:    learn: 0.4010116        total: 11s      remaining: 889ms
185:    learn: 0.4007667        total: 11s      remaining: 829ms
186:    learn: 0.4007253        total: 11.1s    remaining: 770ms
187:    learn: 0.4006728        total: 11.1s    remaining: 711ms
188:    learn: 0.4005235        total: 11.2s    remaining: 652ms
189:    learn: 0.4001612        total: 11.3s    remaining: 593ms
190:    learn: 0.4000619        total: 11.3s    remaining: 533ms
191:    learn: 0.3999439        total: 11.4s    remaining: 474ms
```

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192:    learn: 0.3998538    total: 11.4s    remaining: 414ms
193:    learn: 0.3998154    total: 11.5s    remaining: 355ms
194:    learn: 0.3995860    total: 11.6s    remaining: 296ms
195:    learn: 0.3993757    total: 11.6s    remaining: 237ms
196:    learn: 0.3991704    total: 11.7s    remaining: 178ms
197:    learn: 0.3990034    total: 11.7s    remaining: 119ms
198:    learn: 0.3988167    total: 11.8s    remaining: 59.3ms
199:    learn: 0.3986125    total: 11.9s    remaining: 0us
Mean train f1-score of data (CV) 8 is : 0.8171060825186878
Mean test f1-score of data (CV) 8 is : 0.8059720622034311
```

```
Shape of data 9 is :
(27303, 10)
Distribution of 9 is :
Yes    14102
No     13201
Name: TIMELY_RESPONSE, dtype: int64

<IPython.core.display.HTML object>

MetricVisualizer(layout=Layout(align_self='stretch', height='500px'))

Train f1_score [Yes]: for data 9 is : 0.8108021476079815
Train f1_score [No]: for data 9 is : 0.817146840148699
```

	precision	recall	f1-score	support
No	0.77	0.87	0.81	924
Yes	0.86	0.75	0.80	988
accuracy			0.81	1912
macro avg	0.81	0.81	0.81	1912
weighted avg	0.82	0.81	0.81	1912
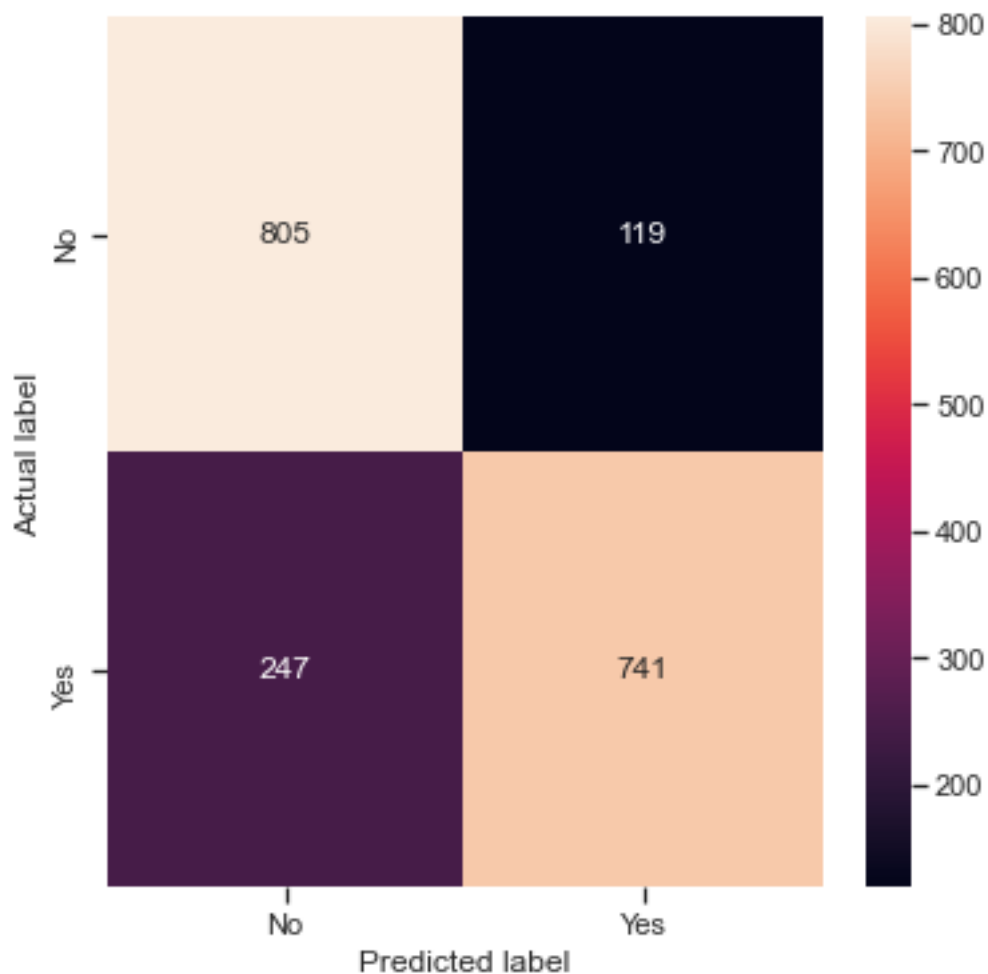
```
Cross validation result for data 9 is :
0:      learn: 0.6340920      total: 54.2ms   remaining: 10.8s
1:      learn: 0.5935950      total: 118ms    remaining: 11.7s
2:      learn: 0.5701450      total: 166ms    remaining: 10.9s
3:      learn: 0.5464235      total: 219ms    remaining: 10.7s
4:      learn: 0.5285601      total: 267ms    remaining: 10.4s
5:      learn: 0.5154390      total: 336ms    remaining: 10.9s
6:      learn: 0.5033065      total: 404ms    remaining: 11.1s
7:      learn: 0.4939659      total: 489ms    remaining: 11.7s
8:      learn: 0.4856025      total: 560ms    remaining: 11.9s
9:      learn: 0.4802213      total: 608ms    remaining: 11.6s
10:     learn: 0.4756487      total: 692ms    remaining: 11.9s
11:     learn: 0.4700573      total: 741ms    remaining: 11.6s
12:     learn: 0.4670143      total: 827ms    remaining: 11.9s
13:     learn: 0.4644479      total: 896ms    remaining: 11.9s
14:     learn: 0.4605797      total: 956ms    remaining: 11.8s
15:     learn: 0.4589875      total: 1.03s    remaining: 11.8s
```

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16:     learn: 0.4568671     total: 1.08s     remaining: 11.6s
17:     learn: 0.4550243     total: 1.13s     remaining: 11.4s
18:     learn: 0.4532201     total: 1.18s     remaining: 11.2s
19:     learn: 0.4511033     total: 1.22s     remaining: 10.9s
20:     learn: 0.4499609     total: 1.3s      remaining: 11.1s
21:     learn: 0.4491804     total: 1.36s     remaining: 11s
22:     learn: 0.4483385     total: 1.41s     remaining: 10.8s
23:     learn: 0.4470899     total: 1.46s     remaining: 10.7s
24:     learn: 0.4457840     total: 1.5s      remaining: 10.5s
25:     learn: 0.4443472     total: 1.55s     remaining: 10.4s
26:     learn: 0.4435106     total: 1.61s     remaining: 10.3s
27:     learn: 0.4425950     total: 1.67s     remaining: 10.3s
28:     learn: 0.4418268     total: 1.73s     remaining: 10.2s
29:     learn: 0.4412545     total: 1.79s     remaining: 10.2s
30:     learn: 0.4403874     total: 1.84s     remaining: 10s
31:     learn: 0.4400163     total: 1.89s     remaining: 9.95s
32:     learn: 0.4398221     total: 1.95s     remaining: 9.88s
33:     learn: 0.4396156     total: 2s        remaining: 9.79s
34:     learn: 0.4391055     total: 2.08s     remaining: 9.79s
35:     learn: 0.4388834     total: 2.13s     remaining: 9.68s
36:     learn: 0.4385112     total: 2.17s     remaining: 9.57s
37:     learn: 0.4375999     total: 2.26s     remaining: 9.65s
38:     learn: 0.4372102     total: 2.32s     remaining: 9.59s
39:     learn: 0.4369330     total: 2.37s     remaining: 9.48s
40:     learn: 0.4357346     total: 2.42s     remaining: 9.41s
41:     learn: 0.4354301     total: 2.48s     remaining: 9.31s
42:     learn: 0.4350582     total: 2.53s     remaining: 9.25s
43:     learn: 0.4344345     total: 2.59s     remaining: 9.17s
44:     learn: 0.4340642     total: 2.63s     remaining: 9.07s
45:     learn: 0.4340595     total: 2.66s     remaining: 8.91s
46:     learn: 0.4336951     total: 2.75s     remaining: 8.94s
47:     learn: 0.4335853     total: 2.79s     remaining: 8.85s
48:     learn: 0.4331805     total: 2.85s     remaining: 8.79s
49:     learn: 0.4330898     total: 2.9s      remaining: 8.71s
50:     learn: 0.4323368     total: 2.98s     remaining: 8.7s
51:     learn: 0.4321489     total: 3.03s     remaining: 8.62s
52:     learn: 0.4319879     total: 3.09s     remaining: 8.58s
53:     learn: 0.4316533     total: 3.15s     remaining: 8.52s
54:     learn: 0.4314368     total: 3.21s     remaining: 8.47s
55:     learn: 0.4311508     total: 3.26s     remaining: 8.39s
56:     learn: 0.4310326     total: 3.31s     remaining: 8.31s
57:     learn: 0.4308756     total: 3.36s     remaining: 8.22s
58:     learn: 0.4305107     total: 3.41s     remaining: 8.14s
59:     learn: 0.4298763     total: 3.46s     remaining: 8.08s
60:     learn: 0.4296259     total: 3.51s     remaining: 7.99s
61:     learn: 0.4293425     total: 3.56s     remaining: 7.92s
62:     learn: 0.4290718     total: 3.62s     remaining: 7.87s
63:     learn: 0.4289969     total: 3.66s     remaining: 7.79s
```

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64:     learn: 0.4287341      total: 3.74s     remaining: 7.76s
65:     learn: 0.4282340      total: 3.8s      remaining: 7.71s
66:     learn: 0.4281090      total: 3.86s     remaining: 7.66s
67:     learn: 0.4277377      total: 3.91s     remaining: 7.59s
68:     learn: 0.4274206      total: 3.96s     remaining: 7.52s
69:     learn: 0.4274085      total: 3.99s     remaining: 7.41s
70:     learn: 0.4271668      total: 4.04s     remaining: 7.35s
71:     learn: 0.4268352      total: 4.1s      remaining: 7.28s
72:     learn: 0.4265339      total: 4.14s     remaining: 7.21s
73:     learn: 0.4264820      total: 4.25s     remaining: 7.23s
74:     learn: 0.4264233      total: 4.32s     remaining: 7.2s
75:     learn: 0.4261342      total: 4.39s     remaining: 7.16s
76:     learn: 0.4260662      total: 4.45s     remaining: 7.1s
77:     learn: 0.4257987      total: 4.52s     remaining: 7.06s
78:     learn: 0.4254569      total: 4.59s     remaining: 7.04s
79:     learn: 0.4252806      total: 4.65s     remaining: 6.98s
80:     learn: 0.4249205      total: 4.7s      remaining: 6.91s
81:     learn: 0.4247074      total: 4.76s     remaining: 6.85s
82:     learn: 0.4245072      total: 4.81s     remaining: 6.78s
83:     learn: 0.4243874      total: 4.88s     remaining: 6.74s
84:     learn: 0.4242400      total: 4.93s     remaining: 6.67s
85:     learn: 0.4240475      total: 4.97s     remaining: 6.59s
86:     learn: 0.4237982      total: 5.02s     remaining: 6.52s
87:     learn: 0.4234064      total: 5.07s     remaining: 6.46s
88:     learn: 0.4227938      total: 5.15s     remaining: 6.42s
89:     learn: 0.4226312      total: 5.2s      remaining: 6.36s
90:     learn: 0.4223707      total: 5.27s     remaining: 6.31s
91:     learn: 0.4222901      total: 5.34s     remaining: 6.26s
92:     learn: 0.4220010      total: 5.38s     remaining: 6.2s
93:     learn: 0.4217458      total: 5.44s     remaining: 6.13s
94:     learn: 0.4216069      total: 5.52s     remaining: 6.1s
95:     learn: 0.4213945      total: 5.56s     remaining: 6.03s
96:     learn: 0.4211674      total: 5.61s     remaining: 5.96s
97:     learn: 0.4211596      total: 5.66s     remaining: 5.89s
98:     learn: 0.4210036      total: 5.71s     remaining: 5.82s
99:     learn: 0.4208770      total: 5.77s     remaining: 5.77s
100:    learn: 0.4206854      total: 5.81s     remaining: 5.7s
101:    learn: 0.4203693      total: 5.88s     remaining: 5.64s
102:    learn: 0.4197704      total: 5.94s     remaining: 5.59s
103:    learn: 0.4197311      total: 6s        remaining: 5.54s
104:    learn: 0.4196366      total: 6.05s     remaining: 5.47s
105:    learn: 0.4194483      total: 6.1s      remaining: 5.41s
106:    learn: 0.4191362      total: 6.15s     remaining: 5.35s
107:    learn: 0.4188950      total: 6.22s     remaining: 5.3s
108:    learn: 0.4186625      total: 6.27s     remaining: 5.24s
109:    learn: 0.4185600      total: 6.32s     remaining: 5.17s
110:    learn: 0.4182100      total: 6.38s     remaining: 5.11s
111:    learn: 0.4177986      total: 6.43s     remaining: 5.06s
```

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112:    learn: 0.4172191      total: 6.49s    remaining: 5s
113:    learn: 0.4169754      total: 6.55s    remaining: 4.94s
114:    learn: 0.4169074      total: 6.6s     remaining: 4.88s
115:    learn: 0.4167705      total: 6.65s    remaining: 4.82s
116:    learn: 0.4167666      total: 6.71s    remaining: 4.76s
117:    learn: 0.4165966      total: 6.77s    remaining: 4.7s
118:    learn: 0.4162568      total: 6.84s    remaining: 4.66s
119:    learn: 0.4160958      total: 6.9s     remaining: 4.6s
120:    learn: 0.4158953      total: 6.97s    remaining: 4.55s
121:    learn: 0.4158833      total: 7.04s    remaining: 4.5s
122:    learn: 0.4153748      total: 7.09s    remaining: 4.44s
123:    learn: 0.4149911      total: 7.15s    remaining: 4.38s
124:    learn: 0.4146318      total: 7.22s    remaining: 4.33s
125:    learn: 0.4144342      total: 7.27s    remaining: 4.27s
126:    learn: 0.4144091      total: 7.31s    remaining: 4.2s
127:    learn: 0.4141534      total: 7.36s    remaining: 4.14s
128:    learn: 0.4138019      total: 7.43s    remaining: 4.09s
129:    learn: 0.4136600      total: 7.49s    remaining: 4.03s
130:    learn: 0.4132848      total: 7.55s    remaining: 3.98s
131:    learn: 0.4132216      total: 7.6s     remaining: 3.92s
132:    learn: 0.4127409      total: 7.65s    remaining: 3.85s
133:    learn: 0.4125947      total: 7.7s     remaining: 3.79s
134:    learn: 0.4123021      total: 7.76s    remaining: 3.74s
135:    learn: 0.4122515      total: 7.82s    remaining: 3.68s
136:    learn: 0.4120180      total: 7.87s    remaining: 3.62s
137:    learn: 0.4119209      total: 7.94s    remaining: 3.57s
138:    learn: 0.4118795      total: 8.01s    remaining: 3.51s
139:    learn: 0.4116454      total: 8.05s    remaining: 3.45s
140:    learn: 0.4113562      total: 8.12s    remaining: 3.4s
141:    learn: 0.4108076      total: 8.19s    remaining: 3.35s
142:    learn: 0.4107243      total: 8.24s    remaining: 3.29s
143:    learn: 0.4107192      total: 8.29s    remaining: 3.22s
144:    learn: 0.4106848      total: 8.34s    remaining: 3.16s
145:    learn: 0.4100923      total: 8.38s    remaining: 3.1s
146:    learn: 0.4099166      total: 8.44s    remaining: 3.04s
147:    learn: 0.4096589      total: 8.52s    remaining: 2.99s
148:    learn: 0.4093100      total: 8.58s    remaining: 2.94s
149:    learn: 0.4091686      total: 8.63s    remaining: 2.88s
150:    learn: 0.4090110      total: 8.68s    remaining: 2.81s
151:    learn: 0.4086688      total: 8.74s    remaining: 2.76s
152:    learn: 0.4084669      total: 8.8s     remaining: 2.7s
153:    learn: 0.4082669      total: 8.86s    remaining: 2.65s
154:    learn: 0.4080226      total: 8.91s    remaining: 2.59s
155:    learn: 0.4076571      total: 8.99s    remaining: 2.54s
156:    learn: 0.4073335      total: 9.06s    remaining: 2.48s
157:    learn: 0.4071131      total: 9.12s    remaining: 2.42s
158:    learn: 0.4068476      total: 9.18s    remaining: 2.37s
159:    learn: 0.4068442      total: 9.23s    remaining: 2.31s
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160:    learn: 0.4066711    total: 9.28s    remaining: 2.25s
161:    learn: 0.4065020    total: 9.34s    remaining: 2.19s
162:    learn: 0.4061402    total: 9.39s    remaining: 2.13s
163:    learn: 0.4059914    total: 9.44s    remaining: 2.07s
164:    learn: 0.4057223    total: 9.5s     remaining: 2.01s
165:    learn: 0.4053603    total: 9.57s    remaining: 1.96s
166:    learn: 0.4051210    total: 9.62s    remaining: 1.9s
167:    learn: 0.4048390    total: 9.68s    remaining: 1.84s
168:    learn: 0.4047017    total: 9.75s    remaining: 1.79s
169:    learn: 0.4045702    total: 9.81s    remaining: 1.73s
170:    learn: 0.4043557    total: 9.86s    remaining: 1.67s
171:    learn: 0.4042847    total: 9.92s    remaining: 1.61s
172:    learn: 0.4041144    total: 9.98s    remaining: 1.56s
173:    learn: 0.4038620    total: 10s      remaining: 1.5s
174:    learn: 0.4037755    total: 10.1s    remaining: 1.45s
175:    learn: 0.4036271    total: 10.2s    remaining: 1.39s
176:    learn: 0.4033563    total: 10.2s    remaining: 1.33s
177:    learn: 0.4032258    total: 10.3s    remaining: 1.27s
178:    learn: 0.4031327    total: 10.3s    remaining: 1.21s
179:    learn: 0.4030399    total: 10.4s    remaining: 1.15s
180:    learn: 0.4029909    total: 10.4s    remaining: 1.09s
181:    learn: 0.4028173    total: 10.5s    remaining: 1.04s
182:    learn: 0.4026669    total: 10.5s    remaining: 979ms
183:    learn: 0.4024744    total: 10.6s    remaining: 921ms
184:    learn: 0.4023318    total: 10.6s    remaining: 863ms
185:    learn: 0.4022136    total: 10.7s    remaining: 805ms
186:    learn: 0.4019336    total: 10.8s    remaining: 748ms
187:    learn: 0.4014947    total: 10.8s    remaining: 690ms
188:    learn: 0.4013556    total: 10.9s    remaining: 632ms
189:    learn: 0.4012064    total: 10.9s    remaining: 575ms
190:    learn: 0.4011731    total: 11s      remaining: 517ms
191:    learn: 0.4010010    total: 11s      remaining: 459ms
192:    learn: 0.4009336    total: 11.1s    remaining: 402ms
193:    learn: 0.4008506    total: 11.1s    remaining: 344ms
194:    learn: 0.4007167    total: 11.2s    remaining: 286ms
195:    learn: 0.4004768    total: 11.2s    remaining: 229ms
196:    learn: 0.4003189    total: 11.3s    remaining: 172ms
197:    learn: 0.4001506    total: 11.3s    remaining: 114ms
198:    learn: 0.3999578    total: 11.4s    remaining: 57.2ms
199:    learn: 0.3998310    total: 11.4s    remaining: 0us
0:      learn: 0.6324187    total: 50ms     remaining: 9.94s
1:      learn: 0.5983219    total: 105ms    remaining: 10.4s
2:      learn: 0.5667486    total: 156ms    remaining: 10.3s
3:      learn: 0.5415798    total: 207ms    remaining: 10.2s
4:      learn: 0.5267992    total: 257ms    remaining: 10s
5:      learn: 0.5137796    total: 303ms    remaining: 9.78s
6:      learn: 0.5030252    total: 355ms    remaining: 9.79s
7:      learn: 0.4949087    total: 420ms    remaining: 10.1s
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8:       learn: 0.4864703       total: 490ms    remaining: 10.4s
9:       learn: 0.4798436       total: 538ms    remaining: 10.2s
10:      learn: 0.4744730       total: 588ms    remaining: 10.1s
11:      learn: 0.4710572       total: 636ms    remaining: 9.97s
12:      learn: 0.4662747       total: 690ms    remaining: 9.93s
13:      learn: 0.4635643       total: 734ms    remaining: 9.75s
14:      learn: 0.4608184       total: 782ms    remaining: 9.64s
15:      learn: 0.4584933       total: 853ms    remaining: 9.81s
16:      learn: 0.4568181       total: 902ms    remaining: 9.71s
17:      learn: 0.4544209       total: 956ms    remaining: 9.67s
18:      learn: 0.4533742       total: 1.01s    remaining: 9.66s
19:      learn: 0.4522600       total: 1.07s    remaining: 9.65s
20:      learn: 0.4503502       total: 1.14s    remaining: 9.71s
21:      learn: 0.4492978       total: 1.2s     remaining: 9.69s
22:      learn: 0.4489810       total: 1.26s    remaining: 9.71s
23:      learn: 0.4478971       total: 1.32s    remaining: 9.67s
24:      learn: 0.4471601       total: 1.37s    remaining: 9.57s
25:      learn: 0.4461204       total: 1.41s    remaining: 9.46s
26:      learn: 0.4452702       total: 1.46s    remaining: 9.37s
27:      learn: 0.4443641       total: 1.51s    remaining: 9.28s
28:      learn: 0.4437358       total: 1.56s    remaining: 9.19s
29:      learn: 0.4428491       total: 1.6s     remaining: 9.09s
30:      learn: 0.4422868       total: 1.69s    remaining: 9.2s
31:      learn: 0.4421187       total: 1.75s    remaining: 9.2s
32:      learn: 0.4418662       total: 1.82s    remaining: 9.2s
33:      learn: 0.4414345       total: 1.87s    remaining: 9.12s
34:      learn: 0.4404129       total: 1.94s    remaining: 9.15s
35:      learn: 0.4401446       total: 2s       remaining: 9.1s
36:      learn: 0.4393372       total: 2.06s    remaining: 9.08s
37:      learn: 0.4392446       total: 2.12s    remaining: 9.04s
38:      learn: 0.4392299       total: 2.15s    remaining: 8.88s
39:      learn: 0.4389518       total: 2.19s    remaining: 8.77s
40:      learn: 0.4384928       total: 2.24s    remaining: 8.68s
41:      learn: 0.4383666       total: 2.3s     remaining: 8.64s
42:      learn: 0.4381135       total: 2.34s    remaining: 8.55s
43:      learn: 0.4379996       total: 2.39s    remaining: 8.47s
44:      learn: 0.4377201       total: 2.44s    remaining: 8.41s
45:      learn: 0.4374999       total: 2.5s     remaining: 8.38s
46:      learn: 0.4372339       total: 2.56s    remaining: 8.33s
47:      learn: 0.4370449       total: 2.6s     remaining: 8.25s
48:      learn: 0.4365328       total: 2.65s    remaining: 8.17s
49:      learn: 0.4364301       total: 2.7s     remaining: 8.1s
50:      learn: 0.4361468       total: 2.75s    remaining: 8.03s
51:      learn: 0.4357257       total: 2.81s    remaining: 8s
52:      learn: 0.4355642       total: 2.88s    remaining: 7.99s
53:      learn: 0.4351107       total: 2.93s    remaining: 7.93s
54:      learn: 0.4347652       total: 2.98s    remaining: 7.86s
55:      learn: 0.4338243       total: 3.03s    remaining: 7.8s
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56:     learn: 0.4333168      total: 3.1s      remaining: 7.79s
57:     learn: 0.4332633      total: 3.14s     remaining: 7.68s
58:     learn: 0.4327477      total: 3.18s     remaining: 7.61s
59:     learn: 0.4316994      total: 3.25s     remaining: 7.59s
60:     learn: 0.4314477      total: 3.33s     remaining: 7.59s
61:     learn: 0.4311281      total: 3.39s     remaining: 7.54s
62:     learn: 0.4309906      total: 3.46s     remaining: 7.52s
63:     learn: 0.4305680      total: 3.53s     remaining: 7.51s
64:     learn: 0.4304407      total: 3.58s     remaining: 7.43s
65:     learn: 0.4302417      total: 3.65s     remaining: 7.41s
66:     learn: 0.4300720      total: 3.7s      remaining: 7.34s
67:     learn: 0.4294811      total: 3.77s     remaining: 7.31s
68:     learn: 0.4292635      total: 3.82s     remaining: 7.25s
69:     learn: 0.4290499      total: 3.89s     remaining: 7.23s
70:     learn: 0.4289812      total: 3.94s     remaining: 7.16s
71:     learn: 0.4287398      total: 4s        remaining: 7.12s
72:     learn: 0.4283423      total: 4.05s     remaining: 7.05s
73:     learn: 0.4281852      total: 4.1s      remaining: 6.98s
74:     learn: 0.4280393      total: 4.15s     remaining: 6.92s
75:     learn: 0.4276054      total: 4.22s     remaining: 6.88s
76:     learn: 0.4272100      total: 4.28s     remaining: 6.83s
77:     learn: 0.4266572      total: 4.34s     remaining: 6.79s
78:     learn: 0.4264966      total: 4.4s      remaining: 6.74s
79:     learn: 0.4261790      total: 4.45s     remaining: 6.68s
80:     learn: 0.4259922      total: 4.51s     remaining: 6.62s
81:     learn: 0.4258532      total: 4.58s     remaining: 6.6s
82:     learn: 0.4257263      total: 4.64s     remaining: 6.54s
83:     learn: 0.4255598      total: 4.71s     remaining: 6.5s
84:     learn: 0.4252975      total: 4.76s     remaining: 6.44s
85:     learn: 0.4252600      total: 4.81s     remaining: 6.38s
86:     learn: 0.4250991      total: 4.86s     remaining: 6.32s
87:     learn: 0.4248730      total: 4.9s      remaining: 6.24s
88:     learn: 0.4247053      total: 4.96s     remaining: 6.19s
89:     learn: 0.4244725      total: 5.02s     remaining: 6.14s
90:     learn: 0.4241288      total: 5.09s     remaining: 6.09s
91:     learn: 0.4240189      total: 5.13s     remaining: 6.02s
92:     learn: 0.4238662      total: 5.18s     remaining: 5.96s
93:     learn: 0.4236784      total: 5.24s     remaining: 5.91s
94:     learn: 0.4235923      total: 5.31s     remaining: 5.87s
95:     learn: 0.4234340      total: 5.36s     remaining: 5.81s
96:     learn: 0.4233555      total: 5.41s     remaining: 5.75s
97:     learn: 0.4229471      total: 5.47s     remaining: 5.69s
98:     learn: 0.4224139      total: 5.52s     remaining: 5.63s
99:     learn: 0.4222657      total: 5.58s     remaining: 5.58s
100:    learn: 0.4217622      total: 5.64s     remaining: 5.53s
101:    learn: 0.4214070      total: 5.7s      remaining: 5.47s
102:    learn: 0.4209454      total: 5.75s     remaining: 5.42s
103:    learn: 0.4206200      total: 5.81s     remaining: 5.36s
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104:    learn: 0.4200624    total: 5.86s    remaining: 5.3s
105:    learn: 0.4198620    total: 5.92s    remaining: 5.25s
106:    learn: 0.4198147    total: 6.01s    remaining: 5.22s
107:    learn: 0.4196901    total: 6.06s    remaining: 5.16s
108:    learn: 0.4195759    total: 6.12s    remaining: 5.11s
109:    learn: 0.4190887    total: 6.17s    remaining: 5.04s
110:    learn: 0.4189118    total: 6.22s    remaining: 4.99s
111:    learn: 0.4186976    total: 6.28s    remaining: 4.93s
112:    learn: 0.4184602    total: 6.33s    remaining: 4.88s
113:    learn: 0.4182487    total: 6.4s     remaining: 4.83s
114:    learn: 0.4176957    total: 6.48s    remaining: 4.79s
115:    learn: 0.4176190    total: 6.54s    remaining: 4.73s
116:    learn: 0.4174078    total: 6.59s    remaining: 4.67s
117:    learn: 0.4171135    total: 6.64s    remaining: 4.62s
118:    learn: 0.4166216    total: 6.71s    remaining: 4.57s
119:    learn: 0.4164389    total: 6.77s    remaining: 4.51s
120:    learn: 0.4162219    total: 6.84s    remaining: 4.47s
121:    learn: 0.4160186    total: 6.89s    remaining: 4.41s
122:    learn: 0.4155723    total: 6.96s    remaining: 4.36s
123:    learn: 0.4152482    total: 7.02s    remaining: 4.3s
124:    learn: 0.4149934    total: 7.07s    remaining: 4.24s
125:    learn: 0.4147983    total: 7.16s    remaining: 4.21s
126:    learn: 0.4143353    total: 7.23s    remaining: 4.16s
127:    learn: 0.4141490    total: 7.28s    remaining: 4.1s
128:    learn: 0.4137917    total: 7.34s    remaining: 4.04s
129:    learn: 0.4137119    total: 7.39s    remaining: 3.98s
130:    learn: 0.4134573    total: 7.44s    remaining: 3.92s
131:    learn: 0.4132365    total: 7.5s     remaining: 3.86s
132:    learn: 0.4129991    total: 7.55s    remaining: 3.8s
133:    learn: 0.4129841    total: 7.63s    remaining: 3.76s
134:    learn: 0.4128705    total: 7.68s    remaining: 3.7s
135:    learn: 0.4126717    total: 7.74s    remaining: 3.64s
136:    learn: 0.4125271    total: 7.8s     remaining: 3.58s
137:    learn: 0.4123770    total: 7.86s    remaining: 3.53s
138:    learn: 0.4120614    total: 7.91s    remaining: 3.47s
139:    learn: 0.4118994    total: 7.98s    remaining: 3.42s
140:    learn: 0.4116632    total: 8.04s    remaining: 3.36s
141:    learn: 0.4116619    total: 8.08s    remaining: 3.3s
142:    learn: 0.4116518    total: 8.14s    remaining: 3.24s
143:    learn: 0.4115565    total: 8.19s    remaining: 3.18s
144:    learn: 0.4114463    total: 8.26s    remaining: 3.13s
145:    learn: 0.4112451    total: 8.31s    remaining: 3.07s
146:    learn: 0.4112012    total: 8.38s    remaining: 3.02s
147:    learn: 0.4108323    total: 8.45s    remaining: 2.97s
148:    learn: 0.4107571    total: 8.49s    remaining: 2.91s
149:    learn: 0.4106119    total: 8.56s    remaining: 2.85s
150:    learn: 0.4103442    total: 8.61s    remaining: 2.79s
151:    learn: 0.4102177    total: 8.68s    remaining: 2.74s
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152:     learn: 0.4098574        total: 8.73s     remaining: 2.68s
153:     learn: 0.4096665        total: 8.78s     remaining: 2.62s
154:     learn: 0.4092573        total: 8.83s     remaining: 2.56s
155:     learn: 0.4089549        total: 8.89s     remaining: 2.51s
156:     learn: 0.4087983        total: 8.95s     remaining: 2.45s
157:     learn: 0.4086319        total: 9.03s     remaining: 2.4s
158:     learn: 0.4083856        total: 9.09s     remaining: 2.35s
159:     learn: 0.4080273        total: 9.15s     remaining: 2.29s
160:     learn: 0.4078146        total: 9.21s     remaining: 2.23s
161:     learn: 0.4076307        total: 9.26s     remaining: 2.17s
162:     learn: 0.4075919        total: 9.3s      remaining: 2.11s
163:     learn: 0.4072969        total: 9.36s     remaining: 2.05s
164:     learn: 0.4070567        total: 9.42s     remaining: 2s
165:     learn: 0.4069910        total: 9.47s     remaining: 1.94s
166:     learn: 0.4068583        total: 9.52s     remaining: 1.88s
167:     learn: 0.4068031        total: 9.57s     remaining: 1.82s
168:     learn: 0.4065818        total: 9.64s     remaining: 1.77s
169:     learn: 0.4064672        total: 9.7s      remaining: 1.71s
170:     learn: 0.4060872        total: 9.78s     remaining: 1.66s
171:     learn: 0.4059053        total: 9.84s     remaining: 1.6s
172:     learn: 0.4057271        total: 9.92s     remaining: 1.55s
173:     learn: 0.4055697        total: 9.97s     remaining: 1.49s
174:     learn: 0.4054521        total: 10s       remaining: 1.43s
175:     learn: 0.4053157        total: 10.1s     remaining: 1.38s
176:     learn: 0.4052677        total: 10.1s     remaining: 1.32s
177:     learn: 0.4051081        total: 10.2s     remaining: 1.26s
178:     learn: 0.4049740        total: 10.2s     remaining: 1.2s
179:     learn: 0.4047016        total: 10.3s     remaining: 1.14s
180:     learn: 0.4045613        total: 10.4s     remaining: 1.09s
181:     learn: 0.4045154        total: 10.4s     remaining: 1.03s
182:     learn: 0.4043985        total: 10.5s     remaining: 973ms
183:     learn: 0.4041989        total: 10.5s     remaining: 915ms
184:     learn: 0.4040801        total: 10.6s     remaining: 859ms
185:     learn: 0.4039604        total: 10.6s     remaining: 801ms
186:     learn: 0.4037077        total: 10.7s     remaining: 744ms
187:     learn: 0.4034618        total: 10.8s     remaining: 688ms
188:     learn: 0.4033115        total: 10.8s     remaining: 631ms
189:     learn: 0.4031616        total: 10.9s     remaining: 573ms
190:     learn: 0.4030230        total: 11s       remaining: 517ms
191:     learn: 0.4028948        total: 11s       remaining: 460ms
192:     learn: 0.4028413        total: 11.1s     remaining: 402ms
193:     learn: 0.4027038        total: 11.1s     remaining: 344ms
194:     learn: 0.4025310        total: 11.2s     remaining: 287ms
195:     learn: 0.4020309        total: 11.2s     remaining: 229ms
196:     learn: 0.4017821        total: 11.3s     remaining: 172ms
197:     learn: 0.4015043        total: 11.3s     remaining: 115ms
198:     learn: 0.4012983        total: 11.4s     remaining: 57.3ms
199:     learn: 0.4010547        total: 11.5s     remaining: 0us
```

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0:      learn: 0.6290184      total: 54.2ms    remaining: 10.8s
1:      learn: 0.5952069      total: 106ms     remaining: 10.5s
2:      learn: 0.5713429      total: 174ms     remaining: 11.4s
3:      learn: 0.5432021      total: 236ms     remaining: 11.6s
4:      learn: 0.5280375      total: 296ms     remaining: 11.6s
5:      learn: 0.5140867      total: 361ms     remaining: 11.7s
6:      learn: 0.5035657      total: 407ms     remaining: 11.2s
7:      learn: 0.4926181      total: 470ms     remaining: 11.3s
8:      learn: 0.4852037      total: 534ms     remaining: 11.3s
9:      learn: 0.4782436      total: 580ms     remaining: 11s
10:     learn: 0.4734160      total: 627ms     remaining: 10.8s
11:     learn: 0.4686227      total: 691ms     remaining: 10.8s
12:     learn: 0.4654058      total: 745ms     remaining: 10.7s
13:     learn: 0.4634024      total: 794ms     remaining: 10.6s
14:     learn: 0.4596625      total: 847ms     remaining: 10.4s
15:     learn: 0.4572105      total: 896ms     remaining: 10.3s
16:     learn: 0.4558517      total: 972ms     remaining: 10.5s
17:     learn: 0.4544833      total: 1.02s     remaining: 10.4s
18:     learn: 0.4527602      total: 1.1s      remaining: 10.5s
19:     learn: 0.4514687      total: 1.15s     remaining: 10.3s
20:     learn: 0.4504565      total: 1.19s     remaining: 10.2s
21:     learn: 0.4485142      total: 1.25s     remaining: 10.1s
22:     learn: 0.4468157      total: 1.3s      remaining: 10s
23:     learn: 0.4461485      total: 1.35s     remaining: 9.93s
24:     learn: 0.4448231      total: 1.4s      remaining: 9.81s
25:     learn: 0.4443523      total: 1.46s     remaining: 9.77s
26:     learn: 0.4432988      total: 1.52s     remaining: 9.75s
27:     learn: 0.4427592      total: 1.57s     remaining: 9.63s
28:     learn: 0.4422363      total: 1.62s     remaining: 9.57s
29:     learn: 0.4419488      total: 1.67s     remaining: 9.46s
30:     learn: 0.4410971      total: 1.73s     remaining: 9.41s
31:     learn: 0.4398114      total: 1.78s     remaining: 9.37s
32:     learn: 0.4395590      total: 1.84s     remaining: 9.3s
33:     learn: 0.4394131      total: 1.88s     remaining: 9.19s
34:     learn: 0.4390390      total: 1.94s     remaining: 9.13s
35:     learn: 0.4385030      total: 1.98s     remaining: 9.04s
36:     learn: 0.4382096      total: 2.05s     remaining: 9.04s
37:     learn: 0.4375841      total: 2.09s     remaining: 8.92s
38:     learn: 0.4368327      total: 2.13s     remaining: 8.81s
39:     learn: 0.4357087      total: 2.2s      remaining: 8.79s
40:     learn: 0.4353997      total: 2.24s     remaining: 8.71s
41:     learn: 0.4352192      total: 2.29s     remaining: 8.63s
42:     learn: 0.4351323      total: 2.35s     remaining: 8.59s
43:     learn: 0.4348305      total: 2.4s      remaining: 8.52s
44:     learn: 0.4340960      total: 2.45s     remaining: 8.45s
45:     learn: 0.4337489      total: 2.52s     remaining: 8.45s
46:     learn: 0.4334993      total: 2.59s     remaining: 8.44s
47:     learn: 0.4328123      total: 2.64s     remaining: 8.35s
```

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48:     learn: 0.4325689     total: 2.72s     remaining: 8.37s
49:     learn: 0.4323270     total: 2.76s     remaining: 8.28s
50:     learn: 0.4320961     total: 2.81s     remaining: 8.22s
51:     learn: 0.4318152     total: 2.86s     remaining: 8.14s
52:     learn: 0.4317202     total: 2.91s     remaining: 8.06s
53:     learn: 0.4315548     total: 2.96s     remaining: 8.01s
54:     learn: 0.4314086     total: 3.01s     remaining: 7.95s
55:     learn: 0.4312806     total: 3.07s     remaining: 7.9s
56:     learn: 0.4312291     total: 3.13s     remaining: 7.86s
57:     learn: 0.4310254     total: 3.18s     remaining: 7.79s
58:     learn: 0.4307630     total: 3.26s     remaining: 7.79s
59:     learn: 0.4304677     total: 3.31s     remaining: 7.73s
60:     learn: 0.4298673     total: 3.38s     remaining: 7.7s
61:     learn: 0.4296765     total: 3.43s     remaining: 7.63s
62:     learn: 0.4295547     total: 3.48s     remaining: 7.57s
63:     learn: 0.4287006     total: 3.53s     remaining: 7.5s
64:     learn: 0.4285005     total: 3.58s     remaining: 7.43s
65:     learn: 0.4283870     total: 3.65s     remaining: 7.4s
66:     learn: 0.4279425     total: 3.69s     remaining: 7.33s
67:     learn: 0.4276800     total: 3.73s     remaining: 7.25s
68:     learn: 0.4273953     total: 3.79s     remaining: 7.19s
69:     learn: 0.4271870     total: 3.84s     remaining: 7.13s
70:     learn: 0.4264210     total: 3.91s     remaining: 7.1s
71:     learn: 0.4261642     total: 3.96s     remaining: 7.04s
72:     learn: 0.4258238     total: 4s        remaining: 6.97s
73:     learn: 0.4254741     total: 4.07s     remaining: 6.93s
74:     learn: 0.4253675     total: 4.11s     remaining: 6.85s
75:     learn: 0.4249303     total: 4.16s     remaining: 6.79s
76:     learn: 0.4247446     total: 4.24s     remaining: 6.77s
77:     learn: 0.4245124     total: 4.29s     remaining: 6.71s
78:     learn: 0.4239731     total: 4.34s     remaining: 6.65s
79:     learn: 0.4237759     total: 4.38s     remaining: 6.58s
80:     learn: 0.4237063     total: 4.43s     remaining: 6.51s
81:     learn: 0.4235893     total: 4.5s      remaining: 6.48s
82:     learn: 0.4235504     total: 4.55s     remaining: 6.41s
83:     learn: 0.4235053     total: 4.63s     remaining: 6.39s
84:     learn: 0.4232217     total: 4.68s     remaining: 6.33s
85:     learn: 0.4231525     total: 4.73s     remaining: 6.27s
86:     learn: 0.4229225     total: 4.78s     remaining: 6.21s
87:     learn: 0.4227323     total: 4.85s     remaining: 6.17s
88:     learn: 0.4225171     total: 4.9s      remaining: 6.11s
89:     learn: 0.4223329     total: 4.96s     remaining: 6.06s
90:     learn: 0.4220588     total: 5.03s     remaining: 6.03s
91:     learn: 0.4217337     total: 5.08s     remaining: 5.96s
92:     learn: 0.4216372     total: 5.14s     remaining: 5.92s
93:     learn: 0.4212606     total: 5.21s     remaining: 5.88s
94:     learn: 0.4209356     total: 5.27s     remaining: 5.82s
95:     learn: 0.4206996     total: 5.33s     remaining: 5.78s
```

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96:     learn: 0.4200124     total: 5.4s     remaining: 5.73s
97:     learn: 0.4198244     total: 5.46s    remaining: 5.69s
98:     learn: 0.4194951     total: 5.52s    remaining: 5.63s
99:     learn: 0.4189461     total: 5.58s    remaining: 5.58s
100:    learn: 0.4189346     total: 5.59s    remaining: 5.48s
101:    learn: 0.4185157     total: 5.64s    remaining: 5.42s
102:    learn: 0.4179606     total: 5.69s    remaining: 5.36s
103:    learn: 0.4178323     total: 5.76s    remaining: 5.32s
104:    learn: 0.4174793     total: 5.82s    remaining: 5.27s
105:    learn: 0.4173135     total: 5.87s    remaining: 5.21s
106:    learn: 0.4168195     total: 5.94s    remaining: 5.16s
107:    learn: 0.4167341     total: 5.99s    remaining: 5.1s
108:    learn: 0.4165591     total: 6.04s    remaining: 5.04s
109:    learn: 0.4163113     total: 6.09s    remaining: 4.99s
110:    learn: 0.4162814     total: 6.14s    remaining: 4.92s
111:    learn: 0.4157743     total: 6.19s    remaining: 4.87s
112:    learn: 0.4154077     total: 6.26s    remaining: 4.82s
113:    learn: 0.4150865     total: 6.32s    remaining: 4.77s
114:    learn: 0.4148042     total: 6.41s    remaining: 4.74s
115:    learn: 0.4147326     total: 6.46s    remaining: 4.68s
116:    learn: 0.4144719     total: 6.53s    remaining: 4.63s
117:    learn: 0.4142099     total: 6.59s    remaining: 4.58s
118:    learn: 0.4138002     total: 6.65s    remaining: 4.53s
119:    learn: 0.4137758     total: 6.73s    remaining: 4.49s
120:    learn: 0.4135474     total: 6.78s    remaining: 4.42s
121:    learn: 0.4134394     total: 6.83s    remaining: 4.37s
122:    learn: 0.4130263     total: 6.9s     remaining: 4.32s
123:    learn: 0.4129560     total: 6.96s    remaining: 4.26s
124:    learn: 0.4128033     total: 7.02s    remaining: 4.21s
125:    learn: 0.4127708     total: 7.07s    remaining: 4.15s
126:    learn: 0.4124272     total: 7.14s    remaining: 4.1s
127:    learn: 0.4123539     total: 7.19s    remaining: 4.04s
128:    learn: 0.4121438     total: 7.24s    remaining: 3.99s
129:    learn: 0.4119240     total: 7.29s    remaining: 3.93s
130:    learn: 0.4116293     total: 7.34s    remaining: 3.87s
131:    learn: 0.4114891     total: 7.42s    remaining: 3.82s
132:    learn: 0.4111897     total: 7.48s    remaining: 3.77s
133:    learn: 0.4105817     total: 7.54s    remaining: 3.71s
134:    learn: 0.4100264     total: 7.59s    remaining: 3.65s
135:    learn: 0.4097534     total: 7.65s    remaining: 3.6s
136:    learn: 0.4095554     total: 7.72s    remaining: 3.55s
137:    learn: 0.4093235     total: 7.78s    remaining: 3.5s
138:    learn: 0.4091859     total: 7.85s    remaining: 3.44s
139:    learn: 0.4090927     total: 7.9s     remaining: 3.38s
140:    learn: 0.4087422     total: 7.95s    remaining: 3.33s
141:    learn: 0.4082778     total: 8s       remaining: 3.27s
142:    learn: 0.4081805     total: 8.06s    remaining: 3.21s
143:    learn: 0.4077539     total: 8.11s    remaining: 3.15s
```

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144:    learn: 0.4074749    total: 8.18s    remaining: 3.1s
145:    learn: 0.4073714    total: 8.24s    remaining: 3.05s
146:    learn: 0.4072134    total: 8.29s    remaining: 2.99s
147:    learn: 0.4071438    total: 8.36s    remaining: 2.94s
148:    learn: 0.4071320    total: 8.4s     remaining: 2.88s
149:    learn: 0.4069362    total: 8.45s    remaining: 2.82s
150:    learn: 0.4068869    total: 8.5s     remaining: 2.76s
151:    learn: 0.4068033    total: 8.56s    remaining: 2.7s
152:    learn: 0.4065968    total: 8.62s    remaining: 2.65s
153:    learn: 0.4065939    total: 8.66s    remaining: 2.59s
154:    learn: 0.4063425    total: 8.71s    remaining: 2.53s
155:    learn: 0.4060772    total: 8.78s    remaining: 2.48s
156:    learn: 0.4060248    total: 8.83s    remaining: 2.42s
157:    learn: 0.4059257    total: 8.89s    remaining: 2.36s
158:    learn: 0.4058213    total: 8.94s    remaining: 2.3s
159:    learn: 0.4056533    total: 8.99s    remaining: 2.25s
160:    learn: 0.4052401    total: 9.06s    remaining: 2.19s
161:    learn: 0.4048102    total: 9.13s    remaining: 2.14s
162:    learn: 0.4046362    total: 9.19s    remaining: 2.08s
163:    learn: 0.4044994    total: 9.23s    remaining: 2.03s
164:    learn: 0.4043749    total: 9.29s    remaining: 1.97s
165:    learn: 0.4043140    total: 9.34s    remaining: 1.91s
166:    learn: 0.4041484    total: 9.38s    remaining: 1.85s
167:    learn: 0.4040239    total: 9.44s    remaining: 1.8s
168:    learn: 0.4040035    total: 9.49s    remaining: 1.74s
169:    learn: 0.4039331    total: 9.55s    remaining: 1.69s
170:    learn: 0.4036841    total: 9.61s    remaining: 1.63s
171:    learn: 0.4035927    total: 9.66s    remaining: 1.57s
172:    learn: 0.4033772    total: 9.72s    remaining: 1.52s
173:    learn: 0.4031751    total: 9.78s    remaining: 1.46s
174:    learn: 0.4030634    total: 9.84s    remaining: 1.41s
175:    learn: 0.4029480    total: 9.9s     remaining: 1.35s
176:    learn: 0.4029312    total: 9.96s    remaining: 1.29s
177:    learn: 0.4026964    total: 10s      remaining: 1.24s
178:    learn: 0.4025310    total: 10.1s    remaining: 1.18s
179:    learn: 0.4023344    total: 10.1s    remaining: 1.12s
180:    learn: 0.4021519    total: 10.2s    remaining: 1.07s
181:    learn: 0.4020265    total: 10.2s    remaining: 1.01s
182:    learn: 0.4019501    total: 10.3s    remaining: 955ms
183:    learn: 0.4017867    total: 10.3s    remaining: 898ms
184:    learn: 0.4016471    total: 10.4s    remaining: 842ms
185:    learn: 0.4015982    total: 10.4s    remaining: 785ms
186:    learn: 0.4014579    total: 10.5s    remaining: 728ms
187:    learn: 0.4011780    total: 10.5s    remaining: 672ms
188:    learn: 0.4011392    total: 10.6s    remaining: 615ms
189:    learn: 0.4009264    total: 10.6s    remaining: 560ms
190:    learn: 0.4008598    total: 10.7s    remaining: 504ms
191:    learn: 0.4007108    total: 10.8s    remaining: 449ms
```

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192:    learn: 0.4003297    total: 10.8s    remaining: 393ms
193:    learn: 0.4000796    total: 10.9s    remaining: 337ms
194:    learn: 0.3999070    total: 10.9s    remaining: 280ms
195:    learn: 0.3998069    total: 11s      remaining: 225ms
196:    learn: 0.3997074    total: 11.1s    remaining: 169ms
197:    learn: 0.3997031    total: 11.1s    remaining: 112ms
198:    learn: 0.3994244    total: 11.2s    remaining: 56.2ms
199:    learn: 0.3991310    total: 11.3s    remaining: 0us
Mean train f1-score of data (CV) 9 is : 0.8148246419602412
Mean test f1-score of data (CV) 9 is : 0.8037249613192743




Shape of data 10 is :
(27303, 10)
Distribution of 10 is :
Yes    14102
No     13201
Name: TIMELY_RESPONSE, dtype: int64

<IPython.core.display.HTML object>

MetricVisualizer(layout=Layout(align_self='stretch', height='500px'))

Train f1_score [Yes]: for data 10 is : 0.8117345713599616
Train f1_score [No]: for data 10 is : 0.8176461466894093
             precision   recall  f1-score   support

         No      0.77     0.83      0.80       924
        Yes      0.83     0.77      0.80       988

   accuracy                         0.80      1912
  macro avg      0.80     0.80      0.80      1912
weighted avg     0.80     0.80      0.80      1912
```
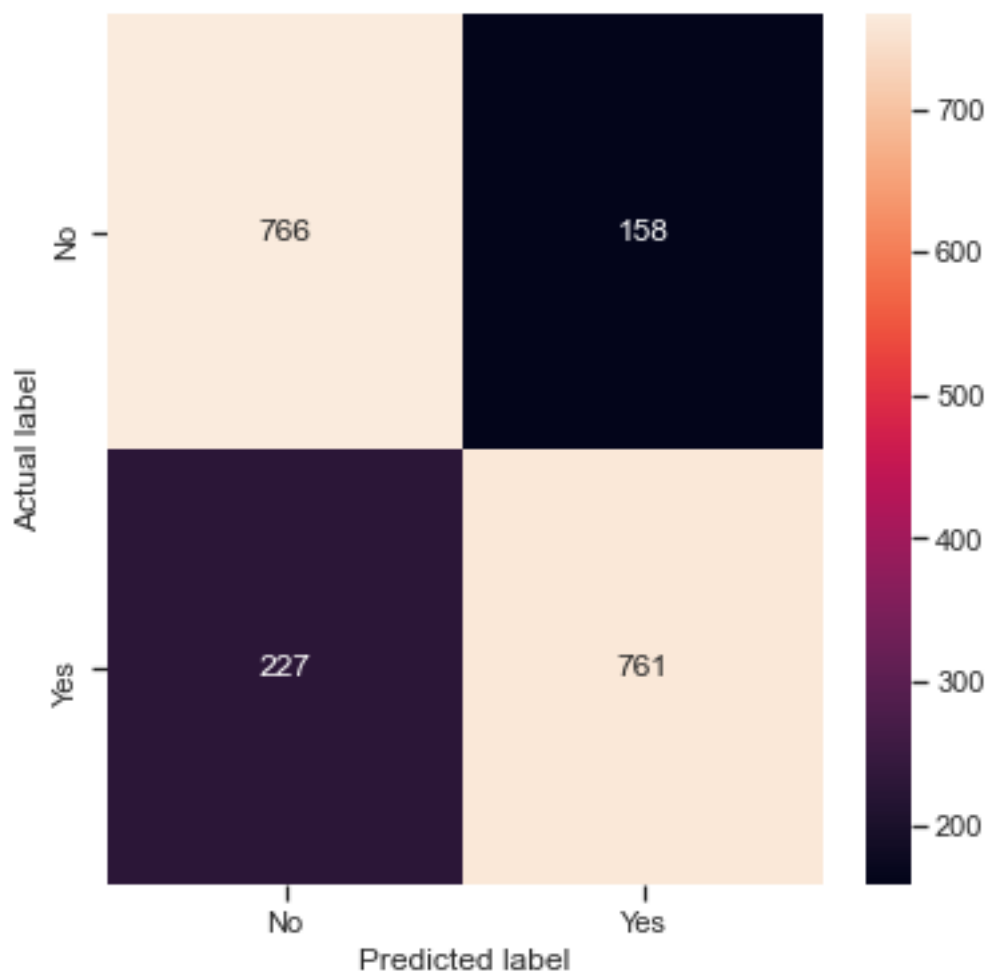
```
Cross validation result for data 10 is :
0:      learn: 0.6341663       total: 40.6ms   remaining: 8.08s
1:      learn: 0.6013721       total: 90.6ms   remaining: 8.97s
2:      learn: 0.5699707       total: 150ms    remaining: 9.86s
3:      learn: 0.5495256       total: 206ms    remaining: 10.1s
4:      learn: 0.5291589       total: 261ms    remaining: 10.2s
5:      learn: 0.5184082       total: 306ms    remaining: 9.89s
6:      learn: 0.5051757       total: 366ms    remaining: 10.1s
7:      learn: 0.4958517       total: 422ms    remaining: 10.1s
8:      learn: 0.4883560       total: 520ms    remaining: 11s
9:      learn: 0.4816205       total: 573ms    remaining: 10.9s
10:     learn: 0.4768811       total: 622ms    remaining: 10.7s
11:     learn: 0.4725324       total: 674ms    remaining: 10.6s
12:     learn: 0.4687515       total: 728ms    remaining: 10.5s
13:     learn: 0.4659160       total: 790ms    remaining: 10.5s
14:     learn: 0.4640114       total: 829ms    remaining: 10.2s
15:     learn: 0.4622998       total: 898ms    remaining: 10.3s
```

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16:     learn: 0.4601125     total: 973ms     remaining: 10.5s
17:     learn: 0.4582629     total: 1.02s     remaining: 10.4s
18:     learn: 0.4567944     total: 1.11s     remaining: 10.6s
19:     learn: 0.4559356     total: 1.17s     remaining: 10.5s
20:     learn: 0.4553510     total: 1.22s     remaining: 10.4s
21:     learn: 0.4532805     total: 1.27s     remaining: 10.3s
22:     learn: 0.4520388     total: 1.32s     remaining: 10.1s
23:     learn: 0.4508886     total: 1.36s     remaining: 9.99s
24:     learn: 0.4502318     total: 1.42s     remaining: 9.93s
25:     learn: 0.4495231     total: 1.47s     remaining: 9.84s
26:     learn: 0.4488960     total: 1.53s     remaining: 9.82s
27:     learn: 0.4482333     total: 1.58s     remaining: 9.69s
28:     learn: 0.4477960     total: 1.62s     remaining: 9.58s
29:     learn: 0.4468892     total: 1.67s     remaining: 9.46s
30:     learn: 0.4466635     total: 1.72s     remaining: 9.36s
31:     learn: 0.4460497     total: 1.76s     remaining: 9.27s
32:     learn: 0.4457025     total: 1.83s     remaining: 9.29s
33:     learn: 0.4443533     total: 1.9s      remaining: 9.25s
34:     learn: 0.4438053     total: 1.96s     remaining: 9.23s
35:     learn: 0.4432561     total: 2s        remaining: 9.13s
36:     learn: 0.4428349     total: 2.06s     remaining: 9.09s
37:     learn: 0.4423372     total: 2.11s     remaining: 9.01s
38:     learn: 0.4418456     total: 2.16s     remaining: 8.93s
39:     learn: 0.4413928     total: 2.21s     remaining: 8.83s
40:     learn: 0.4405393     total: 2.28s     remaining: 8.85s
41:     learn: 0.4401944     total: 2.35s     remaining: 8.83s
42:     learn: 0.4393036     total: 2.4s      remaining: 8.75s
43:     learn: 0.4390923     total: 2.48s     remaining: 8.8s
44:     learn: 0.4385425     total: 2.54s     remaining: 8.75s
45:     learn: 0.4382024     total: 2.6s      remaining: 8.7s
46:     learn: 0.4377323     total: 2.65s     remaining: 8.62s
47:     learn: 0.4377314     total: 2.67s     remaining: 8.45s
48:     learn: 0.4375019     total: 2.71s     remaining: 8.36s
49:     learn: 0.4364464     total: 2.76s     remaining: 8.29s
50:     learn: 0.4358668     total: 2.81s     remaining: 8.22s
51:     learn: 0.4352973     total: 2.87s     remaining: 8.17s
52:     learn: 0.4350854     total: 2.93s     remaining: 8.12s
53:     learn: 0.4349477     total: 2.98s     remaining: 8.07s
54:     learn: 0.4345838     total: 3.06s     remaining: 8.06s
55:     learn: 0.4341617     total: 3.1s      remaining: 7.98s
56:     learn: 0.4339705     total: 3.16s     remaining: 7.92s
57:     learn: 0.4338534     total: 3.21s     remaining: 7.85s
58:     learn: 0.4335430     total: 3.29s     remaining: 7.85s
59:     learn: 0.4331266     total: 3.34s     remaining: 7.79s
60:     learn: 0.4328752     total: 3.39s     remaining: 7.72s
61:     learn: 0.4324931     total: 3.44s     remaining: 7.66s
62:     learn: 0.4319192     total: 3.52s     remaining: 7.66s
63:     learn: 0.4316293     total: 3.57s     remaining: 7.59s
```

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64:     learn: 0.4314299     total: 3.65s     remaining: 7.58s
65:     learn: 0.4312181     total: 3.7s      remaining: 7.51s
66:     learn: 0.4310406     total: 3.75s     remaining: 7.44s
67:     learn: 0.4309104     total: 3.79s     remaining: 7.37s
68:     learn: 0.4308045     total: 3.86s     remaining: 7.33s
69:     learn: 0.4307207     total: 3.91s     remaining: 7.25s
70:     learn: 0.4305665     total: 3.95s     remaining: 7.18s
71:     learn: 0.4303723     total: 4.01s     remaining: 7.13s
72:     learn: 0.4302493     total: 4.07s     remaining: 7.09s
73:     learn: 0.4301378     total: 4.12s     remaining: 7.02s
74:     learn: 0.4296126     total: 4.18s     remaining: 6.96s
75:     learn: 0.4294009     total: 4.23s     remaining: 6.9s
76:     learn: 0.4287102     total: 4.28s     remaining: 6.84s
77:     learn: 0.4284532     total: 4.33s     remaining: 6.77s
78:     learn: 0.4283700     total: 4.38s     remaining: 6.71s
79:     learn: 0.4279587     total: 4.44s     remaining: 6.66s
80:     learn: 0.4278538     total: 4.5s      remaining: 6.61s
81:     learn: 0.4275440     total: 4.55s     remaining: 6.55s
82:     learn: 0.4273030     total: 4.61s     remaining: 6.5s
83:     learn: 0.4270827     total: 4.66s     remaining: 6.43s
84:     learn: 0.4268755     total: 4.73s     remaining: 6.4s
85:     learn: 0.4266325     total: 4.8s      remaining: 6.36s
86:     learn: 0.4264074     total: 4.86s     remaining: 6.31s
87:     learn: 0.4261249     total: 4.91s     remaining: 6.25s
88:     learn: 0.4254121     total: 4.96s     remaining: 6.18s
89:     learn: 0.4252159     total: 5.01s     remaining: 6.13s
90:     learn: 0.4251138     total: 5.07s     remaining: 6.07s
91:     learn: 0.4250873     total: 5.11s     remaining: 5.99s
92:     learn: 0.4250100     total: 5.16s     remaining: 5.94s
93:     learn: 0.4248677     total: 5.21s     remaining: 5.87s
94:     learn: 0.4247044     total: 5.25s     remaining: 5.81s
95:     learn: 0.4246070     total: 5.3s      remaining: 5.74s
96:     learn: 0.4245217     total: 5.36s     remaining: 5.7s
97:     learn: 0.4239848     total: 5.41s     remaining: 5.63s
98:     learn: 0.4238689     total: 5.47s     remaining: 5.58s
99:     learn: 0.4236707     total: 5.52s     remaining: 5.52s
100:    learn: 0.4234065     total: 5.57s     remaining: 5.46s
101:    learn: 0.4232627     total: 5.63s     remaining: 5.41s
102:    learn: 0.4231486     total: 5.71s     remaining: 5.37s
103:    learn: 0.4229076     total: 5.76s     remaining: 5.32s
104:    learn: 0.4226669     total: 5.82s     remaining: 5.26s
105:    learn: 0.4225834     total: 5.88s     remaining: 5.22s
106:    learn: 0.4224315     total: 5.97s     remaining: 5.18s
107:    learn: 0.4224314     total: 5.99s     remaining: 5.11s
108:    learn: 0.4223327     total: 6.06s     remaining: 5.06s
109:    learn: 0.4221255     total: 6.12s     remaining: 5s
110:    learn: 0.4217819     total: 6.16s     remaining: 4.94s
111:    learn: 0.4213940     total: 6.23s     remaining: 4.9s
```

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112:    learn: 0.4211189       total: 6.29s    remaining: 4.84s
113:    learn: 0.4205421       total: 6.34s    remaining: 4.79s
114:    learn: 0.4202010       total: 6.4s     remaining: 4.73s
115:    learn: 0.4196227       total: 6.46s    remaining: 4.68s
116:    learn: 0.4194327       total: 6.51s    remaining: 4.62s
117:    learn: 0.4193397       total: 6.57s    remaining: 4.56s
118:    learn: 0.4190464       total: 6.63s    remaining: 4.51s
119:    learn: 0.4185669       total: 6.7s     remaining: 4.46s
120:    learn: 0.4184444       total: 6.74s    remaining: 4.4s
121:    learn: 0.4182663       total: 6.79s    remaining: 4.34s
122:    learn: 0.4180355       total: 6.84s    remaining: 4.28s
123:    learn: 0.4178857       total: 6.89s    remaining: 4.22s
124:    learn: 0.4178730       total: 6.94s    remaining: 4.16s
125:    learn: 0.4176210       total: 6.99s    remaining: 4.1s
126:    learn: 0.4173244       total: 7.05s    remaining: 4.05s
127:    learn: 0.4172461       total: 7.1s     remaining: 3.99s
128:    learn: 0.4172366       total: 7.16s    remaining: 3.94s
129:    learn: 0.4170035       total: 7.21s    remaining: 3.88s
130:    learn: 0.4170016       total: 7.25s    remaining: 3.82s
131:    learn: 0.4168360       total: 7.31s    remaining: 3.76s
132:    learn: 0.4165535       total: 7.36s    remaining: 3.71s
133:    learn: 0.4165248       total: 7.4s     remaining: 3.65s
134:    learn: 0.4163750       total: 7.45s    remaining: 3.59s
135:    learn: 0.4163616       total: 7.5s     remaining: 3.53s
136:    learn: 0.4163562       total: 7.55s    remaining: 3.47s
137:    learn: 0.4160491       total: 7.6s     remaining: 3.42s
138:    learn: 0.4154508       total: 7.67s    remaining: 3.37s
139:    learn: 0.4149141       total: 7.75s    remaining: 3.32s
140:    learn: 0.4147936       total: 7.79s    remaining: 3.26s
141:    learn: 0.4145682       total: 7.85s    remaining: 3.21s
142:    learn: 0.4143981       total: 7.91s    remaining: 3.15s
143:    learn: 0.4143676       total: 7.96s    remaining: 3.1s
144:    learn: 0.4143042       total: 8.03s    remaining: 3.05s
145:    learn: 0.4137568       total: 8.08s    remaining: 2.99s
146:    learn: 0.4135845       total: 8.13s    remaining: 2.93s
147:    learn: 0.4132070       total: 8.19s    remaining: 2.88s
148:    learn: 0.4128852       total: 8.24s    remaining: 2.82s
149:    learn: 0.4127002       total: 8.3s     remaining: 2.77s
150:    learn: 0.4125761       total: 8.36s    remaining: 2.71s
151:    learn: 0.4125490       total: 8.43s    remaining: 2.66s
152:    learn: 0.4124405       total: 8.47s    remaining: 2.6s
153:    learn: 0.4124339       total: 8.53s    remaining: 2.55s
154:    learn: 0.4122241       total: 8.58s    remaining: 2.49s
155:    learn: 0.4118727       total: 8.62s    remaining: 2.43s
156:    learn: 0.4117171       total: 8.67s    remaining: 2.37s
157:    learn: 0.4115729       total: 8.72s    remaining: 2.32s
158:    learn: 0.4112295       total: 8.79s    remaining: 2.27s
159:    learn: 0.4110119       total: 8.83s    remaining: 2.21s
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160:    learn: 0.4108706    total: 8.88s    remaining: 2.15s
161:    learn: 0.4107251    total: 8.94s    remaining: 2.1s
162:    learn: 0.4106364    total: 8.99s    remaining: 2.04s
163:    learn: 0.4104776    total: 9.05s    remaining: 1.99s
164:    learn: 0.4104260    total: 9.1s     remaining: 1.93s
165:    learn: 0.4104207    total: 9.15s    remaining: 1.87s
166:    learn: 0.4103226    total: 9.22s    remaining: 1.82s
167:    learn: 0.4101967    total: 9.27s    remaining: 1.76s
168:    learn: 0.4100058    total: 9.31s    remaining: 1.71s
169:    learn: 0.4097679    total: 9.36s    remaining: 1.65s
170:    learn: 0.4096607    total: 9.43s    remaining: 1.6s
171:    learn: 0.4095525    total: 9.48s    remaining: 1.54s
172:    learn: 0.4094116    total: 9.53s    remaining: 1.49s
173:    learn: 0.4093081    total: 9.58s    remaining: 1.43s
174:    learn: 0.4089316    total: 9.64s    remaining: 1.38s
175:    learn: 0.4089040    total: 9.69s    remaining: 1.32s
176:    learn: 0.4087155    total: 9.76s    remaining: 1.27s
177:    learn: 0.4086591    total: 9.81s    remaining: 1.21s
178:    learn: 0.4085179    total: 9.87s    remaining: 1.16s
179:    learn: 0.4084239    total: 9.95s    remaining: 1.1s
180:    learn: 0.4081917    total: 10s      remaining: 1.05s
181:    learn: 0.4080668    total: 10.1s    remaining: 996ms
182:    learn: 0.4080636    total: 10.1s    remaining: 941ms
183:    learn: 0.4078593    total: 10.2s    remaining: 885ms
184:    learn: 0.4075466    total: 10.2s    remaining: 830ms
185:    learn: 0.4075031    total: 10.3s    remaining: 775ms
186:    learn: 0.4073537    total: 10.3s    remaining: 720ms
187:    learn: 0.4072780    total: 10.4s    remaining: 664ms
188:    learn: 0.4072121    total: 10.5s    remaining: 609ms
189:    learn: 0.4072096    total: 10.5s    remaining: 554ms
190:    learn: 0.4070456    total: 10.6s    remaining: 498ms
191:    learn: 0.4069383    total: 10.7s    remaining: 444ms
192:    learn: 0.4066208    total: 10.7s    remaining: 388ms
193:    learn: 0.4063230    total: 10.8s    remaining: 333ms
194:    learn: 0.4060142    total: 10.8s    remaining: 277ms
195:    learn: 0.4057995    total: 10.9s    remaining: 222ms
196:    learn: 0.4056406    total: 10.9s    remaining: 167ms
197:    learn: 0.4053892    total: 11s      remaining: 111ms
198:    learn: 0.4051360    total: 11s      remaining: 55.4ms
199:    learn: 0.4045408    total: 11.1s    remaining: 0us
0:      learn: 0.6370206    total: 46.9ms   remaining: 9.33s
1:      learn: 0.5939730    total: 96.8ms   remaining: 9.59s
2:      learn: 0.5682174    total: 158ms    remaining: 10.4s
3:      learn: 0.5476241    total: 214ms    remaining: 10.5s
4:      learn: 0.5328532    total: 268ms    remaining: 10.5s
5:      learn: 0.5158231    total: 347ms    remaining: 11.2s
6:      learn: 0.5069289    total: 399ms    remaining: 11s
7:      learn: 0.4958936    total: 449ms    remaining: 10.8s
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8:      learn: 0.4886353      total: 513ms      remaining: 10.9s
9:      learn: 0.4829351      total: 568ms      remaining: 10.8s
10:     learn: 0.4778077      total: 613ms      remaining: 10.5s
11:     learn: 0.4731227      total: 664ms      remaining: 10.4s
12:     learn: 0.4681632      total: 728ms      remaining: 10.5s
13:     learn: 0.4648407      total: 798ms      remaining: 10.6s
14:     learn: 0.4623293      total: 860ms      remaining: 10.6s
15:     learn: 0.4600427      total: 911ms      remaining: 10.5s
16:     learn: 0.4580274      total: 969ms      remaining: 10.4s
17:     learn: 0.4564193      total: 1.02s      remaining: 10.4s
18:     learn: 0.4543785      total: 1.09s      remaining: 10.3s
19:     learn: 0.4531092      total: 1.16s      remaining: 10.5s
20:     learn: 0.4522679      total: 1.23s      remaining: 10.4s
21:     learn: 0.4504056      total: 1.29s      remaining: 10.4s
22:     learn: 0.4490935      total: 1.36s      remaining: 10.5s
23:     learn: 0.4483819      total: 1.44s      remaining: 10.5s
24:     learn: 0.4479310      total: 1.5s       remaining: 10.5s
25:     learn: 0.4472617      total: 1.57s      remaining: 10.5s
26:     learn: 0.4463399      total: 1.66s      remaining: 10.6s
27:     learn: 0.4454120      total: 1.72s      remaining: 10.6s
28:     learn: 0.4448431      total: 1.77s      remaining: 10.5s
29:     learn: 0.4434707      total: 1.83s      remaining: 10.4s
30:     learn: 0.4427632      total: 1.9s       remaining: 10.4s
31:     learn: 0.4419445      total: 1.97s      remaining: 10.4s
32:     learn: 0.4415560      total: 2.04s      remaining: 10.3s
33:     learn: 0.4411293      total: 2.11s      remaining: 10.3s
34:     learn: 0.4408088      total: 2.17s      remaining: 10.2s
35:     learn: 0.4404306      total: 2.24s      remaining: 10.2s
36:     learn: 0.4399025      total: 2.32s      remaining: 10.2s
37:     learn: 0.4397494      total: 2.37s      remaining: 10.1s
38:     learn: 0.4394879      total: 2.43s      remaining: 10s
39:     learn: 0.4392393      total: 2.49s      remaining: 9.96s
40:     learn: 0.4390145      total: 2.55s      remaining: 9.89s
41:     learn: 0.4385505      total: 2.61s      remaining: 9.81s
42:     learn: 0.4382703      total: 2.69s      remaining: 9.83s
43:     learn: 0.4378024      total: 2.74s      remaining: 9.72s
44:     learn: 0.4375895      total: 2.79s      remaining: 9.62s
45:     learn: 0.4373844      total: 2.85s      remaining: 9.54s
46:     learn: 0.4362149      total: 2.91s      remaining: 9.48s
47:     learn: 0.4360404      total: 2.96s      remaining: 9.38s
48:     learn: 0.4356644      total: 3.03s      remaining: 9.34s
49:     learn: 0.4354740      total: 3.09s      remaining: 9.26s
50:     learn: 0.4353514      total: 3.15s      remaining: 9.2s
51:     learn: 0.4350718      total: 3.2s       remaining: 9.11s
52:     learn: 0.4344722      total: 3.25s      remaining: 9.02s
53:     learn: 0.4342081      total: 3.31s      remaining: 8.94s
54:     learn: 0.4339646      total: 3.38s      remaining: 8.9s
55:     learn: 0.4337430      total: 3.43s      remaining: 8.81s
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56:     learn: 0.4333845     total: 3.5s      remaining: 8.78s
57:     learn: 0.4332491     total: 3.58s     remaining: 8.76s
58:     learn: 0.4330003     total: 3.64s     remaining: 8.69s
59:     learn: 0.4329337     total: 3.68s     remaining: 8.59s
60:     learn: 0.4327291     total: 3.73s     remaining: 8.51s
61:     learn: 0.4325728     total: 3.8s      remaining: 8.46s
62:     learn: 0.4324598     total: 3.87s     remaining: 8.42s
63:     learn: 0.4321758     total: 3.92s     remaining: 8.34s
64:     learn: 0.4320249     total: 4s        remaining: 8.3s
65:     learn: 0.4316052     total: 4.04s     remaining: 8.21s
66:     learn: 0.4311735     total: 4.12s     remaining: 8.18s
67:     learn: 0.4310168     total: 4.16s     remaining: 8.08s
68:     learn: 0.4306477     total: 4.23s     remaining: 8.03s
69:     learn: 0.4298564     total: 4.28s     remaining: 7.96s
70:     learn: 0.4296893     total: 4.33s     remaining: 7.88s
71:     learn: 0.4292379     total: 4.41s     remaining: 7.83s
72:     learn: 0.4290254     total: 4.45s     remaining: 7.74s
73:     learn: 0.4288565     total: 4.5s      remaining: 7.66s
74:     learn: 0.4284083     total: 4.56s     remaining: 7.6s
75:     learn: 0.4283446     total: 4.6s      remaining: 7.51s
76:     learn: 0.4282776     total: 4.66s     remaining: 7.44s
77:     learn: 0.4276154     total: 4.74s     remaining: 7.42s
78:     learn: 0.4270210     total: 4.84s     remaining: 7.41s
79:     learn: 0.4265786     total: 4.89s     remaining: 7.34s
80:     learn: 0.4264834     total: 4.94s     remaining: 7.26s
81:     learn: 0.4264792     total: 4.97s     remaining: 7.16s
82:     learn: 0.4262453     total: 5.05s     remaining: 7.12s
83:     learn: 0.4260687     total: 5.1s      remaining: 7.04s
84:     learn: 0.4259900     total: 5.14s     remaining: 6.96s
85:     learn: 0.4256758     total: 5.2s      remaining: 6.89s
86:     learn: 0.4255580     total: 5.24s     remaining: 6.81s
87:     learn: 0.4254249     total: 5.29s     remaining: 6.74s
88:     learn: 0.4252808     total: 5.35s     remaining: 6.68s
89:     learn: 0.4250774     total: 5.41s     remaining: 6.61s
90:     learn: 0.4247794     total: 5.48s     remaining: 6.57s
91:     learn: 0.4246176     total: 5.55s     remaining: 6.51s
92:     learn: 0.4240222     total: 5.62s     remaining: 6.47s
93:     learn: 0.4235612     total: 5.67s     remaining: 6.39s
94:     learn: 0.4232949     total: 5.72s     remaining: 6.32s
95:     learn: 0.4232031     total: 5.77s     remaining: 6.25s
96:     learn: 0.4228438     total: 5.84s     remaining: 6.2s
97:     learn: 0.4227253     total: 5.89s     remaining: 6.13s
98:     learn: 0.4223908     total: 5.96s     remaining: 6.08s
99:     learn: 0.4218561     total: 6.01s     remaining: 6.01s
100:    learn: 0.4215025     total: 6.08s     remaining: 5.96s
101:    learn: 0.4212744     total: 6.16s     remaining: 5.92s
102:    learn: 0.4210483     total: 6.21s     remaining: 5.84s
103:    learn: 0.4209058     total: 6.27s     remaining: 5.79s
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104:    learn: 0.4205581    total: 6.32s    remaining: 5.71s
105:    learn: 0.4203206    total: 6.36s    remaining: 5.64s
106:    learn: 0.4201659    total: 6.42s    remaining: 5.58s
107:    learn: 0.4194345    total: 6.47s    remaining: 5.51s
108:    learn: 0.4191172    total: 6.54s    remaining: 5.46s
109:    learn: 0.4189408    total: 6.58s    remaining: 5.38s
110:    learn: 0.4186625    total: 6.64s    remaining: 5.33s
111:    learn: 0.4180831    total: 6.71s    remaining: 5.27s
112:    learn: 0.4179612    total: 6.77s    remaining: 5.21s
113:    learn: 0.4174808    total: 6.84s    remaining: 5.16s
114:    learn: 0.4168373    total: 6.91s    remaining: 5.11s
115:    learn: 0.4166956    total: 6.96s    remaining: 5.04s
116:    learn: 0.4163337    total: 7.02s    remaining: 4.98s
117:    learn: 0.4159790    total: 7.07s    remaining: 4.91s
118:    learn: 0.4156670    total: 7.12s    remaining: 4.85s
119:    learn: 0.4154462    total: 7.17s    remaining: 4.78s
120:    learn: 0.4152071    total: 7.23s    remaining: 4.72s
121:    learn: 0.4150026    total: 7.28s    remaining: 4.66s
122:    learn: 0.4146285    total: 7.34s    remaining: 4.59s
123:    learn: 0.4141919    total: 7.41s    remaining: 4.54s
124:    learn: 0.4139500    total: 7.46s    remaining: 4.48s
125:    learn: 0.4136566    total: 7.53s    remaining: 4.42s
126:    learn: 0.4135251    total: 7.58s    remaining: 4.36s
127:    learn: 0.4129247    total: 7.63s    remaining: 4.29s
128:    learn: 0.4127088    total: 7.68s    remaining: 4.23s
129:    learn: 0.4125995    total: 7.75s    remaining: 4.17s
130:    learn: 0.4123887    total: 7.85s    remaining: 4.13s
131:    learn: 0.4122034    total: 7.91s    remaining: 4.08s
132:    learn: 0.4120500    total: 7.97s    remaining: 4.01s
133:    learn: 0.4117736    total: 8.02s    remaining: 3.95s
134:    learn: 0.4116740    total: 8.09s    remaining: 3.89s
135:    learn: 0.4114118    total: 8.16s    remaining: 3.84s
136:    learn: 0.4112796    total: 8.21s    remaining: 3.77s
137:    learn: 0.4110841    total: 8.25s    remaining: 3.71s
138:    learn: 0.4109652    total: 8.3s     remaining: 3.64s
139:    learn: 0.4108629    total: 8.36s    remaining: 3.58s
140:    learn: 0.4106987    total: 8.42s    remaining: 3.52s
141:    learn: 0.4105780    total: 8.48s    remaining: 3.46s
142:    learn: 0.4104156    total: 8.53s    remaining: 3.4s
143:    learn: 0.4102602    total: 8.57s    remaining: 3.33s
144:    learn: 0.4101135    total: 8.64s    remaining: 3.28s
145:    learn: 0.4099626    total: 8.71s    remaining: 3.22s
146:    learn: 0.4096183    total: 8.76s    remaining: 3.16s
147:    learn: 0.4093827    total: 8.81s    remaining: 3.09s
148:    learn: 0.4092318    total: 8.88s    remaining: 3.04s
149:    learn: 0.4091404    total: 8.94s    remaining: 2.98s
150:    learn: 0.4089638    total: 8.99s    remaining: 2.92s
151:    learn: 0.4086562    total: 9.04s    remaining: 2.85s
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152:    learn: 0.4084737    total: 9.1s     remaining: 2.8s
153:    learn: 0.4084578    total: 9.15s    remaining: 2.73s
154:    learn: 0.4084402    total: 9.2s     remaining: 2.67s
155:    learn: 0.4080809    total: 9.26s    remaining: 2.61s
156:    learn: 0.4079052    total: 9.31s    remaining: 2.55s
157:    learn: 0.4077894    total: 9.38s    remaining: 2.49s
158:    learn: 0.4075881    total: 9.43s    remaining: 2.43s
159:    learn: 0.4075306    total: 9.48s    remaining: 2.37s
160:    learn: 0.4071282    total: 9.55s    remaining: 2.31s
161:    learn: 0.4068326    total: 9.61s    remaining: 2.25s
162:    learn: 0.4066712    total: 9.66s    remaining: 2.19s
163:    learn: 0.4064238    total: 9.72s    remaining: 2.13s
164:    learn: 0.4062692    total: 9.79s    remaining: 2.08s
165:    learn: 0.4061905    total: 9.85s    remaining: 2.02s
166:    learn: 0.4060287    total: 9.9s     remaining: 1.96s
167:    learn: 0.4058621    total: 9.95s    remaining: 1.9s
168:    learn: 0.4057024    total: 10s      remaining: 1.84s
169:    learn: 0.4054500    total: 10.1s    remaining: 1.78s
170:    learn: 0.4051960    total: 10.1s    remaining: 1.72s
171:    learn: 0.4050783    total: 10.2s    remaining: 1.66s
172:    learn: 0.4048738    total: 10.3s    remaining: 1.6s
173:    learn: 0.4048633    total: 10.3s    remaining: 1.54s
174:    learn: 0.4046277    total: 10.4s    remaining: 1.48s
175:    learn: 0.4044936    total: 10.4s    remaining: 1.42s
176:    learn: 0.4043780    total: 10.5s    remaining: 1.36s
177:    learn: 0.4042012    total: 10.5s    remaining: 1.3s
178:    learn: 0.4039900    total: 10.6s    remaining: 1.24s
179:    learn: 0.4039256    total: 10.6s    remaining: 1.18s
180:    learn: 0.4037930    total: 10.7s    remaining: 1.12s
181:    learn: 0.4037004    total: 10.7s    remaining: 1.06s
182:    learn: 0.4035850    total: 10.8s    remaining: 1s
183:    learn: 0.4034870    total: 10.9s    remaining: 944ms
184:    learn: 0.4032475    total: 10.9s    remaining: 886ms
185:    learn: 0.4030718    total: 11s      remaining: 827ms
186:    learn: 0.4026731    total: 11.1s    remaining: 769ms
187:    learn: 0.4025050    total: 11.1s    remaining: 710ms
188:    learn: 0.4023772    total: 11.2s    remaining: 651ms
189:    learn: 0.4022316    total: 11.2s    remaining: 592ms
190:    learn: 0.4019814    total: 11.3s    remaining: 533ms
191:    learn: 0.4019207    total: 11.4s    remaining: 474ms
192:    learn: 0.4017147    total: 11.5s    remaining: 415ms
193:    learn: 0.4015743    total: 11.5s    remaining: 356ms
194:    learn: 0.4014075    total: 11.5s    remaining: 296ms
195:    learn: 0.4013188    total: 11.6s    remaining: 237ms
196:    learn: 0.4012622    total: 11.7s    remaining: 178ms
197:    learn: 0.4009730    total: 11.7s    remaining: 119ms
198:    learn: 0.4008833    total: 11.8s    remaining: 59.3ms
199:    learn: 0.4007607    total: 11.9s    remaining: 0us
```

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0:      learn: 0.6472000      total: 48.8ms    remaining: 9.72s
1:      learn: 0.6092201      total: 101ms     remaining: 10s
2:      learn: 0.5706984      total: 152ms     remaining: 10s
3:      learn: 0.5504883      total: 223ms     remaining: 10.9s
4:      learn: 0.5278436      total: 277ms     remaining: 10.8s
5:      learn: 0.5155161      total: 337ms     remaining: 10.9s
6:      learn: 0.5050934      total: 391ms     remaining: 10.8s
7:      learn: 0.4950889      total: 451ms     remaining: 10.8s
8:      learn: 0.4877070      total: 504ms     remaining: 10.7s
9:      learn: 0.4816108      total: 563ms     remaining: 10.7s
10:     learn: 0.4769939      total: 635ms     remaining: 10.9s
11:     learn: 0.4724078      total: 699ms     remaining: 10.9s
12:     learn: 0.4680642      total: 763ms     remaining: 11s
13:     learn: 0.4631070      total: 814ms     remaining: 10.8s
14:     learn: 0.4609787      total: 866ms     remaining: 10.7s
15:     learn: 0.4589628      total: 934ms     remaining: 10.7s
16:     learn: 0.4567119      total: 1.01s     remaining: 10.9s
17:     learn: 0.4552556      total: 1.06s     remaining: 10.8s
18:     learn: 0.4540714      total: 1.13s     remaining: 10.8s
19:     learn: 0.4531225      total: 1.18s     remaining: 10.6s
20:     learn: 0.4508626      total: 1.25s     remaining: 10.7s
21:     learn: 0.4491723      total: 1.3s      remaining: 10.6s
22:     learn: 0.4481642      total: 1.35s     remaining: 10.4s
23:     learn: 0.4471167      total: 1.39s     remaining: 10.2s
24:     learn: 0.4464366      total: 1.47s     remaining: 10.3s
25:     learn: 0.4456721      total: 1.52s     remaining: 10.2s
26:     learn: 0.4446323      total: 1.59s     remaining: 10.2s
27:     learn: 0.4440895      total: 1.64s     remaining: 10.1s
28:     learn: 0.4436425      total: 1.71s     remaining: 10.1s
29:     learn: 0.4431349      total: 1.76s     remaining: 10s
30:     learn: 0.4421314      total: 1.84s     remaining: 10s
31:     learn: 0.4417722      total: 1.9s      remaining: 9.97s
32:     learn: 0.4413830      total: 1.96s     remaining: 9.91s
33:     learn: 0.4407442      total: 2.01s     remaining: 9.8s
34:     learn: 0.4403980      total: 2.07s     remaining: 9.77s
35:     learn: 0.4401211      total: 2.12s     remaining: 9.67s
36:     learn: 0.4396870      total: 2.17s     remaining: 9.56s
37:     learn: 0.4394520      total: 2.22s     remaining: 9.45s
38:     learn: 0.4390375      total: 2.27s     remaining: 9.36s
39:     learn: 0.4382061      total: 2.32s     remaining: 9.3s
40:     learn: 0.4376668      total: 2.37s     remaining: 9.21s
41:     learn: 0.4374442      total: 2.42s     remaining: 9.12s
42:     learn: 0.4364843      total: 2.5s      remaining: 9.11s
43:     learn: 0.4362877      total: 2.56s     remaining: 9.06s
44:     learn: 0.4358748      total: 2.61s     remaining: 8.98s
45:     learn: 0.4354895      total: 2.67s     remaining: 8.96s
46:     learn: 0.4351757      total: 2.73s     remaining: 8.9s
47:     learn: 0.4343824      total: 2.79s     remaining: 8.84s
```

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48:     learn: 0.4342015     total: 2.88s     remaining: 8.89s
49:     learn: 0.4341954     total: 2.91s     remaining: 8.73s
50:     learn: 0.4337208     total: 2.96s     remaining: 8.65s
51:     learn: 0.4334658     total: 3.04s     remaining: 8.65s
52:     learn: 0.4333288     total: 3.09s     remaining: 8.58s
53:     learn: 0.4326664     total: 3.15s     remaining: 8.52s
54:     learn: 0.4326041     total: 3.21s     remaining: 8.46s
55:     learn: 0.4322969     total: 3.27s     remaining: 8.4s
56:     learn: 0.4317968     total: 3.31s     remaining: 8.31s
57:     learn: 0.4316922     total: 3.36s     remaining: 8.23s
58:     learn: 0.4314632     total: 3.41s     remaining: 8.16s
59:     learn: 0.4311714     total: 3.48s     remaining: 8.11s
60:     learn: 0.4308898     total: 3.54s     remaining: 8.06s
61:     learn: 0.4307080     total: 3.6s      remaining: 8.01s
62:     learn: 0.4302636     total: 3.65s     remaining: 7.95s
63:     learn: 0.4301657     total: 3.73s     remaining: 7.93s
64:     learn: 0.4300782     total: 3.79s     remaining: 7.86s
65:     learn: 0.4298268     total: 3.83s     remaining: 7.79s
66:     learn: 0.4292569     total: 3.89s     remaining: 7.72s
67:     learn: 0.4291433     total: 3.94s     remaining: 7.66s
68:     learn: 0.4287773     total: 4s        remaining: 7.6s
69:     learn: 0.4284576     total: 4.06s     remaining: 7.54s
70:     learn: 0.4282240     total: 4.11s     remaining: 7.47s
71:     learn: 0.4278489     total: 4.16s     remaining: 7.4s
72:     learn: 0.4276035     total: 4.22s     remaining: 7.34s
73:     learn: 0.4274365     total: 4.27s     remaining: 7.26s
74:     learn: 0.4273267     total: 4.32s     remaining: 7.2s
75:     learn: 0.4271160     total: 4.36s     remaining: 7.12s
76:     learn: 0.4269851     total: 4.41s     remaining: 7.04s
77:     learn: 0.4265693     total: 4.48s     remaining: 7.01s
78:     learn: 0.4263530     total: 4.54s     remaining: 6.95s
79:     learn: 0.4261621     total: 4.6s      remaining: 6.9s
80:     learn: 0.4257275     total: 4.66s     remaining: 6.85s
81:     learn: 0.4254430     total: 4.73s     remaining: 6.8s
82:     learn: 0.4252839     total: 4.78s     remaining: 6.73s
83:     learn: 0.4249892     total: 4.84s     remaining: 6.68s
84:     learn: 0.4247570     total: 4.9s      remaining: 6.63s
85:     learn: 0.4246616     total: 4.95s     remaining: 6.56s
86:     learn: 0.4245362     total: 5.02s     remaining: 6.52s
87:     learn: 0.4242051     total: 5.07s     remaining: 6.45s
88:     learn: 0.4239716     total: 5.14s     remaining: 6.41s
89:     learn: 0.4236086     total: 5.21s     remaining: 6.37s
90:     learn: 0.4235159     total: 5.26s     remaining: 6.29s
91:     learn: 0.4234063     total: 5.33s     remaining: 6.25s
92:     learn: 0.4232286     total: 5.38s     remaining: 6.19s
93:     learn: 0.4225885     total: 5.43s     remaining: 6.12s
94:     learn: 0.4222025     total: 5.48s     remaining: 6.06s
95:     learn: 0.4221972     total: 5.51s     remaining: 5.97s
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96:     learn: 0.4221237     total: 5.58s     remaining: 5.92s
97:     learn: 0.4219478     total: 5.63s     remaining: 5.86s
98:     learn: 0.4215176     total: 5.68s     remaining: 5.79s
99:     learn: 0.4213014     total: 5.73s     remaining: 5.73s
100:    learn: 0.4211012     total: 5.78s     remaining: 5.66s
101:    learn: 0.4209444     total: 5.82s     remaining: 5.59s
102:    learn: 0.4208910     total: 5.87s     remaining: 5.53s
103:    learn: 0.4206384     total: 5.93s     remaining: 5.47s
104:    learn: 0.4204868     total: 5.97s     remaining: 5.4s
105:    learn: 0.4200298     total: 6.04s     remaining: 5.36s
106:    learn: 0.4197066     total: 6.09s     remaining: 5.29s
107:    learn: 0.4194972     total: 6.15s     remaining: 5.24s
108:    learn: 0.4191549     total: 6.21s     remaining: 5.18s
109:    learn: 0.4190381     total: 6.27s     remaining: 5.13s
110:    learn: 0.4183686     total: 6.31s     remaining: 5.06s
111:    learn: 0.4180069     total: 6.36s     remaining: 5s
112:    learn: 0.4176630     total: 6.41s     remaining: 4.93s
113:    learn: 0.4173665     total: 6.47s     remaining: 4.88s
114:    learn: 0.4170632     total: 6.53s     remaining: 4.83s
115:    learn: 0.4169499     total: 6.62s     remaining: 4.79s
116:    learn: 0.4167461     total: 6.67s     remaining: 4.73s
117:    learn: 0.4166882     total: 6.75s     remaining: 4.69s
118:    learn: 0.4161542     total: 6.81s     remaining: 4.63s
119:    learn: 0.4159900     total: 6.87s     remaining: 4.58s
120:    learn: 0.4155062     total: 6.92s     remaining: 4.52s
121:    learn: 0.4152675     total: 6.97s     remaining: 4.46s
122:    learn: 0.4152253     total: 7.03s     remaining: 4.4s
123:    learn: 0.4150874     total: 7.1s      remaining: 4.35s
124:    learn: 0.4144875     total: 7.15s     remaining: 4.29s
125:    learn: 0.4143732     total: 7.21s     remaining: 4.23s
126:    learn: 0.4141389     total: 7.25s     remaining: 4.17s
127:    learn: 0.4136476     total: 7.31s     remaining: 4.11s
128:    learn: 0.4132337     total: 7.36s     remaining: 4.05s
129:    learn: 0.4130459     total: 7.42s     remaining: 4s
130:    learn: 0.4129135     total: 7.48s     remaining: 3.94s
131:    learn: 0.4127114     total: 7.53s     remaining: 3.88s
132:    learn: 0.4126178     total: 7.58s     remaining: 3.82s
133:    learn: 0.4124306     total: 7.66s     remaining: 3.77s
134:    learn: 0.4122624     total: 7.72s     remaining: 3.71s
135:    learn: 0.4119688     total: 7.77s     remaining: 3.66s
136:    learn: 0.4117516     total: 7.83s     remaining: 3.6s
137:    learn: 0.4114957     total: 7.91s     remaining: 3.55s
138:    learn: 0.4109361     total: 7.96s     remaining: 3.49s
139:    learn: 0.4107458     total: 8.02s     remaining: 3.44s
140:    learn: 0.4104021     total: 8.07s     remaining: 3.38s
141:    learn: 0.4103386     total: 8.12s     remaining: 3.32s
142:    learn: 0.4100587     total: 8.19s     remaining: 3.26s
143:    learn: 0.4100453     total: 8.24s     remaining: 3.21s
```

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144:    learn: 0.4099805    total: 8.3s     remaining: 3.15s
145:    learn: 0.4096796    total: 8.35s    remaining: 3.09s
146:    learn: 0.4095137    total: 8.41s    remaining: 3.03s
147:    learn: 0.4094273    total: 8.48s    remaining: 2.98s
148:    learn: 0.4092488    total: 8.53s    remaining: 2.92s
149:    learn: 0.4090826    total: 8.58s    remaining: 2.86s
150:    learn: 0.4089455    total: 8.64s    remaining: 2.8s
151:    learn: 0.4088475    total: 8.69s    remaining: 2.75s
152:    learn: 0.4086418    total: 8.75s    remaining: 2.69s
153:    learn: 0.4084856    total: 8.84s    remaining: 2.64s
154:    learn: 0.4081376    total: 8.92s    remaining: 2.59s
155:    learn: 0.4080508    total: 8.98s    remaining: 2.53s
156:    learn: 0.4078854    total: 9.03s    remaining: 2.47s
157:    learn: 0.4078007    total: 9.08s    remaining: 2.41s
158:    learn: 0.4077060    total: 9.13s    remaining: 2.35s
159:    learn: 0.4074913    total: 9.19s    remaining: 2.3s
160:    learn: 0.4074357    total: 9.25s    remaining: 2.24s
161:    learn: 0.4073769    total: 9.29s    remaining: 2.18s
162:    learn: 0.4072850    total: 9.35s    remaining: 2.12s
163:    learn: 0.4070975    total: 9.4s     remaining: 2.06s
164:    learn: 0.4070342    total: 9.45s    remaining: 2s
165:    learn: 0.4069179    total: 9.49s    remaining: 1.94s
166:    learn: 0.4068223    total: 9.55s    remaining: 1.89s
167:    learn: 0.4067559    total: 9.64s    remaining: 1.83s
168:    learn: 0.4065750    total: 9.72s    remaining: 1.78s
169:    learn: 0.4065416    total: 9.77s    remaining: 1.72s
170:    learn: 0.4064207    total: 9.85s    remaining: 1.67s
171:    learn: 0.4062530    total: 9.89s    remaining: 1.61s
172:    learn: 0.4060629    total: 9.96s    remaining: 1.55s
173:    learn: 0.4059423    total: 10s      remaining: 1.5s
174:    learn: 0.4057984    total: 10.1s    remaining: 1.44s
175:    learn: 0.4056275    total: 10.1s    remaining: 1.38s
176:    learn: 0.4054599    total: 10.2s    remaining: 1.32s
177:    learn: 0.4050291    total: 10.2s    remaining: 1.26s
178:    learn: 0.4047613    total: 10.3s    remaining: 1.21s
179:    learn: 0.4045606    total: 10.4s    remaining: 1.15s
180:    learn: 0.4044810    total: 10.4s    remaining: 1.09s
181:    learn: 0.4044763    total: 10.5s    remaining: 1.03s
182:    learn: 0.4042851    total: 10.5s    remaining: 979ms
183:    learn: 0.4042792    total: 10.6s    remaining: 922ms
184:    learn: 0.4041359    total: 10.7s    remaining: 864ms
185:    learn: 0.4040147    total: 10.7s    remaining: 806ms
186:    learn: 0.4038270    total: 10.8s    remaining: 750ms
187:    learn: 0.4037331    total: 10.9s    remaining: 694ms
188:    learn: 0.4035108    total: 10.9s    remaining: 635ms
189:    learn: 0.4034338    total: 11s      remaining: 578ms
190:    learn: 0.4031982    total: 11s      remaining: 520ms
191:    learn: 0.4028895    total: 11.1s    remaining: 462ms
```

```
192:    learn: 0.4027712       total: 11.1s    remaining: 404ms
193:    learn: 0.4025429       total: 11.2s    remaining: 347ms
194:    learn: 0.4024674       total: 11.3s    remaining: 289ms
195:    learn: 0.4021977       total: 11.3s    remaining: 231ms
196:    learn: 0.4020627       total: 11.4s    remaining: 173ms
197:    learn: 0.4019472       total: 11.5s    remaining: 116ms
198:    learn: 0.4017566       total: 11.5s    remaining: 57.9ms
199:    learn: 0.4016711       total: 11.6s    remaining: 0us
```

Mean train f1-score of data (CV) 10 is : 0.8146652674753274
Mean test f1-score of data (CV) 10 is : 0.8039347678015812

Shape of data 11 is :
(27303, 10)
Distribution of 11 is :
Yes   14102
No   13201
Name: TIMELY_RESPONSE, dtype: int64

<IPython.core.display.HTML object>

MetricVisualizer(layout=Layout(align_self='stretch', height='500px'))

Train f1_score [Yes]: for data 11 is : 0.8116314563418748
Train f1_score [No]: for data 11 is : 0.8188069850100448

	precision	recall	f1-score	support
No	0.78	0.85	0.81	924
Yes	0.85	0.77	0.81	988
accuracy			0.81	1912
macro avg	0.81	0.81	0.81	1912
weighted avg	0.81	0.81	0.81	1912
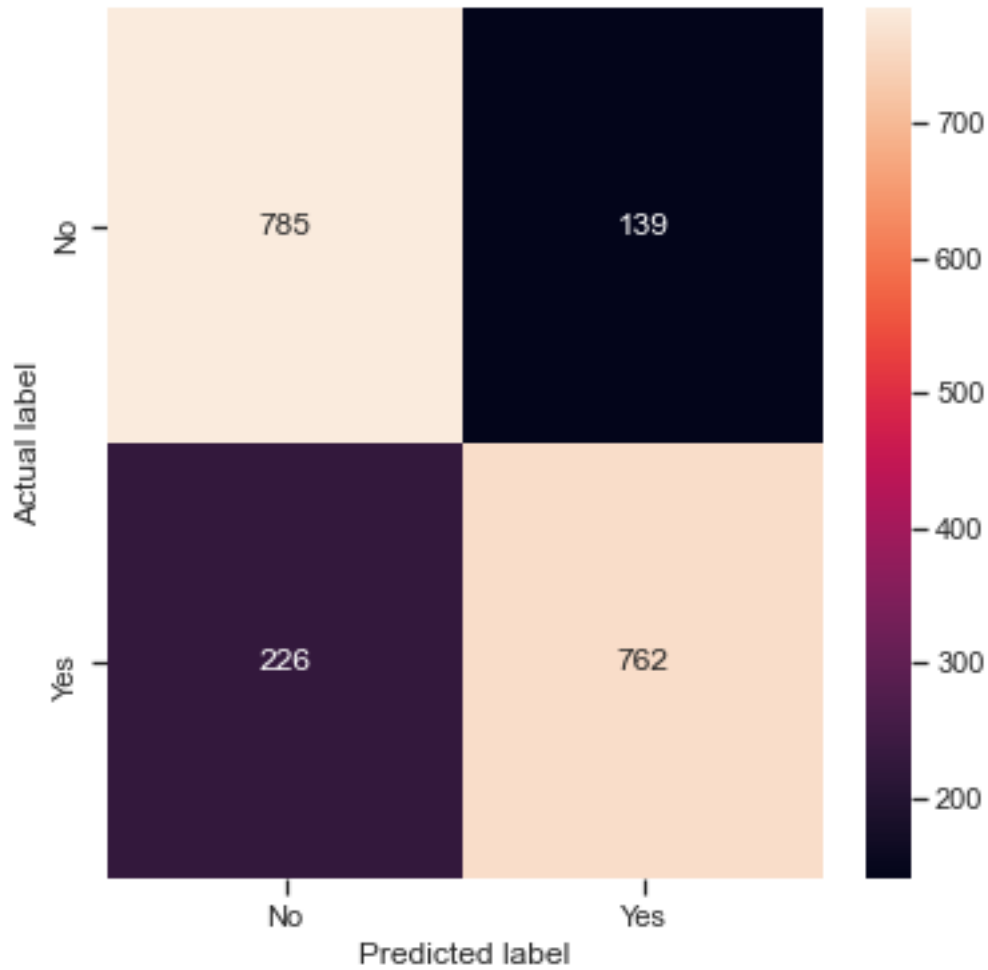
```
Cross validation result for data 11 is :
0:      learn: 0.6308321      total: 46.1ms    remaining: 9.17s
1:      learn: 0.5873453      total: 103ms     remaining: 10.2s
2:      learn: 0.5658624      total: 151ms     remaining: 9.93s
3:      learn: 0.5464851      total: 195ms     remaining: 9.54s
4:      learn: 0.5266989      total: 243ms     remaining: 9.48s
5:      learn: 0.5129445      total: 302ms     remaining: 9.76s
6:      learn: 0.5024791      total: 352ms     remaining: 9.71s
7:      learn: 0.4939869      total: 411ms     remaining: 9.86s
8:      learn: 0.4865640      total: 493ms     remaining: 10.5s
9:      learn: 0.4788901      total: 560ms     remaining: 10.6s
10:     learn: 0.4741268      total: 605ms     remaining: 10.4s
11:     learn: 0.4701033      total: 654ms     remaining: 10.2s
12:     learn: 0.4653794      total: 720ms     remaining: 10.4s
13:     learn: 0.4627928      total: 775ms     remaining: 10.3s
14:     learn: 0.4597649      total: 817ms     remaining: 10.1s
15:     learn: 0.4574212      total: 862ms     remaining: 9.91s
```

```
16:       learn: 0.4560442       total: 915ms       remaining: 9.85s
17:       learn: 0.4547625       total: 948ms       remaining: 9.58s
18:       learn: 0.4536013       total: 994ms       remaining: 9.47s
19:       learn: 0.4521385       total: 1.04s       remaining: 9.37s
20:       learn: 0.4508958       total: 1.11s       remaining: 9.43s
21:       learn: 0.4500152       total: 1.15s       remaining: 9.32s
22:       learn: 0.4485049       total: 1.2s        remaining: 9.26s
23:       learn: 0.4477374       total: 1.28s       remaining: 9.38s
24:       learn: 0.4464792       total: 1.34s       remaining: 9.38s
25:       learn: 0.4456048       total: 1.4s        remaining: 9.38s
26:       learn: 0.4449193       total: 1.45s       remaining: 9.32s
27:       learn: 0.4445261       total: 1.52s       remaining: 9.34s
28:       learn: 0.4432891       total: 1.57s       remaining: 9.28s
29:       learn: 0.4426804       total: 1.63s       remaining: 9.22s
30:       learn: 0.4416542       total: 1.72s       remaining: 9.36s
31:       learn: 0.4412761       total: 1.78s       remaining: 9.37s
32:       learn: 0.4408970       total: 1.86s       remaining: 9.43s
33:       learn: 0.4406567       total: 1.92s       remaining: 9.36s
34:       learn: 0.4399427       total: 1.97s       remaining: 9.29s
35:       learn: 0.4394128       total: 2.03s       remaining: 9.23s
36:       learn: 0.4384466       total: 2.08s       remaining: 9.14s
37:       learn: 0.4381198       total: 2.14s       remaining: 9.11s
38:       learn: 0.4375349       total: 2.22s       remaining: 9.15s
39:       learn: 0.4370067       total: 2.28s       remaining: 9.11s
40:       learn: 0.4366199       total: 2.32s       remaining: 9.01s
41:       learn: 0.4363205       total: 2.38s       remaining: 8.95s
42:       learn: 0.4357446       total: 2.44s       remaining: 8.91s
43:       learn: 0.4355485       total: 2.49s       remaining: 8.82s
44:       learn: 0.4348689       total: 2.54s       remaining: 8.76s
45:       learn: 0.4339792       total: 2.59s       remaining: 8.68s
46:       learn: 0.4335073       total: 2.67s       remaining: 8.68s
47:       learn: 0.4331574       total: 2.74s       remaining: 8.69s
48:       learn: 0.4330113       total: 2.79s       remaining: 8.59s
49:       learn: 0.4328402       total: 2.83s       remaining: 8.5s
50:       learn: 0.4326856       total: 2.88s       remaining: 8.42s
51:       learn: 0.4319664       total: 2.94s       remaining: 8.36s
52:       learn: 0.4316470       total: 2.99s       remaining: 8.3s
53:       learn: 0.4309993       total: 3.04s       remaining: 8.22s
54:       learn: 0.4308039       total: 3.09s       remaining: 8.14s
55:       learn: 0.4303857       total: 3.17s       remaining: 8.15s
56:       learn: 0.4300191       total: 3.22s       remaining: 8.07s
57:       learn: 0.4299593       total: 3.27s       remaining: 8.01s
58:       learn: 0.4290814       total: 3.32s       remaining: 7.94s
59:       learn: 0.4287718       total: 3.38s       remaining: 7.9s
60:       learn: 0.4284187       total: 3.44s       remaining: 7.83s
61:       learn: 0.4282392       total: 3.49s       remaining: 7.76s
62:       learn: 0.4278805       total: 3.54s       remaining: 7.69s
63:       learn: 0.4277310       total: 3.58s       remaining: 7.62s
```

```
64:     learn: 0.4275786     total: 3.65s     remaining: 7.58s
65:     learn: 0.4273827     total: 3.7s      remaining: 7.52s
66:     learn: 0.4269231     total: 3.76s     remaining: 7.46s
67:     learn: 0.4262024     total: 3.81s     remaining: 7.39s
68:     learn: 0.4257064     total: 3.87s     remaining: 7.36s
69:     learn: 0.4255746     total: 3.92s     remaining: 7.29s
70:     learn: 0.4252629     total: 3.97s     remaining: 7.22s
71:     learn: 0.4250671     total: 4.02s     remaining: 7.14s
72:     learn: 0.4247706     total: 4.06s     remaining: 7.07s
73:     learn: 0.4246718     total: 4.11s     remaining: 7s
74:     learn: 0.4244516     total: 4.16s     remaining: 6.93s
75:     learn: 0.4241914     total: 4.21s     remaining: 6.87s
76:     learn: 0.4239941     total: 4.28s     remaining: 6.83s
77:     learn: 0.4238168     total: 4.33s     remaining: 6.78s
78:     learn: 0.4234316     total: 4.38s     remaining: 6.71s
79:     learn: 0.4233200     total: 4.44s     remaining: 6.65s
80:     learn: 0.4231122     total: 4.49s     remaining: 6.6s
81:     learn: 0.4226938     total: 4.55s     remaining: 6.55s
82:     learn: 0.4225671     total: 4.59s     remaining: 6.48s
83:     learn: 0.4223646     total: 4.64s     remaining: 6.41s
84:     learn: 0.4222700     total: 4.74s     remaining: 6.41s
85:     learn: 0.4221293     total: 4.79s     remaining: 6.35s
86:     learn: 0.4219081     total: 4.84s     remaining: 6.29s
87:     learn: 0.4217761     total: 4.89s     remaining: 6.23s
88:     learn: 0.4217003     total: 4.94s     remaining: 6.16s
89:     learn: 0.4213635     total: 4.99s     remaining: 6.1s
90:     learn: 0.4211496     total: 5.04s     remaining: 6.03s
91:     learn: 0.4207256     total: 5.09s     remaining: 5.97s
92:     learn: 0.4205167     total: 5.14s     remaining: 5.92s
93:     learn: 0.4203131     total: 5.2s      remaining: 5.86s
94:     learn: 0.4199478     total: 5.25s     remaining: 5.8s
95:     learn: 0.4197322     total: 5.3s      remaining: 5.75s
96:     learn: 0.4194522     total: 5.36s     remaining: 5.69s
97:     learn: 0.4188447     total: 5.41s     remaining: 5.63s
98:     learn: 0.4186735     total: 5.5s      remaining: 5.62s
99:     learn: 0.4181985     total: 5.57s     remaining: 5.57s
100:    learn: 0.4179740     total: 5.64s     remaining: 5.53s
101:    learn: 0.4175594     total: 5.71s     remaining: 5.48s
102:    learn: 0.4172074     total: 5.76s     remaining: 5.42s
103:    learn: 0.4171167     total: 5.83s     remaining: 5.38s
104:    learn: 0.4169675     total: 5.88s     remaining: 5.32s
105:    learn: 0.4166583     total: 5.94s     remaining: 5.27s
106:    learn: 0.4165365     total: 5.99s     remaining: 5.21s
107:    learn: 0.4164738     total: 6.04s     remaining: 5.14s
108:    learn: 0.4160995     total: 6.11s     remaining: 5.1s
109:    learn: 0.4160655     total: 6.17s     remaining: 5.04s
110:    learn: 0.4157950     total: 6.21s     remaining: 4.98s
111:    learn: 0.4153622     total: 6.27s     remaining: 4.92s
```

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112:     learn: 0.4150389     total: 6.32s     remaining: 4.87s
113:     learn: 0.4148291     total: 6.39s     remaining: 4.82s
114:     learn: 0.4144675     total: 6.47s     remaining: 4.78s
115:     learn: 0.4142753     total: 6.52s     remaining: 4.72s
116:     learn: 0.4140691     total: 6.57s     remaining: 4.66s
117:     learn: 0.4138611     total: 6.62s     remaining: 4.6s
118:     learn: 0.4137647     total: 6.67s     remaining: 4.54s
119:     learn: 0.4134495     total: 6.72s     remaining: 4.48s
120:     learn: 0.4130912     total: 6.77s     remaining: 4.42s
121:     learn: 0.4124031     total: 6.84s     remaining: 4.37s
122:     learn: 0.4122744     total: 6.89s     remaining: 4.31s
123:     learn: 0.4120760     total: 6.94s     remaining: 4.25s
124:     learn: 0.4119184     total: 6.99s     remaining: 4.19s
125:     learn: 0.4115253     total: 7.04s     remaining: 4.14s
126:     learn: 0.4110241     total: 7.1s      remaining: 4.08s
127:     learn: 0.4109937     total: 7.16s     remaining: 4.03s
128:     learn: 0.4106559     total: 7.2s      remaining: 3.96s
129:     learn: 0.4105371     total: 7.26s     remaining: 3.91s
130:     learn: 0.4101109     total: 7.31s     remaining: 3.85s
131:     learn: 0.4100421     total: 7.36s     remaining: 3.79s
132:     learn: 0.4097829     total: 7.41s     remaining: 3.73s
133:     learn: 0.4097335     total: 7.46s     remaining: 3.68s
134:     learn: 0.4094929     total: 7.51s     remaining: 3.62s
135:     learn: 0.4093912     total: 7.57s     remaining: 3.56s
136:     learn: 0.4091342     total: 7.66s     remaining: 3.52s
137:     learn: 0.4088393     total: 7.71s     remaining: 3.46s
138:     learn: 0.4085776     total: 7.78s     remaining: 3.41s
139:     learn: 0.4082073     total: 7.83s     remaining: 3.36s
140:     learn: 0.4078340     total: 7.88s     remaining: 3.3s
141:     learn: 0.4072282     total: 7.94s     remaining: 3.24s
142:     learn: 0.4069898     total: 8s        remaining: 3.19s
143:     learn: 0.4067600     total: 8.06s     remaining: 3.13s
144:     learn: 0.4065680     total: 8.11s     remaining: 3.08s
145:     learn: 0.4063249     total: 8.18s     remaining: 3.02s
146:     learn: 0.4060637     total: 8.23s     remaining: 2.97s
147:     learn: 0.4057615     total: 8.28s     remaining: 2.91s
148:     learn: 0.4056017     total: 8.33s     remaining: 2.85s
149:     learn: 0.4054135     total: 8.39s     remaining: 2.8s
150:     learn: 0.4052460     total: 8.44s     remaining: 2.74s
151:     learn: 0.4049359     total: 8.52s     remaining: 2.69s
152:     learn: 0.4047794     total: 8.57s     remaining: 2.63s
153:     learn: 0.4046339     total: 8.62s     remaining: 2.58s
154:     learn: 0.4045031     total: 8.67s     remaining: 2.52s
155:     learn: 0.4043600     total: 8.74s     remaining: 2.46s
156:     learn: 0.4041135     total: 8.79s     remaining: 2.41s
157:     learn: 0.4039959     total: 8.84s     remaining: 2.35s
158:     learn: 0.4037178     total: 8.89s     remaining: 2.29s
159:     learn: 0.4035613     total: 8.96s     remaining: 2.24s
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160:    learn: 0.4033586    total: 9.01s    remaining: 2.18s
161:    learn: 0.4032493    total: 9.07s    remaining: 2.13s
162:    learn: 0.4028506    total: 9.13s    remaining: 2.07s
163:    learn: 0.4027951    total: 9.18s    remaining: 2.01s
164:    learn: 0.4025644    total: 9.24s    remaining: 1.96s
165:    learn: 0.4024094    total: 9.29s    remaining: 1.9s
166:    learn: 0.4023377    total: 9.34s    remaining: 1.85s
167:    learn: 0.4020143    total: 9.4s     remaining: 1.79s
168:    learn: 0.4017553    total: 9.46s    remaining: 1.73s
169:    learn: 0.4013307    total: 9.51s    remaining: 1.68s
170:    learn: 0.4012724    total: 9.59s    remaining: 1.63s
171:    learn: 0.4011589    total: 9.64s    remaining: 1.57s
172:    learn: 0.4009944    total: 9.69s    remaining: 1.51s
173:    learn: 0.4008847    total: 9.77s    remaining: 1.46s
174:    learn: 0.4006646    total: 9.82s    remaining: 1.4s
175:    learn: 0.4004720    total: 9.88s    remaining: 1.35s
176:    learn: 0.4001453    total: 9.96s    remaining: 1.29s
177:    learn: 0.4000610    total: 10s      remaining: 1.24s
178:    learn: 0.3999190    total: 10.1s    remaining: 1.18s
179:    learn: 0.3998284    total: 10.1s    remaining: 1.12s
180:    learn: 0.3996816    total: 10.2s    remaining: 1.07s
181:    learn: 0.3996051    total: 10.3s    remaining: 1.01s
182:    learn: 0.3993302    total: 10.3s    remaining: 959ms
183:    learn: 0.3992438    total: 10.4s    remaining: 903ms
184:    learn: 0.3991411    total: 10.4s    remaining: 846ms
185:    learn: 0.3990317    total: 10.5s    remaining: 789ms
186:    learn: 0.3987432    total: 10.5s    remaining: 733ms
187:    learn: 0.3982891    total: 10.6s    remaining: 677ms
188:    learn: 0.3981773    total: 10.7s    remaining: 620ms
189:    learn: 0.3978290    total: 10.7s    remaining: 565ms
190:    learn: 0.3977825    total: 10.8s    remaining: 508ms
191:    learn: 0.3976391    total: 10.8s    remaining: 451ms
192:    learn: 0.3972974    total: 10.9s    remaining: 395ms
193:    learn: 0.3971364    total: 10.9s    remaining: 338ms
194:    learn: 0.3967938    total: 11s      remaining: 282ms
195:    learn: 0.3966842    total: 11.1s    remaining: 226ms
196:    learn: 0.3965731    total: 11.1s    remaining: 169ms
197:    learn: 0.3965033    total: 11.2s    remaining: 113ms
198:    learn: 0.3962849    total: 11.2s    remaining: 56.4ms
199:    learn: 0.3961154    total: 11.3s    remaining: 0us
0:      learn: 0.6315986    total: 44.5ms   remaining: 8.86s
1:      learn: 0.5892951    total: 98.1ms   remaining: 9.71s
2:      learn: 0.5665459    total: 160ms    remaining: 10.5s
3:      learn: 0.5424024    total: 211ms    remaining: 10.3s
4:      learn: 0.5234193    total: 259ms    remaining: 10.1s
5:      learn: 0.5101462    total: 324ms    remaining: 10.5s
6:      learn: 0.5006719    total: 406ms    remaining: 11.2s
7:      learn: 0.4917904    total: 457ms    remaining: 11s
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8:      learn: 0.4867955      total: 495ms      remaining: 10.5s
9:      learn: 0.4808988      total: 570ms      remaining: 10.8s
10:     learn: 0.4761512      total: 659ms      remaining: 11.3s
11:     learn: 0.4728635      total: 727ms      remaining: 11.4s
12:     learn: 0.4691840      total: 813ms      remaining: 11.7s
13:     learn: 0.4650918      total: 863ms      remaining: 11.5s
14:     learn: 0.4621713      total: 922ms      remaining: 11.4s
15:     learn: 0.4596285      total: 979ms      remaining: 11.3s
16:     learn: 0.4586982      total: 1.01s      remaining: 10.9s
17:     learn: 0.4573377      total: 1.06s      remaining: 10.7s
18:     learn: 0.4553862      total: 1.11s      remaining: 10.6s
19:     learn: 0.4536116      total: 1.15s      remaining: 10.4s
20:     learn: 0.4518133      total: 1.23s      remaining: 10.5s
21:     learn: 0.4502138      total: 1.27s      remaining: 10.3s
22:     learn: 0.4491886      total: 1.31s      remaining: 10.1s
23:     learn: 0.4475430      total: 1.36s      remaining: 9.98s
24:     learn: 0.4467986      total: 1.42s      remaining: 9.97s
25:     learn: 0.4463344      total: 1.48s      remaining: 9.92s
26:     learn: 0.4455282      total: 1.55s      remaining: 9.93s
27:     learn: 0.4452388      total: 1.6s       remaining: 9.82s
28:     learn: 0.4443577      total: 1.67s      remaining: 9.83s
29:     learn: 0.4436185      total: 1.72s      remaining: 9.72s
30:     learn: 0.4431972      total: 1.77s      remaining: 9.64s
31:     learn: 0.4429841      total: 1.81s      remaining: 9.53s
32:     learn: 0.4425047      total: 1.89s      remaining: 9.54s
33:     learn: 0.4419900      total: 1.94s      remaining: 9.46s
34:     learn: 0.4411386      total: 2s         remaining: 9.42s
35:     learn: 0.4403655      total: 2.06s      remaining: 9.4s
36:     learn: 0.4400473      total: 2.12s      remaining: 9.33s
37:     learn: 0.4397605      total: 2.18s      remaining: 9.3s
38:     learn: 0.4391448      total: 2.23s      remaining: 9.21s
39:     learn: 0.4380346      total: 2.29s      remaining: 9.18s
40:     learn: 0.4377238      total: 2.34s      remaining: 9.08s
41:     learn: 0.4374668      total: 2.4s       remaining: 9.04s
42:     learn: 0.4371204      total: 2.48s      remaining: 9.05s
43:     learn: 0.4364077      total: 2.52s      remaining: 8.95s
44:     learn: 0.4360247      total: 2.59s      remaining: 8.91s
45:     learn: 0.4358589      total: 2.65s      remaining: 8.89s
46:     learn: 0.4356154      total: 2.71s      remaining: 8.84s
47:     learn: 0.4351881      total: 2.77s      remaining: 8.76s
48:     learn: 0.4348786      total: 2.81s      remaining: 8.66s
49:     learn: 0.4344493      total: 2.86s      remaining: 8.59s
50:     learn: 0.4342885      total: 2.92s      remaining: 8.52s
51:     learn: 0.4340258      total: 2.97s      remaining: 8.46s
52:     learn: 0.4337100      total: 3.02s      remaining: 8.38s
53:     learn: 0.4330673      total: 3.07s      remaining: 8.3s
54:     learn: 0.4328817      total: 3.12s      remaining: 8.23s
55:     learn: 0.4326488      total: 3.18s      remaining: 8.18s
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56:       learn: 0.4324934      total: 3.23s     remaining: 8.1s
57:       learn: 0.4324302      total: 3.27s     remaining: 8.01s
58:       learn: 0.4318234      total: 3.34s     remaining: 7.98s
59:       learn: 0.4318128      total: 3.36s     remaining: 7.83s
60:       learn: 0.4316681      total: 3.42s     remaining: 7.79s
61:       learn: 0.4315265      total: 3.48s     remaining: 7.75s
62:       learn: 0.4308424      total: 3.53s     remaining: 7.67s
63:       learn: 0.4305571      total: 3.58s     remaining: 7.61s
64:       learn: 0.4304846      total: 3.63s     remaining: 7.54s
65:       learn: 0.4298476      total: 3.68s     remaining: 7.46s
66:       learn: 0.4292461      total: 3.73s     remaining: 7.4s
67:       learn: 0.4290885      total: 3.79s     remaining: 7.36s
68:       learn: 0.4285113      total: 3.84s     remaining: 7.29s
69:       learn: 0.4281635      total: 3.89s     remaining: 7.22s
70:       learn: 0.4279144      total: 3.93s     remaining: 7.15s
71:       learn: 0.4272479      total: 3.99s     remaining: 7.09s
72:       learn: 0.4264899      total: 4.05s     remaining: 7.04s
73:       learn: 0.4263120      total: 4.11s     remaining: 6.99s
74:       learn: 0.4262815      total: 4.16s     remaining: 6.93s
75:       learn: 0.4258446      total: 4.22s     remaining: 6.89s
76:       learn: 0.4256756      total: 4.27s     remaining: 6.83s
77:       learn: 0.4251361      total: 4.32s     remaining: 6.75s
78:       learn: 0.4250159      total: 4.37s     remaining: 6.68s
79:       learn: 0.4248854      total: 4.41s     remaining: 6.61s
80:       learn: 0.4247497      total: 4.47s     remaining: 6.57s
81:       learn: 0.4246893      total: 4.51s     remaining: 6.5s
82:       learn: 0.4245271      total: 4.56s     remaining: 6.43s
83:       learn: 0.4244387      total: 4.61s     remaining: 6.37s
84:       learn: 0.4243519      total: 4.67s     remaining: 6.32s
85:       learn: 0.4235510      total: 4.72s     remaining: 6.26s
86:       learn: 0.4233954      total: 4.77s     remaining: 6.2s
87:       learn: 0.4230630      total: 4.82s     remaining: 6.13s
88:       learn: 0.4230226      total: 4.88s     remaining: 6.08s
89:       learn: 0.4227425      total: 4.95s     remaining: 6.04s
90:       learn: 0.4224805      total: 5s        remaining: 5.99s
91:       learn: 0.4220014      total: 5.05s     remaining: 5.93s
92:       learn: 0.4218464      total: 5.11s     remaining: 5.88s
93:       learn: 0.4217849      total: 5.15s     remaining: 5.81s
94:       learn: 0.4210855      total: 5.2s      remaining: 5.75s
95:       learn: 0.4208138      total: 5.25s     remaining: 5.69s
96:       learn: 0.4206869      total: 5.32s     remaining: 5.65s
97:       learn: 0.4201229      total: 5.37s     remaining: 5.59s
98:       learn: 0.4197856      total: 5.43s     remaining: 5.54s
99:       learn: 0.4193923      total: 5.51s     remaining: 5.51s
100:      learn: 0.4190308      total: 5.55s     remaining: 5.45s
101:      learn: 0.4189438      total: 5.61s     remaining: 5.39s
102:      learn: 0.4188316      total: 5.66s     remaining: 5.33s
103:      learn: 0.4184342      total: 5.71s     remaining: 5.27s
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104:     learn: 0.4180534     total: 5.77s     remaining: 5.22s
105:     learn: 0.4169443     total: 5.84s     remaining: 5.18s
106:     learn: 0.4167610     total: 5.91s     remaining: 5.14s
107:     learn: 0.4165744     total: 5.96s     remaining: 5.08s
108:     learn: 0.4164486     total: 6.02s     remaining: 5.02s
109:     learn: 0.4162077     total: 6.08s     remaining: 4.97s
110:     learn: 0.4160720     total: 6.13s     remaining: 4.92s
111:     learn: 0.4159099     total: 6.18s     remaining: 4.86s
112:     learn: 0.4154750     total: 6.24s     remaining: 4.8s
113:     learn: 0.4154152     total: 6.3s      remaining: 4.75s
114:     learn: 0.4153322     total: 6.37s     remaining: 4.71s
115:     learn: 0.4151505     total: 6.42s     remaining: 4.65s
116:     learn: 0.4147140     total: 6.49s     remaining: 4.6s
117:     learn: 0.4146327     total: 6.55s     remaining: 4.55s
118:     learn: 0.4144483     total: 6.6s      remaining: 4.49s
119:     learn: 0.4141544     total: 6.64s     remaining: 4.43s
120:     learn: 0.4140962     total: 6.71s     remaining: 4.38s
121:     learn: 0.4140411     total: 6.78s     remaining: 4.34s
122:     learn: 0.4139327     total: 6.85s     remaining: 4.29s
123:     learn: 0.4136181     total: 6.92s     remaining: 4.24s
124:     learn: 0.4131434     total: 6.97s     remaining: 4.18s
125:     learn: 0.4128467     total: 7.02s     remaining: 4.13s
126:     learn: 0.4127642     total: 7.08s     remaining: 4.07s
127:     learn: 0.4125031     total: 7.15s     remaining: 4.02s
128:     learn: 0.4121100     total: 7.21s     remaining: 3.97s
129:     learn: 0.4119377     total: 7.29s     remaining: 3.92s
130:     learn: 0.4118431     total: 7.34s     remaining: 3.87s
131:     learn: 0.4116282     total: 7.41s     remaining: 3.82s
132:     learn: 0.4110103     total: 7.46s     remaining: 3.76s
133:     learn: 0.4108488     total: 7.52s     remaining: 3.71s
134:     learn: 0.4107169     total: 7.58s     remaining: 3.65s
135:     learn: 0.4102083     total: 7.64s     remaining: 3.6s
136:     learn: 0.4100274     total: 7.69s     remaining: 3.54s
137:     learn: 0.4097656     total: 7.75s     remaining: 3.48s
138:     learn: 0.4097058     total: 7.8s      remaining: 3.42s
139:     learn: 0.4094172     total: 7.86s     remaining: 3.37s
140:     learn: 0.4090241     total: 7.95s     remaining: 3.33s
141:     learn: 0.4088483     total: 8.01s     remaining: 3.27s
142:     learn: 0.4087919     total: 8.05s     remaining: 3.21s
143:     learn: 0.4085978     total: 8.1s      remaining: 3.15s
144:     learn: 0.4083280     total: 8.19s     remaining: 3.11s
145:     learn: 0.4080297     total: 8.26s     remaining: 3.05s
146:     learn: 0.4076683     total: 8.33s     remaining: 3s
147:     learn: 0.4074465     total: 8.38s     remaining: 2.94s
148:     learn: 0.4073968     total: 8.44s     remaining: 2.89s
149:     learn: 0.4073009     total: 8.49s     remaining: 2.83s
150:     learn: 0.4070934     total: 8.54s     remaining: 2.77s
151:     learn: 0.4070036     total: 8.61s     remaining: 2.72s
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152:     learn: 0.4068660      total: 8.68s     remaining: 2.67s
153:     learn: 0.4068098      total: 8.73s     remaining: 2.61s
154:     learn: 0.4065787      total: 8.84s     remaining: 2.57s
155:     learn: 0.4064314      total: 8.92s     remaining: 2.52s
156:     learn: 0.4062920      total: 8.99s     remaining: 2.46s
157:     learn: 0.4061512      total: 9.05s     remaining: 2.41s
158:     learn: 0.4057758      total: 9.11s     remaining: 2.35s
159:     learn: 0.4056941      total: 9.18s     remaining: 2.29s
160:     learn: 0.4054718      total: 9.23s     remaining: 2.24s
161:     learn: 0.4051776      total: 9.29s     remaining: 2.18s
162:     learn: 0.4049841      total: 9.35s     remaining: 2.12s
163:     learn: 0.4049311      total: 9.41s     remaining: 2.07s
164:     learn: 0.4046839      total: 9.54s     remaining: 2.02s
165:     learn: 0.4044266      total: 9.61s     remaining: 1.97s
166:     learn: 0.4042623      total: 9.7s      remaining: 1.92s
167:     learn: 0.4039074      total: 9.77s     remaining: 1.86s
168:     learn: 0.4037072      total: 9.82s     remaining: 1.8s
169:     learn: 0.4035728      total: 9.88s     remaining: 1.74s
170:     learn: 0.4035500      total: 9.94s     remaining: 1.69s
171:     learn: 0.4033484      total: 10s       remaining: 1.63s
172:     learn: 0.4032583      total: 10.1s     remaining: 1.57s
173:     learn: 0.4032170      total: 10.1s     remaining: 1.51s
174:     learn: 0.4029256      total: 10.2s     remaining: 1.46s
175:     learn: 0.4026880      total: 10.3s     remaining: 1.4s
176:     learn: 0.4026087      total: 10.3s     remaining: 1.34s
177:     learn: 0.4025318      total: 10.4s     remaining: 1.29s
178:     learn: 0.4022865      total: 10.5s     remaining: 1.23s
179:     learn: 0.4022616      total: 10.6s     remaining: 1.17s
180:     learn: 0.4021891      total: 10.6s     remaining: 1.11s
181:     learn: 0.4021262      total: 10.7s     remaining: 1.06s
182:     learn: 0.4019800      total: 10.7s     remaining: 998ms
183:     learn: 0.4019104      total: 10.8s     remaining: 940ms
184:     learn: 0.4017849      total: 10.9s     remaining: 882ms
185:     learn: 0.4015730      total: 10.9s     remaining: 823ms
186:     learn: 0.4015412      total: 11s       remaining: 765ms
187:     learn: 0.4014709      total: 11.1s     remaining: 706ms
188:     learn: 0.4013340      total: 11.1s     remaining: 647ms
189:     learn: 0.4011707      total: 11.2s     remaining: 588ms
190:     learn: 0.4009515      total: 11.2s     remaining: 529ms
191:     learn: 0.4008080      total: 11.3s     remaining: 471ms
192:     learn: 0.4005933      total: 11.3s     remaining: 412ms
193:     learn: 0.4004808      total: 11.4s     remaining: 353ms
194:     learn: 0.4003472      total: 11.5s     remaining: 294ms
195:     learn: 0.4002563      total: 11.5s     remaining: 236ms
196:     learn: 0.4001790      total: 11.6s     remaining: 177ms
197:     learn: 0.3999695      total: 11.7s     remaining: 118ms
198:     learn: 0.3998676      total: 11.7s     remaining: 58.9ms
199:     learn: 0.3998086      total: 11.8s     remaining: 0us
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0:      learn: 0.6320559       total: 49.3ms    remaining: 9.8s
1:      learn: 0.5994118       total: 104ms     remaining: 10.3s
2:      learn: 0.5664685       total: 152ms     remaining: 9.96s
3:      learn: 0.5461437       total: 212ms     remaining: 10.4s
4:      learn: 0.5299645       total: 268ms     remaining: 10.5s
5:      learn: 0.5164107       total: 325ms     remaining: 10.5s
6:      learn: 0.5048725       total: 386ms     remaining: 10.6s
7:      learn: 0.4953577       total: 470ms     remaining: 11.3s
8:      learn: 0.4864437       total: 557ms     remaining: 11.8s
9:      learn: 0.4818049       total: 608ms     remaining: 11.5s
10:     learn: 0.4742273       total: 663ms     remaining: 11.4s
11:     learn: 0.4697346       total: 720ms     remaining: 11.3s
12:     learn: 0.4668230       total: 768ms     remaining: 11s
13:     learn: 0.4617368       total: 825ms     remaining: 11s
14:     learn: 0.4593441       total: 874ms     remaining: 10.8s
15:     learn: 0.4573973       total: 936ms     remaining: 10.8s
16:     learn: 0.4551633       total: 990ms     remaining: 10.7s
17:     learn: 0.4538277       total: 1.04s     remaining: 10.5s
18:     learn: 0.4524058       total: 1.09s     remaining: 10.4s
19:     learn: 0.4509333       total: 1.14s     remaining: 10.3s
20:     learn: 0.4496489       total: 1.19s     remaining: 10.2s
21:     learn: 0.4480004       total: 1.25s     remaining: 10.1s
22:     learn: 0.4468251       total: 1.3s      remaining: 10s
23:     learn: 0.4455296       total: 1.36s     remaining: 9.95s
24:     learn: 0.4444027       total: 1.4s      remaining: 9.79s
25:     learn: 0.4437947       total: 1.46s     remaining: 9.75s
26:     learn: 0.4429912       total: 1.5s      remaining: 9.63s
27:     learn: 0.4417013       total: 1.56s     remaining: 9.58s
28:     learn: 0.4412113       total: 1.61s     remaining: 9.5s
29:     learn: 0.4404333       total: 1.66s     remaining: 9.42s
30:     learn: 0.4401432       total: 1.71s     remaining: 9.34s
31:     learn: 0.4398827       total: 1.76s     remaining: 9.27s
32:     learn: 0.4393830       total: 1.85s     remaining: 9.37s
33:     learn: 0.4389441       total: 1.9s      remaining: 9.28s
34:     learn: 0.4386408       total: 1.96s     remaining: 9.23s
35:     learn: 0.4379896       total: 2.01s     remaining: 9.16s
36:     learn: 0.4376188       total: 2.05s     remaining: 9.05s
37:     learn: 0.4373568       total: 2.1s      remaining: 8.98s
38:     learn: 0.4370546       total: 2.15s     remaining: 8.89s
39:     learn: 0.4361291       total: 2.21s     remaining: 8.83s
40:     learn: 0.4358516       total: 2.25s     remaining: 8.74s
41:     learn: 0.4350765       total: 2.31s     remaining: 8.7s
42:     learn: 0.4345787       total: 2.36s     remaining: 8.62s
43:     learn: 0.4341512       total: 2.4s      remaining: 8.52s
44:     learn: 0.4338887       total: 2.47s     remaining: 8.51s
45:     learn: 0.4335539       total: 2.53s     remaining: 8.48s
46:     learn: 0.4332721       total: 2.59s     remaining: 8.42s
47:     learn: 0.4329691       total: 2.64s     remaining: 8.36s
```

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48:     learn: 0.4327109     total: 2.69s     remaining: 8.28s
49:     learn: 0.4325594     total: 2.75s     remaining: 8.25s
50:     learn: 0.4321971     total: 2.8s      remaining: 8.18s
51:     learn: 0.4319009     total: 2.85s     remaining: 8.11s
52:     learn: 0.4315340     total: 2.9s      remaining: 8.06s
53:     learn: 0.4307932     total: 2.97s     remaining: 8.03s
54:     learn: 0.4306316     total: 3.03s     remaining: 7.98s
55:     learn: 0.4302190     total: 3.11s     remaining: 8s
56:     learn: 0.4299325     total: 3.17s     remaining: 7.95s
57:     learn: 0.4297202     total: 3.23s     remaining: 7.91s
58:     learn: 0.4295696     total: 3.28s     remaining: 7.84s
59:     learn: 0.4293865     total: 3.34s     remaining: 7.79s
60:     learn: 0.4290641     total: 3.41s     remaining: 7.77s
61:     learn: 0.4289300     total: 3.46s     remaining: 7.71s
62:     learn: 0.4287044     total: 3.51s     remaining: 7.63s
63:     learn: 0.4285707     total: 3.56s     remaining: 7.56s
64:     learn: 0.4280231     total: 3.65s     remaining: 7.57s
65:     learn: 0.4274293     total: 3.71s     remaining: 7.54s
66:     learn: 0.4272896     total: 3.78s     remaining: 7.5s
67:     learn: 0.4271203     total: 3.82s     remaining: 7.42s
68:     learn: 0.4270439     total: 3.88s     remaining: 7.37s
69:     learn: 0.4265446     total: 3.96s     remaining: 7.36s
70:     learn: 0.4262876     total: 4.03s     remaining: 7.32s
71:     learn: 0.4259446     total: 4.08s     remaining: 7.26s
72:     learn: 0.4257896     total: 4.16s     remaining: 7.23s
73:     learn: 0.4256154     total: 4.21s     remaining: 7.17s
74:     learn: 0.4251063     total: 4.28s     remaining: 7.13s
75:     learn: 0.4249424     total: 4.35s     remaining: 7.09s
76:     learn: 0.4247974     total: 4.4s      remaining: 7.02s
77:     learn: 0.4247397     total: 4.44s     remaining: 6.95s
78:     learn: 0.4245689     total: 4.49s     remaining: 6.88s
79:     learn: 0.4240769     total: 4.54s     remaining: 6.81s
80:     learn: 0.4240769     total: 4.56s     remaining: 6.7s
81:     learn: 0.4238727     total: 4.63s     remaining: 6.66s
82:     learn: 0.4237243     total: 4.69s     remaining: 6.61s
83:     learn: 0.4229875     total: 4.75s     remaining: 6.55s
84:     learn: 0.4228972     total: 4.79s     remaining: 6.49s
85:     learn: 0.4227615     total: 4.86s     remaining: 6.44s
86:     learn: 0.4226620     total: 4.91s     remaining: 6.38s
87:     learn: 0.4223725     total: 4.96s     remaining: 6.31s
88:     learn: 0.4221053     total: 5.01s     remaining: 6.24s
89:     learn: 0.4217070     total: 5.08s     remaining: 6.21s
90:     learn: 0.4212802     total: 5.14s     remaining: 6.15s
91:     learn: 0.4211857     total: 5.19s     remaining: 6.09s
92:     learn: 0.4209654     total: 5.24s     remaining: 6.03s
93:     learn: 0.4209431     total: 5.31s     remaining: 5.98s
94:     learn: 0.4206185     total: 5.36s     remaining: 5.92s
95:     learn: 0.4205199     total: 5.41s     remaining: 5.86s
```

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96:     learn: 0.4204347      total: 5.46s     remaining: 5.79s
97:     learn: 0.4203605      total: 5.5s      remaining: 5.73s
98:     learn: 0.4203601      total: 5.53s     remaining: 5.65s
99:     learn: 0.4199901      total: 5.59s     remaining: 5.59s
100:    learn: 0.4198663      total: 5.64s     remaining: 5.53s
101:    learn: 0.4196140      total: 5.69s     remaining: 5.47s
102:    learn: 0.4194007      total: 5.76s     remaining: 5.42s
103:    learn: 0.4192013      total: 5.81s     remaining: 5.37s
104:    learn: 0.4190187      total: 5.88s     remaining: 5.32s
105:    learn: 0.4188265      total: 5.94s     remaining: 5.27s
106:    learn: 0.4186621      total: 6s        remaining: 5.21s
107:    learn: 0.4184160      total: 6.06s     remaining: 5.16s
108:    learn: 0.4178324      total: 6.11s     remaining: 5.1s
109:    learn: 0.4173739      total: 6.17s     remaining: 5.05s
110:    learn: 0.4172628      total: 6.24s     remaining: 5s
111:    learn: 0.4171924      total: 6.29s     remaining: 4.94s
112:    learn: 0.4171189      total: 6.33s     remaining: 4.88s
113:    learn: 0.4168677      total: 6.39s     remaining: 4.82s
114:    learn: 0.4168209      total: 6.44s     remaining: 4.76s
115:    learn: 0.4166041      total: 6.49s     remaining: 4.7s
116:    learn: 0.4162722      total: 6.54s     remaining: 4.64s
117:    learn: 0.4162063      total: 6.6s      remaining: 4.58s
118:    learn: 0.4159454      total: 6.65s     remaining: 4.53s
119:    learn: 0.4155201      total: 6.7s      remaining: 4.47s
120:    learn: 0.4150620      total: 6.76s     remaining: 4.41s
121:    learn: 0.4150193      total: 6.81s     remaining: 4.35s
122:    learn: 0.4147137      total: 6.86s     remaining: 4.3s
123:    learn: 0.4144650      total: 6.92s     remaining: 4.24s
124:    learn: 0.4143221      total: 6.97s     remaining: 4.18s
125:    learn: 0.4142424      total: 7.02s     remaining: 4.12s
126:    learn: 0.4140896      total: 7.07s     remaining: 4.06s
127:    learn: 0.4139557      total: 7.12s     remaining: 4.01s
128:    learn: 0.4136950      total: 7.17s     remaining: 3.95s
129:    learn: 0.4135551      total: 7.22s     remaining: 3.89s
130:    learn: 0.4134486      total: 7.27s     remaining: 3.83s
131:    learn: 0.4131438      total: 7.32s     remaining: 3.77s
132:    learn: 0.4129751      total: 7.37s     remaining: 3.71s
133:    learn: 0.4129209      total: 7.42s     remaining: 3.66s
134:    learn: 0.4128229      total: 7.47s     remaining: 3.6s
135:    learn: 0.4126243      total: 7.53s     remaining: 3.54s
136:    learn: 0.4122313      total: 7.59s     remaining: 3.49s
137:    learn: 0.4121168      total: 7.64s     remaining: 3.43s
138:    learn: 0.4119957      total: 7.7s      remaining: 3.38s
139:    learn: 0.4116896      total: 7.76s     remaining: 3.32s
140:    learn: 0.4116071      total: 7.81s     remaining: 3.27s
141:    learn: 0.4114388      total: 7.86s     remaining: 3.21s
142:    learn: 0.4113633      total: 7.91s     remaining: 3.15s
143:    learn: 0.4107088      total: 7.97s     remaining: 3.1s
```

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144:    learn: 0.4105991    total: 8.02s    remaining: 3.04s
145:    learn: 0.4103014    total: 8.07s    remaining: 2.98s
146:    learn: 0.4100629    total: 8.12s    remaining: 2.93s
147:    learn: 0.4099123    total: 8.17s    remaining: 2.87s
148:    learn: 0.4095269    total: 8.23s    remaining: 2.82s
149:    learn: 0.4092618    total: 8.28s    remaining: 2.76s
150:    learn: 0.4090899    total: 8.34s    remaining: 2.71s
151:    learn: 0.4089306    total: 8.41s    remaining: 2.65s
152:    learn: 0.4087304    total: 8.46s    remaining: 2.6s
153:    learn: 0.4086437    total: 8.52s    remaining: 2.54s
154:    learn: 0.4083410    total: 8.61s    remaining: 2.5s
155:    learn: 0.4080956    total: 8.68s    remaining: 2.45s
156:    learn: 0.4080531    total: 8.73s    remaining: 2.39s
157:    learn: 0.4079804    total: 8.78s    remaining: 2.33s
158:    learn: 0.4078854    total: 8.84s    remaining: 2.28s
159:    learn: 0.4078362    total: 8.89s    remaining: 2.22s
160:    learn: 0.4077638    total: 8.94s    remaining: 2.17s
161:    learn: 0.4076374    total: 8.99s    remaining: 2.11s
162:    learn: 0.4076075    total: 9.05s    remaining: 2.05s
163:    learn: 0.4075132    total: 9.1s     remaining: 2s
164:    learn: 0.4074830    total: 9.15s    remaining: 1.94s
165:    learn: 0.4073867    total: 9.21s    remaining: 1.89s
166:    learn: 0.4072138    total: 9.28s    remaining: 1.83s
167:    learn: 0.4071601    total: 9.32s    remaining: 1.77s
168:    learn: 0.4068604    total: 9.39s    remaining: 1.72s
169:    learn: 0.4065510    total: 9.44s    remaining: 1.67s
170:    learn: 0.4064756    total: 9.5s     remaining: 1.61s
171:    learn: 0.4063891    total: 9.55s    remaining: 1.55s
172:    learn: 0.4060398    total: 9.62s    remaining: 1.5s
173:    learn: 0.4057398    total: 9.67s    remaining: 1.45s
174:    learn: 0.4056639    total: 9.72s    remaining: 1.39s
175:    learn: 0.4055445    total: 9.77s    remaining: 1.33s
176:    learn: 0.4052359    total: 9.82s    remaining: 1.28s
177:    learn: 0.4049415    total: 9.88s    remaining: 1.22s
178:    learn: 0.4047457    total: 9.93s    remaining: 1.17s
179:    learn: 0.4044784    total: 10s      remaining: 1.11s
180:    learn: 0.4044707    total: 10.1s    remaining: 1.06s
181:    learn: 0.4043417    total: 10.1s    remaining: 1s
182:    learn: 0.4041130    total: 10.2s    remaining: 946ms
183:    learn: 0.4039485    total: 10.2s    remaining: 890ms
184:    learn: 0.4039294    total: 10.3s    remaining: 834ms
185:    learn: 0.4038247    total: 10.3s    remaining: 779ms
186:    learn: 0.4035730    total: 10.4s    remaining: 723ms
187:    learn: 0.4033690    total: 10.5s    remaining: 668ms
188:    learn: 0.4029979    total: 10.5s    remaining: 614ms
189:    learn: 0.4027531    total: 10.6s    remaining: 558ms
190:    learn: 0.4026255    total: 10.7s    remaining: 503ms
191:    learn: 0.4024931    total: 10.7s    remaining: 447ms
```

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192:    learn: 0.4023079    total: 10.8s    remaining: 391ms
193:    learn: 0.4021444    total: 10.9s    remaining: 336ms
194:    learn: 0.4019840    total: 10.9s    remaining: 280ms
195:    learn: 0.4019043    total: 11s      remaining: 224ms
196:    learn: 0.4014794    total: 11s      remaining: 168ms
197:    learn: 0.4013199    total: 11.1s    remaining: 112ms
198:    learn: 0.4012200    total: 11.1s    remaining: 56ms
199:    learn: 0.4009831    total: 11.2s    remaining: 0us
Mean train f1-score of data (CV) 11 is : 0.815941200664906
Mean test f1-score of data (CV) 11 is : 0.8039640682202221
```

```
Shape of data 12 is :
(27303, 10)
Distribution of 12 is :
Yes    14102
No     13201
Name: TIMELY_RESPONSE, dtype: int64

<IPython.core.display.HTML object>

MetricVisualizer(layout=Layout(align_self='stretch', height='500px'))

Train f1_score [Yes]: for data 12 is : 0.8084969423881557
Train f1_score [No]: for data 12 is : 0.8164005245699298
```

	precision	recall	f1-score	support
No	0.77	0.84	0.80	924
Yes	0.83	0.77	0.80	988
accuracy			0.80	1912
macro avg	0.80	0.80	0.80	1912
weighted avg	0.80	0.80	0.80	1912
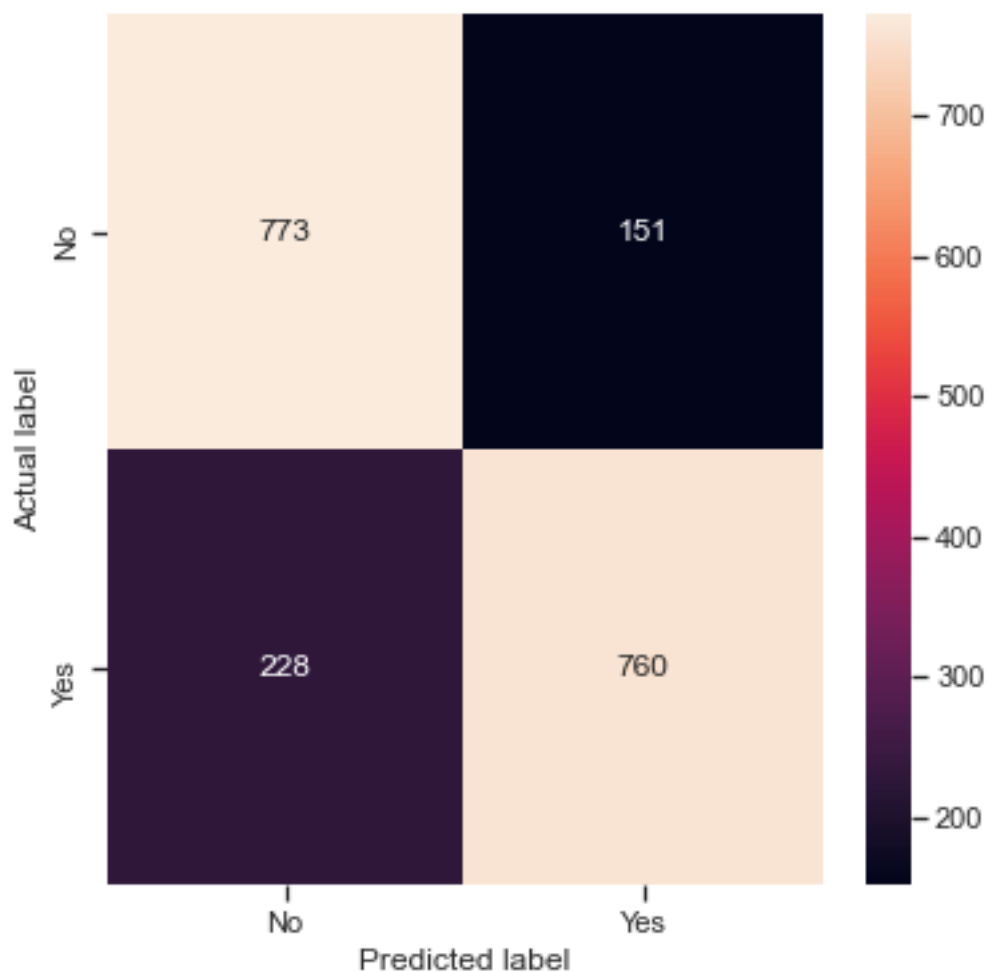
```
Cross validation result for data 12 is :
0:      learn: 0.6333698       total: 51.6ms   remaining: 10.3s
1:      learn: 0.5995737       total: 103ms    remaining: 10.2s
2:      learn: 0.5732020       total: 154ms    remaining: 10.1s
3:      learn: 0.5477065       total: 200ms    remaining: 9.81s
4:      learn: 0.5294559       total: 267ms    remaining: 10.4s
5:      learn: 0.5135143       total: 313ms    remaining: 10.1s
6:      learn: 0.5019609       total: 359ms    remaining: 9.9s
7:      learn: 0.4940552       total: 416ms    remaining: 9.97s
8:      learn: 0.4854137       total: 500ms    remaining: 10.6s
9:      learn: 0.4794227       total: 554ms    remaining: 10.5s
10:     learn: 0.4745058       total: 610ms    remaining: 10.5s
11:     learn: 0.4708396       total: 667ms    remaining: 10.4s
12:     learn: 0.4671141       total: 712ms    remaining: 10.2s
13:     learn: 0.4640898       total: 759ms    remaining: 10.1s
14:     learn: 0.4616887       total: 807ms    remaining: 9.96s
15:     learn: 0.4588985       total: 851ms    remaining: 9.78s
```

```
16:     learn: 0.4567443     total: 893ms    remaining: 9.62s
17:     learn: 0.4543905     total: 950ms    remaining: 9.61s
18:     learn: 0.4525715     total: 1.02s    remaining: 9.68s
19:     learn: 0.4512148     total: 1.07s    remaining: 9.62s
20:     learn: 0.4501775     total: 1.11s    remaining: 9.5s
21:     learn: 0.4494298     total: 1.16s    remaining: 9.39s
22:     learn: 0.4485457     total: 1.21s    remaining: 9.31s
23:     learn: 0.4476669     total: 1.26s    remaining: 9.24s
24:     learn: 0.4467570     total: 1.31s    remaining: 9.19s
25:     learn: 0.4459538     total: 1.37s    remaining: 9.2s
26:     learn: 0.4453209     total: 1.42s    remaining: 9.11s
27:     learn: 0.4440710     total: 1.47s    remaining: 9.04s
28:     learn: 0.4434131     total: 1.53s    remaining: 9.02s
29:     learn: 0.4425347     total: 1.58s    remaining: 8.98s
30:     learn: 0.4423068     total: 1.65s    remaining: 8.99s
31:     learn: 0.4417572     total: 1.7s     remaining: 8.92s
32:     learn: 0.4413962     total: 1.74s    remaining: 8.83s
33:     learn: 0.4404948     total: 1.79s    remaining: 8.75s
34:     learn: 0.4402041     total: 1.89s    remaining: 8.9s
35:     learn: 0.4400744     total: 1.93s    remaining: 8.79s
36:     learn: 0.4396392     total: 1.98s    remaining: 8.73s
37:     learn: 0.4394766     total: 2.01s    remaining: 8.57s
38:     learn: 0.4390871     total: 2.06s    remaining: 8.49s
39:     learn: 0.4384866     total: 2.11s    remaining: 8.43s
40:     learn: 0.4381714     total: 2.17s    remaining: 8.42s
41:     learn: 0.4377058     total: 2.24s    remaining: 8.43s
42:     learn: 0.4373115     total: 2.29s    remaining: 8.37s
43:     learn: 0.4370786     total: 2.35s    remaining: 8.34s
44:     learn: 0.4367751     total: 2.4s     remaining: 8.28s
45:     learn: 0.4362603     total: 2.45s    remaining: 8.2s
46:     learn: 0.4359313     total: 2.5s     remaining: 8.16s
47:     learn: 0.4357142     total: 2.57s    remaining: 8.13s
48:     learn: 0.4356207     total: 2.63s    remaining: 8.11s
49:     learn: 0.4352887     total: 2.69s    remaining: 8.07s
50:     learn: 0.4349239     total: 2.73s    remaining: 7.99s
51:     learn: 0.4348011     total: 2.79s    remaining: 7.95s
52:     learn: 0.4344653     total: 2.85s    remaining: 7.92s
53:     learn: 0.4343558     total: 2.91s    remaining: 7.88s
54:     learn: 0.4342818     total: 2.97s    remaining: 7.83s
55:     learn: 0.4341124     total: 3.03s    remaining: 7.79s
56:     learn: 0.4336834     total: 3.07s    remaining: 7.71s
57:     learn: 0.4333686     total: 3.12s    remaining: 7.64s
58:     learn: 0.4331796     total: 3.17s    remaining: 7.58s
59:     learn: 0.4329802     total: 3.23s    remaining: 7.53s
60:     learn: 0.4327683     total: 3.28s    remaining: 7.47s
61:     learn: 0.4325210     total: 3.32s    remaining: 7.4s
62:     learn: 0.4324971     total: 3.35s    remaining: 7.28s
63:     learn: 0.4323614     total: 3.39s    remaining: 7.21s
```

```
 64:    learn: 0.4322480      total: 3.45s    remaining: 7.17s
 65:    learn: 0.4314564      total: 3.52s    remaining: 7.16s
 66:    learn: 0.4313084      total: 3.58s    remaining: 7.11s
 67:    learn: 0.4310317      total: 3.65s    remaining: 7.08s
 68:    learn: 0.4308612      total: 3.72s    remaining: 7.06s
 69:    learn: 0.4304367      total: 3.78s    remaining: 7.01s
 70:    learn: 0.4302580      total: 3.84s    remaining: 6.97s
 71:    learn: 0.4298013      total: 3.9s     remaining: 6.92s
 72:    learn: 0.4297111      total: 3.94s    remaining: 6.86s
 73:    learn: 0.4294485      total: 4s       remaining: 6.81s
 74:    learn: 0.4293259      total: 4.05s    remaining: 6.76s
 75:    learn: 0.4292425      total: 4.1s     remaining: 6.69s
 76:    learn: 0.4290982      total: 4.17s    remaining: 6.66s
 77:    learn: 0.4289982      total: 4.23s    remaining: 6.62s
 78:    learn: 0.4287710      total: 4.28s    remaining: 6.55s
 79:    learn: 0.4284587      total: 4.33s    remaining: 6.49s
 80:    learn: 0.4283201      total: 4.39s    remaining: 6.45s
 81:    learn: 0.4280588      total: 4.43s    remaining: 6.38s
 82:    learn: 0.4279659      total: 4.48s    remaining: 6.32s
 83:    learn: 0.4279445      total: 4.52s    remaining: 6.25s
 84:    learn: 0.4275476      total: 4.58s    remaining: 6.2s
 85:    learn: 0.4273853      total: 4.64s    remaining: 6.16s
 86:    learn: 0.4269230      total: 4.7s     remaining: 6.11s
 87:    learn: 0.4262418      total: 4.75s    remaining: 6.05s
 88:    learn: 0.4259200      total: 4.81s    remaining: 6s
 89:    learn: 0.4258201      total: 4.86s    remaining: 5.94s
 90:    learn: 0.4254328      total: 4.91s    remaining: 5.88s
 91:    learn: 0.4253164      total: 4.95s    remaining: 5.81s
 92:    learn: 0.4250024      total: 5.02s    remaining: 5.77s
 93:    learn: 0.4249150      total: 5.07s    remaining: 5.71s
 94:    learn: 0.4248037      total: 5.12s    remaining: 5.66s
 95:    learn: 0.4246755      total: 5.17s    remaining: 5.6s
 96:    learn: 0.4243978      total: 5.23s    remaining: 5.55s
 97:    learn: 0.4241207      total: 5.28s    remaining: 5.49s
 98:    learn: 0.4240384      total: 5.33s    remaining: 5.43s
 99:    learn: 0.4232192      total: 5.4s     remaining: 5.4s
100:    learn: 0.4224505      total: 5.45s    remaining: 5.34s
101:    learn: 0.4223540      total: 5.5s     remaining: 5.28s
102:    learn: 0.4223102      total: 5.55s    remaining: 5.23s
103:    learn: 0.4223061      total: 5.59s    remaining: 5.16s
104:    learn: 0.4221128      total: 5.66s    remaining: 5.12s
105:    learn: 0.4219993      total: 5.7s     remaining: 5.06s
106:    learn: 0.4219992      total: 5.73s    remaining: 4.98s
107:    learn: 0.4218899      total: 5.79s    remaining: 4.93s
108:    learn: 0.4217352      total: 5.84s    remaining: 4.88s
109:    learn: 0.4213927      total: 5.9s     remaining: 4.83s
110:    learn: 0.4212645      total: 5.98s    remaining: 4.79s
111:    learn: 0.4211383      total: 6.02s    remaining: 4.73s
```

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112:    learn: 0.4209643    total: 6.08s    remaining: 4.68s
113:    learn: 0.4208274    total: 6.13s    remaining: 4.62s
114:    learn: 0.4205541    total: 6.23s    remaining: 4.6s
115:    learn: 0.4205046    total: 6.28s    remaining: 4.55s
116:    learn: 0.4200982    total: 6.34s    remaining: 4.5s
117:    learn: 0.4197488    total: 6.39s    remaining: 4.44s
118:    learn: 0.4193268    total: 6.44s    remaining: 4.38s
119:    learn: 0.4192652    total: 6.49s    remaining: 4.33s
120:    learn: 0.4191827    total: 6.54s    remaining: 4.27s
121:    learn: 0.4184459    total: 6.61s    remaining: 4.23s
122:    learn: 0.4181258    total: 6.66s    remaining: 4.17s
123:    learn: 0.4180971    total: 6.7s     remaining: 4.11s
124:    learn: 0.4177621    total: 6.77s    remaining: 4.06s
125:    learn: 0.4176688    total: 6.81s    remaining: 4s
126:    learn: 0.4173664    total: 6.87s    remaining: 3.95s
127:    learn: 0.4171009    total: 6.93s    remaining: 3.9s
128:    learn: 0.4166126    total: 7s       remaining: 3.85s
129:    learn: 0.4161618    total: 7.05s    remaining: 3.8s
130:    learn: 0.4153353    total: 7.11s    remaining: 3.74s
131:    learn: 0.4152706    total: 7.17s    remaining: 3.69s
132:    learn: 0.4150970    total: 7.22s    remaining: 3.64s
133:    learn: 0.4149867    total: 7.27s    remaining: 3.58s
134:    learn: 0.4146355    total: 7.32s    remaining: 3.53s
135:    learn: 0.4142014    total: 7.37s    remaining: 3.47s
136:    learn: 0.4140019    total: 7.43s    remaining: 3.42s
137:    learn: 0.4138396    total: 7.48s    remaining: 3.36s
138:    learn: 0.4138373    total: 7.53s    remaining: 3.31s
139:    learn: 0.4135708    total: 7.58s    remaining: 3.25s
140:    learn: 0.4131318    total: 7.64s    remaining: 3.2s
141:    learn: 0.4131291    total: 7.7s     remaining: 3.14s
142:    learn: 0.4130568    total: 7.75s    remaining: 3.09s
143:    learn: 0.4128113    total: 7.82s    remaining: 3.04s
144:    learn: 0.4128080    total: 7.87s    remaining: 2.98s
145:    learn: 0.4124664    total: 7.93s    remaining: 2.93s
146:    learn: 0.4120160    total: 7.99s    remaining: 2.88s
147:    learn: 0.4119028    total: 8.04s    remaining: 2.82s
148:    learn: 0.4117900    total: 8.1s     remaining: 2.77s
149:    learn: 0.4114918    total: 8.15s    remaining: 2.72s
150:    learn: 0.4113755    total: 8.23s    remaining: 2.67s
151:    learn: 0.4110360    total: 8.28s    remaining: 2.61s
152:    learn: 0.4106001    total: 8.33s    remaining: 2.56s
153:    learn: 0.4104800    total: 8.38s    remaining: 2.5s
154:    learn: 0.4104493    total: 8.43s    remaining: 2.45s
155:    learn: 0.4103542    total: 8.5s     remaining: 2.4s
156:    learn: 0.4103096    total: 8.55s    remaining: 2.34s
157:    learn: 0.4102000    total: 8.62s    remaining: 2.29s
158:    learn: 0.4099541    total: 8.67s    remaining: 2.24s
159:    learn: 0.4098712    total: 8.71s    remaining: 2.18s
```

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160:     learn: 0.4097263        total: 8.77s     remaining: 2.13s
161:     learn: 0.4096117        total: 8.84s     remaining: 2.07s
162:     learn: 0.4095312        total: 8.9s      remaining: 2.02s
163:     learn: 0.4094614        total: 8.96s     remaining: 1.97s
164:     learn: 0.4089998        total: 9.01s     remaining: 1.91s
165:     learn: 0.4088341        total: 9.09s     remaining: 1.86s
166:     learn: 0.4087844        total: 9.16s     remaining: 1.81s
167:     learn: 0.4085455        total: 9.21s     remaining: 1.75s
168:     learn: 0.4079665        total: 9.28s     remaining: 1.7s
169:     learn: 0.4077923        total: 9.33s     remaining: 1.65s
170:     learn: 0.4076998        total: 9.41s     remaining: 1.59s
171:     learn: 0.4075937        total: 9.46s     remaining: 1.54s
172:     learn: 0.4072953        total: 9.53s     remaining: 1.49s
173:     learn: 0.4070254        total: 9.59s     remaining: 1.43s
174:     learn: 0.4067227        total: 9.65s     remaining: 1.38s
175:     learn: 0.4066133        total: 9.71s     remaining: 1.32s
176:     learn: 0.4064974        total: 9.78s     remaining: 1.27s
177:     learn: 0.4063641        total: 9.84s     remaining: 1.22s
178:     learn: 0.4061562        total: 9.89s     remaining: 1.16s
179:     learn: 0.4059343        total: 9.95s     remaining: 1.1s
180:     learn: 0.4058210        total: 10s       remaining: 1.05s
181:     learn: 0.4057257        total: 10.1s     remaining: 994ms
182:     learn: 0.4054689        total: 10.1s     remaining: 939ms
183:     learn: 0.4050742        total: 10.2s     remaining: 886ms
184:     learn: 0.4049905        total: 10.2s     remaining: 831ms
185:     learn: 0.4049137        total: 10.3s     remaining: 775ms
186:     learn: 0.4048360        total: 10.3s     remaining: 720ms
187:     learn: 0.4044473        total: 10.4s     remaining: 664ms
188:     learn: 0.4040199        total: 10.5s     remaining: 609ms
189:     learn: 0.4037138        total: 10.5s     remaining: 554ms
190:     learn: 0.4035198        total: 10.6s     remaining: 498ms
191:     learn: 0.4033606        total: 10.6s     remaining: 444ms
192:     learn: 0.4030095        total: 10.7s     remaining: 389ms
193:     learn: 0.4028049        total: 10.8s     remaining: 333ms
194:     learn: 0.4025369        total: 10.8s     remaining: 278ms
195:     learn: 0.4025335        total: 10.9s     remaining: 222ms
196:     learn: 0.4024562        total: 10.9s     remaining: 167ms
197:     learn: 0.4024331        total: 11s       remaining: 111ms
198:     learn: 0.4024236        total: 11s       remaining: 55.5ms
199:     learn: 0.4024156        total: 11.1s     remaining: 0us
0:       learn: 0.6328070        total: 73.6ms    remaining: 14.6s
1:       learn: 0.5998246        total: 141ms     remaining: 14s
2:       learn: 0.5735590        total: 197ms     remaining: 12.9s
3:       learn: 0.5516939        total: 251ms     remaining: 12.3s
4:       learn: 0.5333467        total: 309ms     remaining: 12.1s
5:       learn: 0.5136869        total: 365ms     remaining: 11.8s
6:       learn: 0.5030382        total: 419ms     remaining: 11.6s
7:       learn: 0.4954474        total: 502ms     remaining: 12.1s
```

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8:      learn: 0.4862519      total: 560ms      remaining: 11.9s
9:      learn: 0.4797664      total: 616ms      remaining: 11.7s
10:     learn: 0.4734350      total: 671ms      remaining: 11.5s
11:     learn: 0.4688381      total: 738ms      remaining: 11.6s
12:     learn: 0.4657039      total: 807ms      remaining: 11.6s
13:     learn: 0.4617535      total: 877ms      remaining: 11.7s
14:     learn: 0.4584036      total: 931ms      remaining: 11.5s
15:     learn: 0.4560641      total: 999ms      remaining: 11.5s
16:     learn: 0.4537222      total: 1.07s      remaining: 11.5s
17:     learn: 0.4520186      total: 1.12s      remaining: 11.3s
18:     learn: 0.4503342      total: 1.2s       remaining: 11.4s
19:     learn: 0.4496812      total: 1.26s      remaining: 11.4s
20:     learn: 0.4487314      total: 1.32s      remaining: 11.2s
21:     learn: 0.4472561      total: 1.36s      remaining: 11.1s
22:     learn: 0.4460227      total: 1.42s      remaining: 10.9s
23:     learn: 0.4454968      total: 1.48s      remaining: 10.8s
24:     learn: 0.4445420      total: 1.52s      remaining: 10.7s
25:     learn: 0.4440225      total: 1.57s      remaining: 10.5s
26:     learn: 0.4432687      total: 1.64s      remaining: 10.5s
27:     learn: 0.4424339      total: 1.7s       remaining: 10.4s
28:     learn: 0.4415719      total: 1.74s      remaining: 10.3s
29:     learn: 0.4404943      total: 1.81s      remaining: 10.2s
30:     learn: 0.4399555      total: 1.87s      remaining: 10.2s
31:     learn: 0.4390211      total: 1.94s      remaining: 10.2s
32:     learn: 0.4386668      total: 1.99s      remaining: 10.1s
33:     learn: 0.4381335      total: 2.05s      remaining: 10s
34:     learn: 0.4375787      total: 2.13s      remaining: 10s
35:     learn: 0.4373927      total: 2.18s      remaining: 9.95s
36:     learn: 0.4369950      total: 2.25s      remaining: 9.91s
37:     learn: 0.4363291      total: 2.31s      remaining: 9.86s
38:     learn: 0.4361246      total: 2.37s      remaining: 9.79s
39:     learn: 0.4359039      total: 2.43s      remaining: 9.73s
40:     learn: 0.4355240      total: 2.48s      remaining: 9.63s
41:     learn: 0.4350268      total: 2.54s      remaining: 9.56s
42:     learn: 0.4345953      total: 2.59s      remaining: 9.47s
43:     learn: 0.4342650      total: 2.65s      remaining: 9.4s
44:     learn: 0.4340506      total: 2.71s      remaining: 9.33s
45:     learn: 0.4335139      total: 2.76s      remaining: 9.25s
46:     learn: 0.4333187      total: 2.81s      remaining: 9.14s
47:     learn: 0.4331847      total: 2.85s      remaining: 9.04s
48:     learn: 0.4328011      total: 2.9s       remaining: 8.93s
49:     learn: 0.4324133      total: 2.95s      remaining: 8.85s
50:     learn: 0.4321263      total: 3.02s      remaining: 8.81s
51:     learn: 0.4320302      total: 3.07s      remaining: 8.73s
52:     learn: 0.4317441      total: 3.13s      remaining: 8.68s
53:     learn: 0.4315775      total: 3.19s      remaining: 8.63s
54:     learn: 0.4313795      total: 3.26s      remaining: 8.58s
55:     learn: 0.4310922      total: 3.32s      remaining: 8.53s
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56:     learn: 0.4309222     total: 3.44s     remaining: 8.64s
57:     learn: 0.4306912     total: 3.56s     remaining: 8.71s
58:     learn: 0.4299615     total: 3.62s     remaining: 8.66s
59:     learn: 0.4297792     total: 3.67s     remaining: 8.57s
60:     learn: 0.4295822     total: 3.73s     remaining: 8.49s
61:     learn: 0.4293981     total: 3.8s      remaining: 8.46s
62:     learn: 0.4290724     total: 3.86s     remaining: 8.39s
63:     learn: 0.4286981     total: 3.92s     remaining: 8.32s
64:     learn: 0.4284772     total: 3.97s     remaining: 8.24s
65:     learn: 0.4282112     total: 4.02s     remaining: 8.16s
66:     learn: 0.4278318     total: 4.08s     remaining: 8.09s
67:     learn: 0.4276274     total: 4.13s     remaining: 8.02s
68:     learn: 0.4270111     total: 4.19s     remaining: 7.95s
69:     learn: 0.4267151     total: 4.25s     remaining: 7.89s
70:     learn: 0.4265264     total: 4.31s     remaining: 7.83s
71:     learn: 0.4263817     total: 4.39s     remaining: 7.81s
72:     learn: 0.4261089     total: 4.5s      remaining: 7.83s
73:     learn: 0.4260223     total: 4.55s     remaining: 7.75s
74:     learn: 0.4253439     total: 4.61s     remaining: 7.68s
75:     learn: 0.4250373     total: 4.69s     remaining: 7.65s
76:     learn: 0.4248295     total: 4.75s     remaining: 7.59s
77:     learn: 0.4241628     total: 4.83s     remaining: 7.56s
78:     learn: 0.4240347     total: 4.88s     remaining: 7.48s
79:     learn: 0.4238378     total: 4.94s     remaining: 7.41s
80:     learn: 0.4236253     total: 5.01s     remaining: 7.36s
81:     learn: 0.4234039     total: 5.06s     remaining: 7.28s
82:     learn: 0.4230584     total: 5.12s     remaining: 7.21s
83:     learn: 0.4228896     total: 5.17s     remaining: 7.14s
84:     learn: 0.4224042     total: 5.26s     remaining: 7.12s
85:     learn: 0.4222587     total: 5.32s     remaining: 7.06s
86:     learn: 0.4220941     total: 5.38s     remaining: 6.99s
87:     learn: 0.4219680     total: 5.45s     remaining: 6.93s
88:     learn: 0.4218054     total: 5.5s      remaining: 6.86s
89:     learn: 0.4216469     total: 5.56s     remaining: 6.79s
90:     learn: 0.4214123     total: 5.63s     remaining: 6.74s
91:     learn: 0.4212788     total: 5.68s     remaining: 6.67s
92:     learn: 0.4210444     total: 5.73s     remaining: 6.59s
93:     learn: 0.4203956     total: 5.78s     remaining: 6.51s
94:     learn: 0.4201971     total: 5.83s     remaining: 6.44s
95:     learn: 0.4201963     total: 5.89s     remaining: 6.38s
96:     learn: 0.4199785     total: 5.95s     remaining: 6.32s
97:     learn: 0.4197435     total: 6.05s     remaining: 6.3s
98:     learn: 0.4197061     total: 6.14s     remaining: 6.27s
99:     learn: 0.4196301     total: 6.19s     remaining: 6.19s
100:    learn: 0.4194603     total: 6.26s     remaining: 6.13s
101:    learn: 0.4193208     total: 6.31s     remaining: 6.06s
102:    learn: 0.4191554     total: 6.38s     remaining: 6.01s
103:    learn: 0.4190545     total: 6.44s     remaining: 5.94s
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104:    learn: 0.4189658    total: 6.49s    remaining: 5.87s
105:    learn: 0.4187673    total: 6.55s    remaining: 5.81s
106:    learn: 0.4185448    total: 6.61s    remaining: 5.75s
107:    learn: 0.4183698    total: 6.68s    remaining: 5.69s
108:    learn: 0.4180042    total: 6.76s    remaining: 5.65s
109:    learn: 0.4174989    total: 6.82s    remaining: 5.58s
110:    learn: 0.4173856    total: 6.86s    remaining: 5.5s
111:    learn: 0.4171699    total: 6.92s    remaining: 5.44s
112:    learn: 0.4170814    total: 6.98s    remaining: 5.38s
113:    learn: 0.4169269    total: 7.04s    remaining: 5.31s
114:    learn: 0.4167558    total: 7.09s    remaining: 5.24s
115:    learn: 0.4164323    total: 7.14s    remaining: 5.17s
116:    learn: 0.4162243    total: 7.21s    remaining: 5.11s
117:    learn: 0.4161704    total: 7.25s    remaining: 5.04s
118:    learn: 0.4160766    total: 7.3s     remaining: 4.97s
119:    learn: 0.4160290    total: 7.35s    remaining: 4.9s
120:    learn: 0.4157783    total: 7.41s    remaining: 4.84s
121:    learn: 0.4154935    total: 7.45s    remaining: 4.76s
122:    learn: 0.4150481    total: 7.52s    remaining: 4.71s
123:    learn: 0.4149198    total: 7.57s    remaining: 4.64s
124:    learn: 0.4146752    total: 7.62s    remaining: 4.57s
125:    learn: 0.4145067    total: 7.67s    remaining: 4.5s
126:    learn: 0.4143891    total: 7.72s    remaining: 4.44s
127:    learn: 0.4143366    total: 7.77s    remaining: 4.37s
128:    learn: 0.4141683    total: 7.82s    remaining: 4.3s
129:    learn: 0.4141462    total: 7.87s    remaining: 4.24s
130:    learn: 0.4139885    total: 7.94s    remaining: 4.18s
131:    learn: 0.4139439    total: 7.98s    remaining: 4.11s
132:    learn: 0.4135430    total: 8.03s    remaining: 4.05s
133:    learn: 0.4133749    total: 8.08s    remaining: 3.98s
134:    learn: 0.4132430    total: 8.14s    remaining: 3.92s
135:    learn: 0.4130634    total: 8.19s    remaining: 3.85s
136:    learn: 0.4127566    total: 8.24s    remaining: 3.79s
137:    learn: 0.4127306    total: 8.29s    remaining: 3.73s
138:    learn: 0.4125827    total: 8.34s    remaining: 3.66s
139:    learn: 0.4124455    total: 8.39s    remaining: 3.6s
140:    learn: 0.4121531    total: 8.44s    remaining: 3.53s
141:    learn: 0.4120982    total: 8.48s    remaining: 3.47s
142:    learn: 0.4118282    total: 8.54s    remaining: 3.4s
143:    learn: 0.4117020    total: 8.59s    remaining: 3.34s
144:    learn: 0.4116268    total: 8.63s    remaining: 3.27s
145:    learn: 0.4115371    total: 8.68s    remaining: 3.21s
146:    learn: 0.4114694    total: 8.75s    remaining: 3.15s
147:    learn: 0.4111258    total: 8.82s    remaining: 3.1s
148:    learn: 0.4110215    total: 8.88s    remaining: 3.04s
149:    learn: 0.4108635    total: 8.94s    remaining: 2.98s
150:    learn: 0.4107174    total: 9s       remaining: 2.92s
151:    learn: 0.4105025    total: 9.05s    remaining: 2.86s
```

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152:    learn: 0.4103201    total: 9.1s     remaining: 2.8s
153:    learn: 0.4102531    total: 9.16s    remaining: 2.74s
154:    learn: 0.4097368    total: 9.21s    remaining: 2.67s
155:    learn: 0.4095879    total: 9.26s    remaining: 2.61s
156:    learn: 0.4093137    total: 9.31s    remaining: 2.55s
157:    learn: 0.4090671    total: 9.37s    remaining: 2.49s
158:    learn: 0.4089580    total: 9.42s    remaining: 2.43s
159:    learn: 0.4088734    total: 9.48s    remaining: 2.37s
160:    learn: 0.4087265    total: 9.53s    remaining: 2.31s
161:    learn: 0.4085595    total: 9.58s    remaining: 2.25s
162:    learn: 0.4083488    total: 9.63s    remaining: 2.19s
163:    learn: 0.4079868    total: 9.68s    remaining: 2.13s
164:    learn: 0.4079194    total: 9.74s    remaining: 2.06s
165:    learn: 0.4075416    total: 9.79s    remaining: 2s
166:    learn: 0.4073208    total: 9.84s    remaining: 1.94s
167:    learn: 0.4071274    total: 9.89s    remaining: 1.88s
168:    learn: 0.4069915    total: 9.94s    remaining: 1.82s
169:    learn: 0.4068774    total: 9.99s    remaining: 1.76s
170:    learn: 0.4067524    total: 10s      remaining: 1.7s
171:    learn: 0.4066663    total: 10.1s    remaining: 1.64s
172:    learn: 0.4065427    total: 10.1s    remaining: 1.58s
173:    learn: 0.4062000    total: 10.2s    remaining: 1.52s
174:    learn: 0.4061868    total: 10.2s    remaining: 1.46s
175:    learn: 0.4060757    total: 10.3s    remaining: 1.4s
176:    learn: 0.4060433    total: 10.3s    remaining: 1.34s
177:    learn: 0.4057584    total: 10.4s    remaining: 1.28s
178:    learn: 0.4056404    total: 10.4s    remaining: 1.23s
179:    learn: 0.4053231    total: 10.5s    remaining: 1.17s
180:    learn: 0.4048986    total: 10.6s    remaining: 1.11s
181:    learn: 0.4047711    total: 10.6s    remaining: 1.05s
182:    learn: 0.4045180    total: 10.7s    remaining: 990ms
183:    learn: 0.4044391    total: 10.7s    remaining: 930ms
184:    learn: 0.4043371    total: 10.7s    remaining: 871ms
185:    learn: 0.4039941    total: 10.8s    remaining: 813ms
186:    learn: 0.4039046    total: 10.8s    remaining: 754ms
187:    learn: 0.4037809    total: 10.9s    remaining: 695ms
188:    learn: 0.4036517    total: 10.9s    remaining: 637ms
189:    learn: 0.4035583    total: 11s      remaining: 579ms
190:    learn: 0.4034095    total: 11.1s    remaining: 521ms
191:    learn: 0.4033242    total: 11.1s    remaining: 463ms
192:    learn: 0.4031739    total: 11.2s    remaining: 405ms
193:    learn: 0.4028875    total: 11.2s    remaining: 347ms
194:    learn: 0.4024919    total: 11.3s    remaining: 289ms
195:    learn: 0.4023070    total: 11.3s    remaining: 231ms
196:    learn: 0.4022499    total: 11.4s    remaining: 173ms
197:    learn: 0.4021478    total: 11.4s    remaining: 115ms
198:    learn: 0.4019618    total: 11.5s    remaining: 57.5ms
199:    learn: 0.4017580    total: 11.5s    remaining: 0us
```

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0:      learn: 0.6322155      total: 48.4ms    remaining: 9.63s
1:      learn: 0.5984038      total: 99.7ms    remaining: 9.87s
2:      learn: 0.5646398      total: 147ms     remaining: 9.67s
3:      learn: 0.5457505      total: 192ms     remaining: 9.4s
4:      learn: 0.5254461      total: 241ms     remaining: 9.39s
5:      learn: 0.5142232      total: 286ms     remaining: 9.24s
6:      learn: 0.5020154      total: 336ms     remaining: 9.26s
7:      learn: 0.4903307      total: 378ms     remaining: 9.08s
8:      learn: 0.4823524      total: 428ms     remaining: 9.09s
9:      learn: 0.4759338      total: 475ms     remaining: 9.02s
10:     learn: 0.4702077      total: 536ms     remaining: 9.2s
11:     learn: 0.4657399      total: 583ms     remaining: 9.14s
12:     learn: 0.4626241      total: 632ms     remaining: 9.08s
13:     learn: 0.4598288      total: 677ms     remaining: 8.99s
14:     learn: 0.4569530      total: 725ms     remaining: 8.94s
15:     learn: 0.4551384      total: 775ms     remaining: 8.92s
16:     learn: 0.4527540      total: 821ms     remaining: 8.84s
17:     learn: 0.4509140      total: 872ms     remaining: 8.82s
18:     learn: 0.4495965      total: 921ms     remaining: 8.78s
19:     learn: 0.4481421      total: 973ms     remaining: 8.76s
20:     learn: 0.4472152      total: 1.01s     remaining: 8.65s
21:     learn: 0.4458384      total: 1.07s     remaining: 8.65s
22:     learn: 0.4445279      total: 1.12s     remaining: 8.61s
23:     learn: 0.4435103      total: 1.16s     remaining: 8.54s
24:     learn: 0.4426490      total: 1.22s     remaining: 8.51s
25:     learn: 0.4415471      total: 1.27s     remaining: 8.51s
26:     learn: 0.4403943      total: 1.32s     remaining: 8.46s
27:     learn: 0.4399965      total: 1.37s     remaining: 8.4s
28:     learn: 0.4396273      total: 1.42s     remaining: 8.37s
29:     learn: 0.4391655      total: 1.47s     remaining: 8.32s
30:     learn: 0.4388716      total: 1.52s     remaining: 8.27s
31:     learn: 0.4388236      total: 1.54s     remaining: 8.08s
32:     learn: 0.4386256      total: 1.59s     remaining: 8.05s
33:     learn: 0.4382605      total: 1.64s     remaining: 8.01s
34:     learn: 0.4373141      total: 1.69s     remaining: 7.97s
35:     learn: 0.4371885      total: 1.71s     remaining: 7.78s
36:     learn: 0.4369109      total: 1.76s     remaining: 7.74s
37:     learn: 0.4366062      total: 1.8s      remaining: 7.7s
38:     learn: 0.4359567      total: 1.85s     remaining: 7.65s
39:     learn: 0.4357711      total: 1.91s     remaining: 7.63s
40:     learn: 0.4355626      total: 1.96s     remaining: 7.59s
41:     learn: 0.4352316      total: 2.01s     remaining: 7.55s
42:     learn: 0.4351041      total: 2.05s     remaining: 7.5s
43:     learn: 0.4346575      total: 2.1s      remaining: 7.45s
44:     learn: 0.4344289      total: 2.15s     remaining: 7.41s
45:     learn: 0.4340933      total: 2.2s      remaining: 7.37s
46:     learn: 0.4336824      total: 2.26s     remaining: 7.36s
47:     learn: 0.4335591      total: 2.3s      remaining: 7.29s
```

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48:     learn: 0.4333829     total: 2.35s    remaining: 7.26s
49:     learn: 0.4330386     total: 2.4s     remaining: 7.2s
50:     learn: 0.4328371     total: 2.46s    remaining: 7.17s
51:     learn: 0.4326463     total: 2.5s     remaining: 7.11s
52:     learn: 0.4321723     total: 2.55s    remaining: 7.06s
53:     learn: 0.4319503     total: 2.6s     remaining: 7.02s
54:     learn: 0.4317205     total: 2.65s    remaining: 6.98s
55:     learn: 0.4314932     total: 2.7s     remaining: 6.94s
56:     learn: 0.4311440     total: 2.75s    remaining: 6.89s
57:     learn: 0.4306835     total: 2.79s    remaining: 6.84s
58:     learn: 0.4304202     total: 2.84s    remaining: 6.8s
59:     learn: 0.4304071     total: 2.87s    remaining: 6.69s
60:     learn: 0.4301028     total: 2.92s    remaining: 6.65s
61:     learn: 0.4299983     total: 2.97s    remaining: 6.6s
62:     learn: 0.4299062     total: 3.02s    remaining: 6.56s
63:     learn: 0.4290755     total: 3.07s    remaining: 6.52s
64:     learn: 0.4289678     total: 3.12s    remaining: 6.48s
65:     learn: 0.4288794     total: 3.16s    remaining: 6.42s
66:     learn: 0.4281637     total: 3.21s    remaining: 6.38s
67:     learn: 0.4280247     total: 3.26s    remaining: 6.33s
68:     learn: 0.4278205     total: 3.31s    remaining: 6.28s
69:     learn: 0.4276270     total: 3.35s    remaining: 6.23s
70:     learn: 0.4270062     total: 3.4s     remaining: 6.18s
71:     learn: 0.4268275     total: 3.45s    remaining: 6.14s
72:     learn: 0.4267667     total: 3.5s     remaining: 6.09s
73:     learn: 0.4265273     total: 3.55s    remaining: 6.05s
74:     learn: 0.4263499     total: 3.6s     remaining: 5.99s
75:     learn: 0.4262131     total: 3.64s    remaining: 5.94s
76:     learn: 0.4261598     total: 3.69s    remaining: 5.89s
77:     learn: 0.4258427     total: 3.74s    remaining: 5.85s
78:     learn: 0.4256722     total: 3.79s    remaining: 5.8s
79:     learn: 0.4255409     total: 3.84s    remaining: 5.76s
80:     learn: 0.4253594     total: 3.89s    remaining: 5.71s
81:     learn: 0.4252139     total: 3.94s    remaining: 5.67s
82:     learn: 0.4249997     total: 3.99s    remaining: 5.62s
83:     learn: 0.4248310     total: 4.04s    remaining: 5.58s
84:     learn: 0.4247293     total: 4.09s    remaining: 5.53s
85:     learn: 0.4241596     total: 4.14s    remaining: 5.49s
86:     learn: 0.4240226     total: 4.18s    remaining: 5.44s
87:     learn: 0.4237527     total: 4.23s    remaining: 5.39s
88:     learn: 0.4234384     total: 4.29s    remaining: 5.34s
89:     learn: 0.4231205     total: 4.34s    remaining: 5.3s
90:     learn: 0.4229509     total: 4.39s    remaining: 5.26s
91:     learn: 0.4228273     total: 4.44s    remaining: 5.21s
92:     learn: 0.4227376     total: 4.48s    remaining: 5.16s
93:     learn: 0.4224374     total: 4.53s    remaining: 5.11s
94:     learn: 0.4222614     total: 4.58s    remaining: 5.07s
95:     learn: 0.4221165     total: 4.67s    remaining: 5.05s
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96:      learn: 0.4218090      total: 4.71s      remaining: 5s
97:      learn: 0.4216675      total: 4.76s      remaining: 4.96s
98:      learn: 0.4214734      total: 4.81s      remaining: 4.91s
99:      learn: 0.4212227      total: 4.87s      remaining: 4.87s
100:     learn: 0.4212227      total: 4.88s      remaining: 4.79s
101:     learn: 0.4210492      total: 4.93s      remaining: 4.74s
102:     learn: 0.4208630      total: 4.98s      remaining: 4.69s
103:     learn: 0.4205292      total: 5.03s      remaining: 4.64s
104:     learn: 0.4201939      total: 5.08s      remaining: 4.6s
105:     learn: 0.4199758      total: 5.13s      remaining: 4.55s
106:     learn: 0.4198267      total: 5.18s      remaining: 4.51s
107:     learn: 0.4191036      total: 5.23s      remaining: 4.46s
108:     learn: 0.4184331      total: 5.28s      remaining: 4.41s
109:     learn: 0.4181991      total: 5.33s      remaining: 4.36s
110:     learn: 0.4179854      total: 5.39s      remaining: 4.32s
111:     learn: 0.4177339      total: 5.44s      remaining: 4.27s
112:     learn: 0.4171132      total: 5.48s      remaining: 4.22s
113:     learn: 0.4166967      total: 5.53s      remaining: 4.17s
114:     learn: 0.4166499      total: 5.58s      remaining: 4.13s
115:     learn: 0.4165352      total: 5.64s      remaining: 4.08s
116:     learn: 0.4163213      total: 5.69s      remaining: 4.03s
117:     learn: 0.4162145      total: 5.73s      remaining: 3.98s
118:     learn: 0.4159571      total: 5.8s       remaining: 3.95s
119:     learn: 0.4156204      total: 5.86s      remaining: 3.9s
120:     learn: 0.4153122      total: 5.91s      remaining: 3.86s
121:     learn: 0.4150074      total: 5.97s      remaining: 3.82s
122:     learn: 0.4148457      total: 6.02s      remaining: 3.77s
123:     learn: 0.4145422      total: 6.07s      remaining: 3.72s
124:     learn: 0.4144404      total: 6.12s      remaining: 3.67s
125:     learn: 0.4144364      total: 6.18s      remaining: 3.63s
126:     learn: 0.4144142      total: 6.22s      remaining: 3.58s
127:     learn: 0.4139253      total: 6.28s      remaining: 3.53s
128:     learn: 0.4136352      total: 6.33s      remaining: 3.48s
129:     learn: 0.4131392      total: 6.38s      remaining: 3.43s
130:     learn: 0.4129887      total: 6.43s      remaining: 3.39s
131:     learn: 0.4127218      total: 6.48s      remaining: 3.34s
132:     learn: 0.4122208      total: 6.54s      remaining: 3.29s
133:     learn: 0.4119828      total: 6.58s      remaining: 3.24s
134:     learn: 0.4118131      total: 6.64s      remaining: 3.19s
135:     learn: 0.4114979      total: 6.69s      remaining: 3.15s
136:     learn: 0.4113596      total: 6.75s      remaining: 3.1s
137:     learn: 0.4112153      total: 6.8s       remaining: 3.06s
138:     learn: 0.4111755      total: 6.85s      remaining: 3.01s
139:     learn: 0.4109136      total: 6.9s       remaining: 2.96s
140:     learn: 0.4107555      total: 6.95s      remaining: 2.91s
141:     learn: 0.4105122      total: 7.01s      remaining: 2.86s
142:     learn: 0.4104143      total: 7.06s      remaining: 2.81s
143:     learn: 0.4103837      total: 7.11s      remaining: 2.76s
```

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144:    learn: 0.4103062      total: 7.15s    remaining: 2.71s
145:    learn: 0.4102321      total: 7.2s     remaining: 2.66s
146:    learn: 0.4098953      total: 7.24s    remaining: 2.61s
147:    learn: 0.4093847      total: 7.29s    remaining: 2.56s
148:    learn: 0.4093271      total: 7.34s    remaining: 2.51s
149:    learn: 0.4092116      total: 7.39s    remaining: 2.46s
150:    learn: 0.4088512      total: 7.44s    remaining: 2.42s
151:    learn: 0.4088484      total: 7.5s     remaining: 2.37s
152:    learn: 0.4088176      total: 7.55s    remaining: 2.32s
153:    learn: 0.4087320      total: 7.59s    remaining: 2.27s
154:    learn: 0.4084688      total: 7.64s    remaining: 2.22s
155:    learn: 0.4082636      total: 7.69s    remaining: 2.17s
156:    learn: 0.4080572      total: 7.74s    remaining: 2.12s
157:    learn: 0.4079455      total: 7.81s    remaining: 2.08s
158:    learn: 0.4072737      total: 7.86s    remaining: 2.03s
159:    learn: 0.4071009      total: 7.91s    remaining: 1.98s
160:    learn: 0.4069002      total: 7.96s    remaining: 1.93s
161:    learn: 0.4067369      total: 8.01s    remaining: 1.88s
162:    learn: 0.4064380      total: 8.06s    remaining: 1.83s
163:    learn: 0.4063125      total: 8.11s    remaining: 1.78s
164:    learn: 0.4061193      total: 8.16s    remaining: 1.73s
165:    learn: 0.4060354      total: 8.21s    remaining: 1.68s
166:    learn: 0.4059650      total: 8.26s    remaining: 1.63s
167:    learn: 0.4058898      total: 8.31s    remaining: 1.58s
168:    learn: 0.4058446      total: 8.36s    remaining: 1.53s
169:    learn: 0.4056660      total: 8.41s    remaining: 1.48s
170:    learn: 0.4056479      total: 8.45s    remaining: 1.43s
171:    learn: 0.4054648      total: 8.5s     remaining: 1.38s
172:    learn: 0.4053496      total: 8.55s    remaining: 1.33s
173:    learn: 0.4051806      total: 8.6s     remaining: 1.28s
174:    learn: 0.4049644      total: 8.65s    remaining: 1.24s
175:    learn: 0.4049200      total: 8.7s     remaining: 1.19s
176:    learn: 0.4046982      total: 8.75s    remaining: 1.14s
177:    learn: 0.4045776      total: 8.8s     remaining: 1.09s
178:    learn: 0.4044717      total: 8.87s    remaining: 1.04s
179:    learn: 0.4043717      total: 8.92s    remaining: 991ms
180:    learn: 0.4041602      total: 8.97s    remaining: 942ms
181:    learn: 0.4039415      total: 9.02s    remaining: 892ms
182:    learn: 0.4035968      total: 9.08s    remaining: 843ms
183:    learn: 0.4034727      total: 9.13s    remaining: 794ms
184:    learn: 0.4033848      total: 9.18s    remaining: 744ms
185:    learn: 0.4032991      total: 9.22s    remaining: 694ms
186:    learn: 0.4031564      total: 9.28s    remaining: 645ms
187:    learn: 0.4030650      total: 9.33s    remaining: 595ms
188:    learn: 0.4028914      total: 9.38s    remaining: 546ms
189:    learn: 0.4027785      total: 9.43s    remaining: 496ms
190:    learn: 0.4026607      total: 9.47s    remaining: 446ms
191:    learn: 0.4025224      total: 9.53s    remaining: 397ms
```

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192:    learn: 0.4022610        total: 9.58s    remaining: 347ms
193:    learn: 0.4020480        total: 9.63s    remaining: 298ms
194:    learn: 0.4018980        total: 9.68s    remaining: 248ms
195:    learn: 0.4017471        total: 9.74s    remaining: 199ms
196:    learn: 0.4014893        total: 9.79s    remaining: 149ms
197:    learn: 0.4011154        total: 9.85s    remaining: 99.5ms
198:    learn: 0.4010003        total: 9.92s    remaining: 49.8ms
199:    learn: 0.4008834        total: 9.97s    remaining: 0us
Mean train f1-score of data (CV) 12 is : 0.814077309774024
Mean test f1-score of data (CV) 12 is : 0.8000911599384427
```

```
Shape of data 13 is :
(27303, 10)
Distribution of 13 is :
Yes    14102
No     13201
Name: TIMELY_RESPONSE, dtype: int64

<IPython.core.display.HTML object>

MetricVisualizer(layout=Layout(align_self='stretch', height='500px'))

Train f1_score [Yes]: for data 13 is : 0.811365557210126
Train f1_score [No]: for data 13 is : 0.8192789666473876
```

	precision	recall	f1-score	support
No	0.78	0.83	0.80	924
Yes	0.83	0.79	0.81	988
accuracy			0.81	1912
macro avg	0.81	0.81	0.81	1912
weighted avg	0.81	0.81	0.81	1912
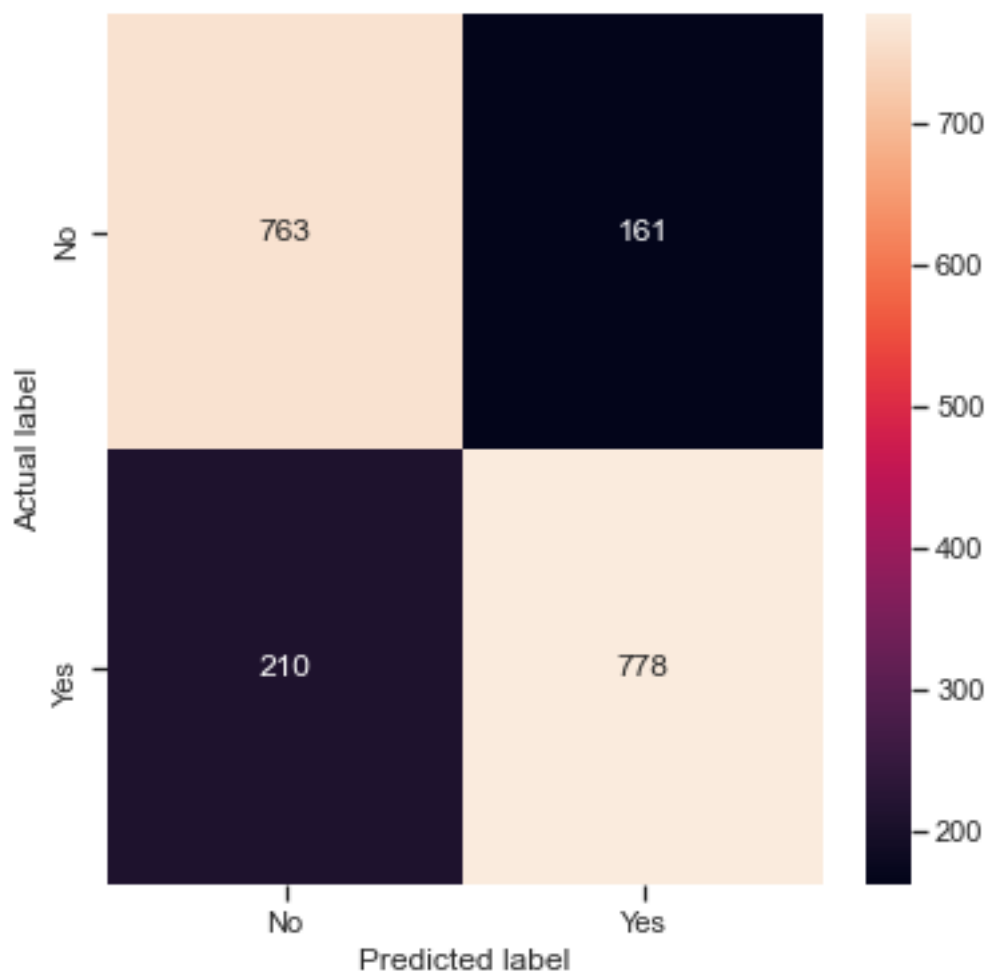
Cross validation result for data 13 is :

```
0:      learn: 0.6368363      total: 45.1ms    remaining: 8.97s
1:      learn: 0.5967888      total: 96.5ms    remaining: 9.55s
2:      learn: 0.5702287      total: 146ms     remaining: 9.58s
3:      learn: 0.5491855      total: 200ms     remaining: 9.81s
4:      learn: 0.5309973      total: 250ms     remaining: 9.76s
5:      learn: 0.5129883      total: 303ms     remaining: 9.81s
6:      learn: 0.5028870      total: 346ms     remaining: 9.53s
7:      learn: 0.4921812      total: 397ms     remaining: 9.54s
8:      learn: 0.4834296      total: 448ms     remaining: 9.51s
9:      learn: 0.4770609      total: 494ms     remaining: 9.39s
10:     learn: 0.4723575      total: 540ms     remaining: 9.29s
11:     learn: 0.4687128      total: 591ms     remaining: 9.26s
12:     learn: 0.4633309      total: 640ms     remaining: 9.21s
13:     learn: 0.4605048      total: 689ms     remaining: 9.15s
14:     learn: 0.4583860      total: 736ms     remaining: 9.07s
15:     learn: 0.4562266      total: 786ms     remaining: 9.04s
```

```
16:      learn: 0.4538158      total: 835ms     remaining: 8.99s
17:      learn: 0.4523485      total: 886ms     remaining: 8.96s
18:      learn: 0.4507224      total: 942ms     remaining: 8.97s
19:      learn: 0.4494167      total: 995ms     remaining: 8.96s
20:      learn: 0.4482657      total: 1.04s     remaining: 8.86s
21:      learn: 0.4476439      total: 1.09s     remaining: 8.8s
22:      learn: 0.4466701      total: 1.14s     remaining: 8.77s
23:      learn: 0.4450693      total: 1.23s     remaining: 9.04s
24:      learn: 0.4443600      total: 1.3s      remaining: 9.11s
25:      learn: 0.4431597      total: 1.35s     remaining: 9.04s
26:      learn: 0.4421947      total: 1.41s     remaining: 9.04s
27:      learn: 0.4413053      total: 1.47s     remaining: 9.03s
28:      learn: 0.4402963      total: 1.52s     remaining: 8.98s
29:      learn: 0.4397233      total: 1.58s     remaining: 8.95s
30:      learn: 0.4393618      total: 1.64s     remaining: 8.92s
31:      learn: 0.4389472      total: 1.72s     remaining: 9s
32:      learn: 0.4381642      total: 1.82s     remaining: 9.21s
33:      learn: 0.4378801      total: 1.91s     remaining: 9.33s
34:      learn: 0.4375024      total: 1.97s     remaining: 9.28s
35:      learn: 0.4365856      total: 2.02s     remaining: 9.18s
36:      learn: 0.4357935      total: 2.09s     remaining: 9.22s
37:      learn: 0.4344311      total: 2.15s     remaining: 9.15s
38:      learn: 0.4338554      total: 2.19s     remaining: 9.05s
39:      learn: 0.4330102      total: 2.25s     remaining: 9.02s
40:      learn: 0.4325556      total: 2.3s      remaining: 8.94s
41:      learn: 0.4322177      total: 2.36s     remaining: 8.87s
42:      learn: 0.4316126      total: 2.41s     remaining: 8.8s
43:      learn: 0.4311422      total: 2.48s     remaining: 8.79s
44:      learn: 0.4308195      total: 2.53s     remaining: 8.72s
45:      learn: 0.4305852      total: 2.58s     remaining: 8.63s
46:      learn: 0.4302918      total: 2.63s     remaining: 8.57s
47:      learn: 0.4299999      total: 2.71s     remaining: 8.6s
48:      learn: 0.4293411      total: 2.77s     remaining: 8.55s
49:      learn: 0.4291845      total: 2.83s     remaining: 8.48s
50:      learn: 0.4290122      total: 2.89s     remaining: 8.44s
51:      learn: 0.4286733      total: 2.95s     remaining: 8.39s
52:      learn: 0.4285128      total: 2.99s     remaining: 8.3s
53:      learn: 0.4283701      total: 3.04s     remaining: 8.21s
54:      learn: 0.4280097      total: 3.09s     remaining: 8.14s
55:      learn: 0.4280054      total: 3.11s     remaining: 7.99s
56:      learn: 0.4278932      total: 3.18s     remaining: 7.98s
57:      learn: 0.4277338      total: 3.23s     remaining: 7.91s
58:      learn: 0.4271587      total: 3.3s      remaining: 7.89s
59:      learn: 0.4270339      total: 3.36s     remaining: 7.83s
60:      learn: 0.4264970      total: 3.43s     remaining: 7.81s
61:      learn: 0.4262151      total: 3.48s     remaining: 7.75s
62:      learn: 0.4260914      total: 3.53s     remaining: 7.67s
63:      learn: 0.4257019      total: 3.58s     remaining: 7.61s
```

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64:     learn: 0.4255341      total: 3.63s     remaining: 7.55s
65:     learn: 0.4255155      total: 3.69s     remaining: 7.48s
66:     learn: 0.4249112      total: 3.74s     remaining: 7.42s
67:     learn: 0.4246809      total: 3.79s     remaining: 7.36s
68:     learn: 0.4245685      total: 3.84s     remaining: 7.29s
69:     learn: 0.4242869      total: 3.91s     remaining: 7.26s
70:     learn: 0.4241459      total: 4.05s     remaining: 7.37s
71:     learn: 0.4239386      total: 4.11s     remaining: 7.31s
72:     learn: 0.4239348      total: 4.13s     remaining: 7.19s
73:     learn: 0.4236259      total: 4.18s     remaining: 7.12s
74:     learn: 0.4233649      total: 4.23s     remaining: 7.06s
75:     learn: 0.4231164      total: 4.28s     remaining: 6.99s
76:     learn: 0.4229313      total: 4.33s     remaining: 6.92s
77:     learn: 0.4227911      total: 4.39s     remaining: 6.87s
78:     learn: 0.4227375      total: 4.44s     remaining: 6.8s
79:     learn: 0.4224921      total: 4.5s      remaining: 6.75s
80:     learn: 0.4222808      total: 4.56s     remaining: 6.69s
81:     learn: 0.4217014      total: 4.6s      remaining: 6.62s
82:     learn: 0.4210468      total: 4.66s     remaining: 6.57s
83:     learn: 0.4209587      total: 4.72s     remaining: 6.51s
84:     learn: 0.4208247      total: 4.78s     remaining: 6.47s
85:     learn: 0.4206605      total: 4.84s     remaining: 6.42s
86:     learn: 0.4204902      total: 4.89s     remaining: 6.35s
87:     learn: 0.4203114      total: 4.95s     remaining: 6.3s
88:     learn: 0.4201101      total: 5s        remaining: 6.24s
89:     learn: 0.4199285      total: 5.06s     remaining: 6.18s
90:     learn: 0.4198924      total: 5.13s     remaining: 6.15s
91:     learn: 0.4197252      total: 5.2s      remaining: 6.1s
92:     learn: 0.4192959      total: 5.25s     remaining: 6.04s
93:     learn: 0.4189488      total: 5.29s     remaining: 5.97s
94:     learn: 0.4186964      total: 5.37s     remaining: 5.93s
95:     learn: 0.4185891      total: 5.42s     remaining: 5.87s
96:     learn: 0.4185321      total: 5.48s     remaining: 5.82s
97:     learn: 0.4184570      total: 5.54s     remaining: 5.76s
98:     learn: 0.4182041      total: 5.59s     remaining: 5.7s
99:     learn: 0.4180767      total: 5.66s     remaining: 5.66s
100:    learn: 0.4179320      total: 5.72s     remaining: 5.61s
101:    learn: 0.4175969      total: 5.78s     remaining: 5.56s
102:    learn: 0.4171265      total: 5.84s     remaining: 5.5s
103:    learn: 0.4170715      total: 5.9s      remaining: 5.45s
104:    learn: 0.4168553      total: 5.95s     remaining: 5.38s
105:    learn: 0.4166396      total: 6s        remaining: 5.32s
106:    learn: 0.4163152      total: 6.07s     remaining: 5.28s
107:    learn: 0.4162412      total: 6.12s     remaining: 5.21s
108:    learn: 0.4160584      total: 6.17s     remaining: 5.15s
109:    learn: 0.4157212      total: 6.22s     remaining: 5.09s
110:    learn: 0.4155510      total: 6.27s     remaining: 5.03s
111:    learn: 0.4154207      total: 6.32s     remaining: 4.96s
```

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112:    learn: 0.4153027    total: 6.37s    remaining: 4.9s
113:    learn: 0.4148106    total: 6.43s    remaining: 4.85s
114:    learn: 0.4144091    total: 6.49s    remaining: 4.79s
115:    learn: 0.4140779    total: 6.56s    remaining: 4.75s
116:    learn: 0.4137292    total: 6.63s    remaining: 4.7s
117:    learn: 0.4135405    total: 6.67s    remaining: 4.64s
118:    learn: 0.4134310    total: 6.74s    remaining: 4.59s
119:    learn: 0.4132812    total: 6.8s     remaining: 4.53s
120:    learn: 0.4130308    total: 6.87s    remaining: 4.49s
121:    learn: 0.4129714    total: 6.92s    remaining: 4.42s
122:    learn: 0.4123181    total: 6.97s    remaining: 4.36s
123:    learn: 0.4120692    total: 7.03s    remaining: 4.31s
124:    learn: 0.4116036    total: 7.09s    remaining: 4.25s
125:    learn: 0.4112995    total: 7.14s    remaining: 4.2s
126:    learn: 0.4108837    total: 7.21s    remaining: 4.14s
127:    learn: 0.4107316    total: 7.26s    remaining: 4.08s
128:    learn: 0.4103776    total: 7.31s    remaining: 4.02s
129:    learn: 0.4101943    total: 7.36s    remaining: 3.96s
130:    learn: 0.4101642    total: 7.41s    remaining: 3.9s
131:    learn: 0.4096450    total: 7.47s    remaining: 3.85s
132:    learn: 0.4094698    total: 7.53s    remaining: 3.79s
133:    learn: 0.4093587    total: 7.57s    remaining: 3.73s
134:    learn: 0.4091574    total: 7.62s    remaining: 3.67s
135:    learn: 0.4089610    total: 7.67s    remaining: 3.61s
136:    learn: 0.4089149    total: 7.72s    remaining: 3.55s
137:    learn: 0.4088650    total: 7.76s    remaining: 3.49s
138:    learn: 0.4088619    total: 7.83s    remaining: 3.44s
139:    learn: 0.4087186    total: 7.88s    remaining: 3.38s
140:    learn: 0.4083714    total: 7.94s    remaining: 3.32s
141:    learn: 0.4083203    total: 8s       remaining: 3.27s
142:    learn: 0.4080614    total: 8.08s    remaining: 3.22s
143:    learn: 0.4079762    total: 8.13s    remaining: 3.16s
144:    learn: 0.4079508    total: 8.18s    remaining: 3.1s
145:    learn: 0.4077871    total: 8.23s    remaining: 3.04s
146:    learn: 0.4076367    total: 8.29s    remaining: 2.99s
147:    learn: 0.4073013    total: 8.34s    remaining: 2.93s
148:    learn: 0.4072652    total: 8.39s    remaining: 2.87s
149:    learn: 0.4071775    total: 8.44s    remaining: 2.81s
150:    learn: 0.4070900    total: 8.5s     remaining: 2.76s
151:    learn: 0.4070126    total: 8.55s    remaining: 2.7s
152:    learn: 0.4069378    total: 8.63s    remaining: 2.65s
153:    learn: 0.4068396    total: 8.67s    remaining: 2.59s
154:    learn: 0.4064730    total: 8.72s    remaining: 2.53s
155:    learn: 0.4059818    total: 8.78s    remaining: 2.48s
156:    learn: 0.4056553    total: 8.85s    remaining: 2.42s
157:    learn: 0.4054874    total: 8.9s     remaining: 2.37s
158:    learn: 0.4054001    total: 8.97s    remaining: 2.31s
159:    learn: 0.4051935    total: 9.04s    remaining: 2.26s
```

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160:    learn: 0.4051594    total: 9.09s    remaining: 2.2s
161:    learn: 0.4049069    total: 9.14s    remaining: 2.14s
162:    learn: 0.4048617    total: 9.19s    remaining: 2.09s
163:    learn: 0.4045969    total: 9.26s    remaining: 2.03s
164:    learn: 0.4043196    total: 9.31s    remaining: 1.97s
165:    learn: 0.4040533    total: 9.35s    remaining: 1.92s
166:    learn: 0.4040060    total: 9.4s     remaining: 1.86s
167:    learn: 0.4038893    total: 9.46s    remaining: 1.8s
168:    learn: 0.4035852    total: 9.51s    remaining: 1.74s
169:    learn: 0.4034975    total: 9.56s    remaining: 1.69s
170:    learn: 0.4033575    total: 9.61s    remaining: 1.63s
171:    learn: 0.4032062    total: 9.66s    remaining: 1.57s
172:    learn: 0.4030753    total: 9.71s    remaining: 1.52s
173:    learn: 0.4027232    total: 9.77s    remaining: 1.46s
174:    learn: 0.4022911    total: 9.82s    remaining: 1.4s
175:    learn: 0.4020582    total: 9.88s    remaining: 1.35s
176:    learn: 0.4019824    total: 9.93s    remaining: 1.29s
177:    learn: 0.4019173    total: 10s      remaining: 1.24s
178:    learn: 0.4018443    total: 10.1s    remaining: 1.18s
179:    learn: 0.4013862    total: 10.1s    remaining: 1.13s
180:    learn: 0.4011018    total: 10.2s    remaining: 1.07s
181:    learn: 0.4008297    total: 10.3s    remaining: 1.01s
182:    learn: 0.4005833    total: 10.3s    remaining: 958ms
183:    learn: 0.4004937    total: 10.4s    remaining: 903ms
184:    learn: 0.4002834    total: 10.4s    remaining: 847ms
185:    learn: 0.4000477    total: 10.5s    remaining: 790ms
186:    learn: 0.3998836    total: 10.6s    remaining: 734ms
187:    learn: 0.3995665    total: 10.6s    remaining: 678ms
188:    learn: 0.3995086    total: 10.7s    remaining: 621ms
189:    learn: 0.3993063    total: 10.7s    remaining: 564ms
190:    learn: 0.3987154    total: 10.8s    remaining: 508ms
191:    learn: 0.3986078    total: 10.8s    remaining: 451ms
192:    learn: 0.3985207    total: 10.9s    remaining: 395ms
193:    learn: 0.3984036    total: 10.9s    remaining: 338ms
194:    learn: 0.3983637    total: 11s      remaining: 282ms
195:    learn: 0.3982027    total: 11s      remaining: 225ms
196:    learn: 0.3980399    total: 11.1s    remaining: 169ms
197:    learn: 0.3978265    total: 11.1s    remaining: 113ms
198:    learn: 0.3977196    total: 11.2s    remaining: 56.2ms
199:    learn: 0.3973886    total: 11.2s    remaining: 0us
0:      learn: 0.6337902    total: 46.3ms   remaining: 9.22s
1:      learn: 0.5938140    total: 99.2ms   remaining: 9.82s
2:      learn: 0.5678030    total: 153ms    remaining: 10.1s
3:      learn: 0.5462848    total: 212ms    remaining: 10.4s
4:      learn: 0.5281969    total: 270ms    remaining: 10.5s
5:      learn: 0.5147207    total: 354ms    remaining: 11.4s
6:      learn: 0.4993861    total: 427ms    remaining: 11.8s
7:      learn: 0.4912594    total: 483ms    remaining: 11.6s
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 8:        learn: 0.4844685        total: 553ms        remaining: 11.7s
 9:        learn: 0.4758393        total: 630ms        remaining: 12s
10:        learn: 0.4708846        total: 689ms        remaining: 11.8s
11:        learn: 0.4667124        total: 744ms        remaining: 11.7s
12:        learn: 0.4637025        total: 808ms        remaining: 11.6s
13:        learn: 0.4614773        total: 865ms        remaining: 11.5s
14:        learn: 0.4588847        total: 917ms        remaining: 11.3s
15:        learn: 0.4561205        total: 971ms        remaining: 11.2s
16:        learn: 0.4543410        total: 1.01s        remaining: 10.9s
17:        learn: 0.4524290        total: 1.06s        remaining: 10.7s
18:        learn: 0.4512653        total: 1.12s        remaining: 10.7s
19:        learn: 0.4500554        total: 1.17s        remaining: 10.5s
20:        learn: 0.4490636        total: 1.21s        remaining: 10.3s
21:        learn: 0.4471530        total: 1.26s        remaining: 10.2s
22:        learn: 0.4456472        total: 1.31s        remaining: 10.1s
23:        learn: 0.4440169        total: 1.37s        remaining: 10.1s
24:        learn: 0.4432798        total: 1.42s        remaining: 9.95s
25:        learn: 0.4425699        total: 1.47s        remaining: 9.84s
26:        learn: 0.4420264        total: 1.52s        remaining: 9.74s
27:        learn: 0.4408155        total: 1.6s         remaining: 9.84s
28:        learn: 0.4403220        total: 1.68s        remaining: 9.9s
29:        learn: 0.4393712        total: 1.78s        remaining: 10.1s
30:        learn: 0.4381816        total: 1.85s        remaining: 10.1s
31:        learn: 0.4377051        total: 1.91s        remaining: 10s
32:        learn: 0.4368441        total: 1.96s        remaining: 9.92s
33:        learn: 0.4365174        total: 2.01s        remaining: 9.81s
34:        learn: 0.4358929        total: 2.06s        remaining: 9.69s
35:        learn: 0.4354832        total: 2.1s         remaining: 9.57s
36:        learn: 0.4352290        total: 2.14s        remaining: 9.44s
37:        learn: 0.4347525        total: 2.19s        remaining: 9.34s
38:        learn: 0.4345908        total: 2.24s        remaining: 9.25s
39:        learn: 0.4342439        total: 2.29s        remaining: 9.16s
40:        learn: 0.4341280        total: 2.35s        remaining: 9.12s
41:        learn: 0.4333864        total: 2.42s        remaining: 9.12s
42:        learn: 0.4327698        total: 2.47s        remaining: 9.03s
43:        learn: 0.4325959        total: 2.53s        remaining: 8.98s
44:        learn: 0.4323436        total: 2.58s        remaining: 8.89s
45:        learn: 0.4321070        total: 2.65s        remaining: 8.86s
46:        learn: 0.4317637        total: 2.69s        remaining: 8.77s
47:        learn: 0.4314055        total: 2.75s        remaining: 8.72s
48:        learn: 0.4310848        total: 2.82s        remaining: 8.69s
49:        learn: 0.4308582        total: 2.87s        remaining: 8.6s
50:        learn: 0.4305286        total: 2.92s        remaining: 8.54s
51:        learn: 0.4302512        total: 2.99s        remaining: 8.51s
52:        learn: 0.4299602        total: 3.05s        remaining: 8.45s
53:        learn: 0.4295455        total: 3.1s         remaining: 8.38s
54:        learn: 0.4294347        total: 3.17s        remaining: 8.36s
55:        learn: 0.4291976        total: 3.25s        remaining: 8.36s
```

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56:      learn: 0.4287972      total: 3.33s      remaining: 8.37s
57:      learn: 0.4286130      total: 3.38s      remaining: 8.28s
58:      learn: 0.4283779      total: 3.45s      remaining: 8.25s
59:      learn: 0.4282508      total: 3.5s       remaining: 8.16s
60:      learn: 0.4279756      total: 3.56s      remaining: 8.1s
61:      learn: 0.4278131      total: 3.6s       remaining: 8.01s
62:      learn: 0.4277151      total: 3.64s      remaining: 7.92s
63:      learn: 0.4274234      total: 3.69s      remaining: 7.84s
64:      learn: 0.4268165      total: 3.74s      remaining: 7.77s
65:      learn: 0.4263211      total: 3.81s      remaining: 7.73s
66:      learn: 0.4259919      total: 3.86s      remaining: 7.66s
67:      learn: 0.4256596      total: 3.91s      remaining: 7.59s
68:      learn: 0.4255113      total: 3.96s      remaining: 7.52s
69:      learn: 0.4252372      total: 4.02s      remaining: 7.47s
70:      learn: 0.4249431      total: 4.08s      remaining: 7.41s
71:      learn: 0.4247376      total: 4.12s      remaining: 7.33s
72:      learn: 0.4245439      total: 4.17s      remaining: 7.25s
73:      learn: 0.4243603      total: 4.22s      remaining: 7.19s
74:      learn: 0.4241909      total: 4.29s      remaining: 7.14s
75:      learn: 0.4240770      total: 4.34s      remaining: 7.08s
76:      learn: 0.4235957      total: 4.39s      remaining: 7.02s
77:      learn: 0.4230084      total: 4.45s      remaining: 6.96s
78:      learn: 0.4227304      total: 4.52s      remaining: 6.92s
79:      learn: 0.4225121      total: 4.57s      remaining: 6.86s
80:      learn: 0.4223683      total: 4.63s      remaining: 6.8s
81:      learn: 0.4221457      total: 4.71s      remaining: 6.77s
82:      learn: 0.4218525      total: 4.78s      remaining: 6.73s
83:      learn: 0.4215816      total: 4.84s      remaining: 6.68s
84:      learn: 0.4214532      total: 4.9s       remaining: 6.63s
85:      learn: 0.4212317      total: 4.98s      remaining: 6.6s
86:      learn: 0.4205710      total: 5.05s      remaining: 6.55s
87:      learn: 0.4203766      total: 5.11s      remaining: 6.5s
88:      learn: 0.4201185      total: 5.15s      remaining: 6.43s
89:      learn: 0.4199828      total: 5.2s       remaining: 6.36s
90:      learn: 0.4196231      total: 5.27s      remaining: 6.31s
91:      learn: 0.4193740      total: 5.31s      remaining: 6.24s
92:      learn: 0.4191881      total: 5.38s      remaining: 6.19s
93:      learn: 0.4191622      total: 5.42s      remaining: 6.12s
94:      learn: 0.4189244      total: 5.48s      remaining: 6.05s
95:      learn: 0.4187287      total: 5.56s      remaining: 6.03s
96:      learn: 0.4180927      total: 5.63s      remaining: 5.98s
97:      learn: 0.4175709      total: 5.69s      remaining: 5.92s
98:      learn: 0.4172077      total: 5.75s      remaining: 5.87s
99:      learn: 0.4171371      total: 5.81s      remaining: 5.81s
100:     learn: 0.4166469      total: 5.86s      remaining: 5.74s
101:     learn: 0.4159918      total: 5.9s       remaining: 5.67s
102:     learn: 0.4157464      total: 5.95s      remaining: 5.61s
103:     learn: 0.4156732      total: 6.01s      remaining: 5.55s
```

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104:    learn: 0.4153848    total: 6.07s    remaining: 5.49s
105:    learn: 0.4153004    total: 6.12s    remaining: 5.43s
106:    learn: 0.4148273    total: 6.17s    remaining: 5.36s
107:    learn: 0.4144016    total: 6.22s    remaining: 5.3s
108:    learn: 0.4142878    total: 6.33s    remaining: 5.28s
109:    learn: 0.4138578    total: 6.44s    remaining: 5.27s
110:    learn: 0.4137666    total: 6.5s     remaining: 5.21s
111:    learn: 0.4133354    total: 6.57s    remaining: 5.16s
112:    learn: 0.4132753    total: 6.62s    remaining: 5.09s
113:    learn: 0.4131264    total: 6.67s    remaining: 5.04s
114:    learn: 0.4129713    total: 6.74s    remaining: 4.98s
115:    learn: 0.4125762    total: 6.79s    remaining: 4.92s
116:    learn: 0.4121893    total: 6.85s    remaining: 4.86s
117:    learn: 0.4121144    total: 6.91s    remaining: 4.8s
118:    learn: 0.4117465    total: 6.96s    remaining: 4.74s
119:    learn: 0.4116718    total: 7.02s    remaining: 4.68s
120:    learn: 0.4113312    total: 7.08s    remaining: 4.62s
121:    learn: 0.4108909    total: 7.18s    remaining: 4.59s
122:    learn: 0.4106206    total: 7.24s    remaining: 4.53s
123:    learn: 0.4102018    total: 7.29s    remaining: 4.47s
124:    learn: 0.4101560    total: 7.38s    remaining: 4.43s
125:    learn: 0.4100361    total: 7.43s    remaining: 4.36s
126:    learn: 0.4098649    total: 7.49s    remaining: 4.3s
127:    learn: 0.4095604    total: 7.55s    remaining: 4.24s
128:    learn: 0.4092857    total: 7.61s    remaining: 4.19s
129:    learn: 0.4090696    total: 7.67s    remaining: 4.13s
130:    learn: 0.4089636    total: 7.72s    remaining: 4.07s
131:    learn: 0.4088106    total: 7.81s    remaining: 4.02s
132:    learn: 0.4087183    total: 7.86s    remaining: 3.96s
133:    learn: 0.4085649    total: 7.91s    remaining: 3.89s
134:    learn: 0.4084517    total: 7.95s    remaining: 3.83s
135:    learn: 0.4083516    total: 8s       remaining: 3.77s
136:    learn: 0.4080222    total: 8.06s    remaining: 3.71s
137:    learn: 0.4077422    total: 8.12s    remaining: 3.65s
138:    learn: 0.4076321    total: 8.17s    remaining: 3.59s
139:    learn: 0.4073385    total: 8.26s    remaining: 3.54s
140:    learn: 0.4071934    total: 8.31s    remaining: 3.48s
141:    learn: 0.4070944    total: 8.36s    remaining: 3.41s
142:    learn: 0.4070081    total: 8.41s    remaining: 3.35s
143:    learn: 0.4069154    total: 8.46s    remaining: 3.29s
144:    learn: 0.4066990    total: 8.54s    remaining: 3.24s
145:    learn: 0.4065255    total: 8.61s    remaining: 3.18s
146:    learn: 0.4061737    total: 8.66s    remaining: 3.12s
147:    learn: 0.4058738    total: 8.71s    remaining: 3.06s
148:    learn: 0.4058513    total: 8.77s    remaining: 3s
149:    learn: 0.4054358    total: 8.83s    remaining: 2.94s
150:    learn: 0.4051766    total: 8.88s    remaining: 2.88s
151:    learn: 0.4047936    total: 8.94s    remaining: 2.82s
```

```
152:    learn: 0.4046878    total: 9.01s    remaining: 2.77s
153:    learn: 0.4043276    total: 9.06s    remaining: 2.71s
154:    learn: 0.4042919    total: 9.1s     remaining: 2.64s
155:    learn: 0.4042324    total: 9.17s    remaining: 2.59s
156:    learn: 0.4040492    total: 9.22s    remaining: 2.52s
157:    learn: 0.4039462    total: 9.28s    remaining: 2.46s
158:    learn: 0.4036845    total: 9.33s    remaining: 2.4s
159:    learn: 0.4035962    total: 9.38s    remaining: 2.34s
160:    learn: 0.4034890    total: 9.43s    remaining: 2.28s
161:    learn: 0.4033371    total: 9.48s    remaining: 2.22s
162:    learn: 0.4031885    total: 9.53s    remaining: 2.16s
163:    learn: 0.4029880    total: 9.58s    remaining: 2.1s
164:    learn: 0.4028652    total: 9.63s    remaining: 2.04s
165:    learn: 0.4027710    total: 9.68s    remaining: 1.98s
166:    learn: 0.4027285    total: 9.73s    remaining: 1.92s
167:    learn: 0.4024253    total: 9.78s    remaining: 1.86s
168:    learn: 0.4021935    total: 9.84s    remaining: 1.8s
169:    learn: 0.4020085    total: 9.89s    remaining: 1.75s
170:    learn: 0.4019659    total: 10s      remaining: 1.7s
171:    learn: 0.4018368    total: 10.1s    remaining: 1.64s
172:    learn: 0.4016296    total: 10.1s    remaining: 1.58s
173:    learn: 0.4015830    total: 10.1s    remaining: 1.52s
174:    learn: 0.4013246    total: 10.2s    remaining: 1.46s
175:    learn: 0.4012275    total: 10.3s    remaining: 1.4s
176:    learn: 0.4010953    total: 10.3s    remaining: 1.34s
177:    learn: 0.4010026    total: 10.4s    remaining: 1.28s
178:    learn: 0.4008104    total: 10.4s    remaining: 1.22s
179:    learn: 0.4006264    total: 10.5s    remaining: 1.17s
180:    learn: 0.4005164    total: 10.6s    remaining: 1.11s
181:    learn: 0.4003243    total: 10.6s    remaining: 1.05s
182:    learn: 0.4002188    total: 10.7s    remaining: 990ms
183:    learn: 0.4001343    total: 10.7s    remaining: 932ms
184:    learn: 0.3998783    total: 10.8s    remaining: 873ms
185:    learn: 0.3997925    total: 10.8s    remaining: 815ms
186:    learn: 0.3997264    total: 10.9s    remaining: 756ms
187:    learn: 0.3995766    total: 10.9s    remaining: 698ms
188:    learn: 0.3995526    total: 11s      remaining: 639ms
189:    learn: 0.3993454    total: 11.1s    remaining: 582ms
190:    learn: 0.3992223    total: 11.1s    remaining: 523ms
191:    learn: 0.3990803    total: 11.2s    remaining: 466ms
192:    learn: 0.3990097    total: 11.2s    remaining: 407ms
193:    learn: 0.3988761    total: 11.3s    remaining: 349ms
194:    learn: 0.3987916    total: 11.3s    remaining: 291ms
195:    learn: 0.3985202    total: 11.4s    remaining: 233ms
196:    learn: 0.3984509    total: 11.5s    remaining: 175ms
197:    learn: 0.3982427    total: 11.5s    remaining: 117ms
198:    learn: 0.3980457    total: 11.6s    remaining: 58.3ms
199:    learn: 0.3979835    total: 11.7s    remaining: 0us
```

```
0:      learn: 0.6318616      total: 43.5ms   remaining: 8.66s
1:      learn: 0.5908505      total: 101ms    remaining: 10s
2:      learn: 0.5692801      total: 151ms    remaining: 9.9s
3:      learn: 0.5452332      total: 200ms    remaining: 9.8s
4:      learn: 0.5277640      total: 288ms    remaining: 11.2s
5:      learn: 0.5136840      total: 338ms    remaining: 10.9s
6:      learn: 0.5028303      total: 399ms    remaining: 11s
7:      learn: 0.4950296      total: 452ms    remaining: 10.9s
8:      learn: 0.4867272      total: 511ms    remaining: 10.8s
9:      learn: 0.4810505      total: 560ms    remaining: 10.6s
10:     learn: 0.4767957      total: 618ms    remaining: 10.6s
11:     learn: 0.4703993      total: 668ms    remaining: 10.5s
12:     learn: 0.4668070      total: 715ms    remaining: 10.3s
13:     learn: 0.4649222      total: 755ms    remaining: 10s
14:     learn: 0.4612223      total: 804ms    remaining: 9.91s
15:     learn: 0.4586869      total: 852ms    remaining: 9.8s
16:     learn: 0.4568549      total: 944ms    remaining: 10.2s
17:     learn: 0.4547145      total: 1000ms   remaining: 10.1s
18:     learn: 0.4531237      total: 1.04s    remaining: 9.96s
19:     learn: 0.4511038      total: 1.09s    remaining: 9.82s
20:     learn: 0.4493524      total: 1.15s    remaining: 9.82s
21:     learn: 0.4483897      total: 1.21s    remaining: 9.8s
22:     learn: 0.4477447      total: 1.26s    remaining: 9.71s
23:     learn: 0.4465627      total: 1.31s    remaining: 9.6s
24:     learn: 0.4458777      total: 1.35s    remaining: 9.49s
25:     learn: 0.4445347      total: 1.4s     remaining: 9.4s
26:     learn: 0.4435204      total: 1.45s    remaining: 9.32s
27:     learn: 0.4430320      total: 1.5s     remaining: 9.22s
28:     learn: 0.4429058      total: 1.53s    remaining: 9.01s
29:     learn: 0.4419798      total: 1.59s    remaining: 9s
30:     learn: 0.4412414      total: 1.64s    remaining: 8.93s
31:     learn: 0.4409616      total: 1.69s    remaining: 8.86s
32:     learn: 0.4405816      total: 1.73s    remaining: 8.76s
33:     learn: 0.4402455      total: 1.79s    remaining: 8.73s
34:     learn: 0.4396806      total: 1.86s    remaining: 8.76s
35:     learn: 0.4392595      total: 1.92s    remaining: 8.73s
36:     learn: 0.4389150      total: 1.97s    remaining: 8.7s
37:     learn: 0.4386624      total: 2.02s    remaining: 8.62s
38:     learn: 0.4381838      total: 2.09s    remaining: 8.62s
39:     learn: 0.4377028      total: 2.14s    remaining: 8.56s
40:     learn: 0.4368223      total: 2.19s    remaining: 8.51s
41:     learn: 0.4366482      total: 2.24s    remaining: 8.41s
42:     learn: 0.4364192      total: 2.28s    remaining: 8.33s
43:     learn: 0.4362294      total: 2.33s    remaining: 8.25s
44:     learn: 0.4354355      total: 2.38s    remaining: 8.19s
45:     learn: 0.4348079      total: 2.43s    remaining: 8.14s
46:     learn: 0.4344026      total: 2.52s    remaining: 8.21s
47:     learn: 0.4337052      total: 2.62s    remaining: 8.29s
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48:     learn: 0.4334996     total: 2.69s     remaining: 8.28s
49:     learn: 0.4333578     total: 2.75s     remaining: 8.24s
50:     learn: 0.4333554     total: 2.79s     remaining: 8.14s
51:     learn: 0.4332588     total: 2.85s     remaining: 8.1s
52:     learn: 0.4331158     total: 2.91s     remaining: 8.06s
53:     learn: 0.4329246     total: 2.96s     remaining: 7.99s
54:     learn: 0.4323656     total: 3.01s     remaining: 7.95s
55:     learn: 0.4318685     total: 3.06s     remaining: 7.87s
56:     learn: 0.4316173     total: 3.13s     remaining: 7.84s
57:     learn: 0.4311265     total: 3.2s      remaining: 7.83s
58:     learn: 0.4309707     total: 3.26s     remaining: 7.78s
59:     learn: 0.4306354     total: 3.32s     remaining: 7.74s
60:     learn: 0.4303935     total: 3.37s     remaining: 7.68s
61:     learn: 0.4301625     total: 3.42s     remaining: 7.61s
62:     learn: 0.4297770     total: 3.5s      remaining: 7.62s
63:     learn: 0.4295644     total: 3.57s     remaining: 7.58s
64:     learn: 0.4291515     total: 3.63s     remaining: 7.54s
65:     learn: 0.4291047     total: 3.68s     remaining: 7.47s
66:     learn: 0.4287100     total: 3.73s     remaining: 7.4s
67:     learn: 0.4285644     total: 3.79s     remaining: 7.35s
68:     learn: 0.4281067     total: 3.83s     remaining: 7.28s
69:     learn: 0.4277007     total: 3.89s     remaining: 7.22s
70:     learn: 0.4272710     total: 3.96s     remaining: 7.2s
71:     learn: 0.4268738     total: 4.01s     remaining: 7.13s
72:     learn: 0.4268603     total: 4.06s     remaining: 7.07s
73:     learn: 0.4267795     total: 4.12s     remaining: 7.01s
74:     learn: 0.4260909     total: 4.17s     remaining: 6.95s
75:     learn: 0.4260045     total: 4.22s     remaining: 6.89s
76:     learn: 0.4259054     total: 4.27s     remaining: 6.83s
77:     learn: 0.4257190     total: 4.33s     remaining: 6.77s
78:     learn: 0.4256531     total: 4.39s     remaining: 6.72s
79:     learn: 0.4255212     total: 4.44s     remaining: 6.67s
80:     learn: 0.4253953     total: 4.49s     remaining: 6.6s
81:     learn: 0.4250341     total: 4.54s     remaining: 6.54s
82:     learn: 0.4246355     total: 4.6s      remaining: 6.48s
83:     learn: 0.4243252     total: 4.65s     remaining: 6.42s
84:     learn: 0.4241392     total: 4.71s     remaining: 6.37s
85:     learn: 0.4239394     total: 4.77s     remaining: 6.32s
86:     learn: 0.4238481     total: 4.82s     remaining: 6.26s
87:     learn: 0.4233702     total: 4.88s     remaining: 6.21s
88:     learn: 0.4232022     total: 4.94s     remaining: 6.16s
89:     learn: 0.4230830     total: 4.99s     remaining: 6.1s
90:     learn: 0.4226383     total: 5.04s     remaining: 6.03s
91:     learn: 0.4224846     total: 5.08s     remaining: 5.96s
92:     learn: 0.4222041     total: 5.16s     remaining: 5.93s
93:     learn: 0.4220100     total: 5.21s     remaining: 5.87s
94:     learn: 0.4216792     total: 5.25s     remaining: 5.81s
95:     learn: 0.4212535     total: 5.3s      remaining: 5.74s
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96:     learn: 0.4211492     total: 5.38s     remaining: 5.71s
97:     learn: 0.4208209     total: 5.43s     remaining: 5.66s
98:     learn: 0.4207256     total: 5.49s     remaining: 5.6s
99:     learn: 0.4204566     total: 5.54s     remaining: 5.54s
100:    learn: 0.4200357     total: 5.59s     remaining: 5.48s
101:    learn: 0.4199019     total: 5.63s     remaining: 5.41s
102:    learn: 0.4194966     total: 5.7s      remaining: 5.36s
103:    learn: 0.4192592     total: 5.74s     remaining: 5.3s
104:    learn: 0.4191882     total: 5.8s      remaining: 5.25s
105:    learn: 0.4189663     total: 5.87s     remaining: 5.21s
106:    learn: 0.4188219     total: 5.93s     remaining: 5.16s
107:    learn: 0.4186125     total: 5.98s     remaining: 5.1s
108:    learn: 0.4183408     total: 6.03s     remaining: 5.03s
109:    learn: 0.4179168     total: 6.08s     remaining: 4.98s
110:    learn: 0.4177731     total: 6.14s     remaining: 4.92s
111:    learn: 0.4175019     total: 6.19s     remaining: 4.87s
112:    learn: 0.4173752     total: 6.24s     remaining: 4.81s
113:    learn: 0.4171281     total: 6.3s      remaining: 4.75s
114:    learn: 0.4170109     total: 6.35s     remaining: 4.69s
115:    learn: 0.4166525     total: 6.4s      remaining: 4.63s
116:    learn: 0.4164897     total: 6.46s     remaining: 4.58s
117:    learn: 0.4162704     total: 6.51s     remaining: 4.52s
118:    learn: 0.4158562     total: 6.57s     remaining: 4.47s
119:    learn: 0.4157316     total: 6.63s     remaining: 4.42s
120:    learn: 0.4154986     total: 6.67s     remaining: 4.36s
121:    learn: 0.4153680     total: 6.74s     remaining: 4.31s
122:    learn: 0.4152066     total: 6.82s     remaining: 4.27s
123:    learn: 0.4149833     total: 6.88s     remaining: 4.22s
124:    learn: 0.4148280     total: 6.95s     remaining: 4.17s
125:    learn: 0.4145604     total: 7s        remaining: 4.11s
126:    learn: 0.4144546     total: 7.07s     remaining: 4.06s
127:    learn: 0.4143807     total: 7.13s     remaining: 4.01s
128:    learn: 0.4141787     total: 7.17s     remaining: 3.95s
129:    learn: 0.4139864     total: 7.22s     remaining: 3.89s
130:    learn: 0.4137804     total: 7.28s     remaining: 3.84s
131:    learn: 0.4132663     total: 7.33s     remaining: 3.78s
132:    learn: 0.4131478     total: 7.38s     remaining: 3.72s
133:    learn: 0.4131381     total: 7.46s     remaining: 3.67s
134:    learn: 0.4128793     total: 7.57s     remaining: 3.64s
135:    learn: 0.4128049     total: 7.61s     remaining: 3.58s
136:    learn: 0.4125138     total: 7.67s     remaining: 3.53s
137:    learn: 0.4125047     total: 7.71s     remaining: 3.47s
138:    learn: 0.4122002     total: 7.77s     remaining: 3.41s
139:    learn: 0.4115474     total: 7.82s     remaining: 3.35s
140:    learn: 0.4112587     total: 7.87s     remaining: 3.29s
141:    learn: 0.4111266     total: 7.92s     remaining: 3.23s
142:    learn: 0.4109693     total: 7.97s     remaining: 3.17s
143:    learn: 0.4107104     total: 8.04s     remaining: 3.13s
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144:    learn: 0.4105191      total: 8.09s     remaining: 3.07s
145:    learn: 0.4104448      total: 8.16s     remaining: 3.02s
146:    learn: 0.4102900      total: 8.2s      remaining: 2.96s
147:    learn: 0.4101714      total: 8.28s     remaining: 2.91s
148:    learn: 0.4101425      total: 8.35s     remaining: 2.86s
149:    learn: 0.4097957      total: 8.41s     remaining: 2.8s
150:    learn: 0.4095200      total: 8.47s     remaining: 2.75s
151:    learn: 0.4093738      total: 8.54s     remaining: 2.7s
152:    learn: 0.4092707      total: 8.59s     remaining: 2.64s
153:    learn: 0.4088780      total: 8.64s     remaining: 2.58s
154:    learn: 0.4088198      total: 8.72s     remaining: 2.53s
155:    learn: 0.4087501      total: 8.78s     remaining: 2.48s
156:    learn: 0.4086826      total: 8.83s     remaining: 2.42s
157:    learn: 0.4083614      total: 8.89s     remaining: 2.36s
158:    learn: 0.4080665      total: 8.96s     remaining: 2.31s
159:    learn: 0.4077910      total: 9.01s     remaining: 2.25s
160:    learn: 0.4074194      total: 9.1s      remaining: 2.21s
161:    learn: 0.4072557      total: 9.15s     remaining: 2.15s
162:    learn: 0.4070830      total: 9.2s      remaining: 2.09s
163:    learn: 0.4069868      total: 9.26s     remaining: 2.03s
164:    learn: 0.4068492      total: 9.31s     remaining: 1.98s
165:    learn: 0.4066685      total: 9.37s     remaining: 1.92s
166:    learn: 0.4065282      total: 9.43s     remaining: 1.86s
167:    learn: 0.4065211      total: 9.48s     remaining: 1.8s
168:    learn: 0.4064114      total: 9.54s     remaining: 1.75s
169:    learn: 0.4062364      total: 9.59s     remaining: 1.69s
170:    learn: 0.4059836      total: 9.65s     remaining: 1.64s
171:    learn: 0.4058192      total: 9.7s      remaining: 1.58s
172:    learn: 0.4057579      total: 9.76s     remaining: 1.52s
173:    learn: 0.4055801      total: 9.81s     remaining: 1.47s
174:    learn: 0.4055219      total: 9.86s     remaining: 1.41s
175:    learn: 0.4053990      total: 9.91s     remaining: 1.35s
176:    learn: 0.4052647      total: 9.96s     remaining: 1.29s
177:    learn: 0.4050674      total: 10s       remaining: 1.24s
178:    learn: 0.4048323      total: 10.1s     remaining: 1.18s
179:    learn: 0.4045625      total: 10.2s     remaining: 1.13s
180:    learn: 0.4045142      total: 10.2s     remaining: 1.07s
181:    learn: 0.4043668      total: 10.3s     remaining: 1.01s
182:    learn: 0.4041353      total: 10.3s     remaining: 958ms
183:    learn: 0.4039708      total: 10.4s     remaining: 903ms
184:    learn: 0.4038678      total: 10.4s     remaining: 846ms
185:    learn: 0.4035675      total: 10.5s     remaining: 788ms
186:    learn: 0.4032302      total: 10.5s     remaining: 732ms
187:    learn: 0.4030749      total: 10.6s     remaining: 676ms
188:    learn: 0.4029843      total: 10.6s     remaining: 619ms
189:    learn: 0.4028882      total: 10.7s     remaining: 562ms
190:    learn: 0.4027477      total: 10.7s     remaining: 505ms
191:    learn: 0.4027193      total: 10.8s     remaining: 449ms
```

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192:    learn: 0.4025250      total: 10.8s   remaining: 392ms
193:    learn: 0.4024141      total: 10.9s   remaining: 336ms
194:    learn: 0.4022296      total: 10.9s   remaining: 280ms
195:    learn: 0.4021308      total: 11s     remaining: 224ms
196:    learn: 0.4020466      total: 11s     remaining: 168ms
197:    learn: 0.4018816      total: 11.1s   remaining: 112ms
198:    learn: 0.4017797      total: 11.1s   remaining: 55.9ms
199:    learn: 0.4017391      total: 11.2s   remaining: 0us
Mean train f1-score of data (CV) 13 is : 0.817126915548819
Mean test f1-score of data (CV) 13 is : 0.8040397087723923
```

```
Shape of data 14 is :
(27303, 10)
Distribution of 14 is :
Yes    14102
No     13201
Name: TIMELY_RESPONSE, dtype: int64

<IPython.core.display.HTML object>

MetricVisualizer(layout=Layout(align_self='stretch', height='500px'))

Train f1_score [Yes]: for data 14 is : 0.8204247844139253
Train f1_score [No]: for data 14 is : 0.8252117820781844
```

	precision	recall	f1-score	support
No	0.78	0.85	0.81	924
Yes	0.84	0.77	0.81	988
accuracy			0.81	1912
macro avg	0.81	0.81	0.81	1912
weighted avg	0.81	0.81	0.81	1912
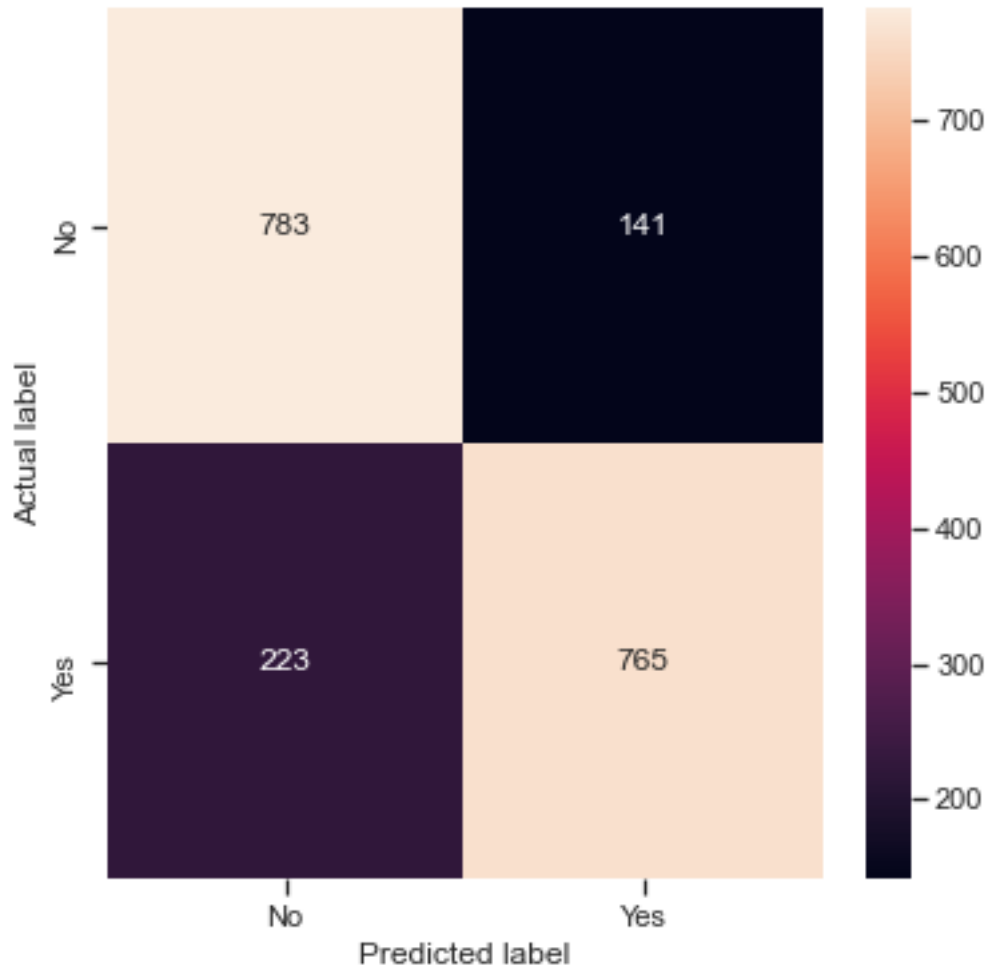
```
Cross validation result for data 14 is :
0:      learn: 0.6337979      total: 53.1ms    remaining: 10.6s
1:      learn: 0.5976799      total: 144ms     remaining: 14.2s
2:      learn: 0.5652215      total: 220ms     remaining: 14.4s
3:      learn: 0.5434876      total: 291ms     remaining: 14.3s
4:      learn: 0.5250698      total: 351ms     remaining: 13.7s
5:      learn: 0.5124814      total: 393ms     remaining: 12.7s
6:      learn: 0.5025567      total: 438ms     remaining: 12.1s
7:      learn: 0.4901782      total: 486ms     remaining: 11.7s
8:      learn: 0.4822422      total: 541ms     remaining: 11.5s
9:      learn: 0.4757427      total: 606ms     remaining: 11.5s
10:     learn: 0.4677009      total: 653ms     remaining: 11.2s
11:     learn: 0.4641357      total: 701ms     remaining: 11s
12:     learn: 0.4602823      total: 747ms     remaining: 10.8s
13:     learn: 0.4575911      total: 799ms     remaining: 10.6s
14:     learn: 0.4543675      total: 864ms     remaining: 10.7s
15:     learn: 0.4527601      total: 916ms     remaining: 10.5s
```

```
16:     learn: 0.4499057     total: 983ms    remaining: 10.6s
17:     learn: 0.4478098     total: 1.05s    remaining: 10.6s
18:     learn: 0.4460882     total: 1.1s     remaining: 10.5s
19:     learn: 0.4447949     total: 1.15s    remaining: 10.4s
20:     learn: 0.4433830     total: 1.2s     remaining: 10.2s
21:     learn: 0.4423616     total: 1.24s    remaining: 10s
22:     learn: 0.4414541     total: 1.31s    remaining: 10.1s
23:     learn: 0.4406880     total: 1.39s    remaining: 10.2s
24:     learn: 0.4396851     total: 1.47s    remaining: 10.3s
25:     learn: 0.4375077     total: 1.52s    remaining: 10.2s
26:     learn: 0.4364405     total: 1.57s    remaining: 10.1s
27:     learn: 0.4355449     total: 1.64s    remaining: 10.1s
28:     learn: 0.4348532     total: 1.69s    remaining: 9.97s
29:     learn: 0.4342291     total: 1.76s    remaining: 9.96s
30:     learn: 0.4338924     total: 1.82s    remaining: 9.9s
31:     learn: 0.4330139     total: 1.86s    remaining: 9.79s
32:     learn: 0.4325240     total: 1.92s    remaining: 9.73s
33:     learn: 0.4321075     total: 1.97s    remaining: 9.62s
34:     learn: 0.4313863     total: 2.05s    remaining: 9.68s
35:     learn: 0.4310750     total: 2.1s     remaining: 9.57s
36:     learn: 0.4297395     total: 2.16s    remaining: 9.51s
37:     learn: 0.4296291     total: 2.2s     remaining: 9.39s
38:     learn: 0.4284052     total: 2.25s    remaining: 9.31s
39:     learn: 0.4276149     total: 2.31s    remaining: 9.25s
40:     learn: 0.4269978     total: 2.37s    remaining: 9.19s
41:     learn: 0.4266977     total: 2.42s    remaining: 9.11s
42:     learn: 0.4263308     total: 2.48s    remaining: 9.04s
43:     learn: 0.4254579     total: 2.54s    remaining: 8.99s
44:     learn: 0.4245131     total: 2.6s     remaining: 8.95s
45:     learn: 0.4240383     total: 2.65s    remaining: 8.88s
46:     learn: 0.4236959     total: 2.7s     remaining: 8.8s
47:     learn: 0.4232205     total: 2.75s    remaining: 8.72s
48:     learn: 0.4229502     total: 2.81s    remaining: 8.65s
49:     learn: 0.4226410     total: 2.85s    remaining: 8.56s
50:     learn: 0.4224239     total: 2.9s     remaining: 8.49s
51:     learn: 0.4220962     total: 2.95s    remaining: 8.41s
52:     learn: 0.4215223     total: 3.01s    remaining: 8.34s
53:     learn: 0.4209934     total: 3.06s    remaining: 8.28s
54:     learn: 0.4207180     total: 3.11s    remaining: 8.21s
55:     learn: 0.4205753     total: 3.16s    remaining: 8.14s
56:     learn: 0.4204000     total: 3.22s    remaining: 8.07s
57:     learn: 0.4201873     total: 3.24s    remaining: 7.93s
58:     learn: 0.4198617     total: 3.29s    remaining: 7.87s
59:     learn: 0.4192447     total: 3.35s    remaining: 7.82s
60:     learn: 0.4192447     total: 3.37s    remaining: 7.68s
61:     learn: 0.4190409     total: 3.42s    remaining: 7.61s
62:     learn: 0.4190409     total: 3.43s    remaining: 7.46s
63:     learn: 0.4189301     total: 3.47s    remaining: 7.38s
```

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64:      learn: 0.4186953      total: 3.53s      remaining: 7.34s
65:      learn: 0.4183962      total: 3.59s      remaining: 7.29s
66:      learn: 0.4183074      total: 3.64s      remaining: 7.22s
67:      learn: 0.4180698      total: 3.69s      remaining: 7.16s
68:      learn: 0.4177800      total: 3.75s      remaining: 7.13s
69:      learn: 0.4176514      total: 3.81s      remaining: 7.07s
70:      learn: 0.4174470      total: 3.85s      remaining: 7s
71:      learn: 0.4170047      total: 3.91s      remaining: 6.95s
72:      learn: 0.4168322      total: 3.97s      remaining: 6.9s
73:      learn: 0.4165493      total: 4.03s      remaining: 6.86s
74:      learn: 0.4161195      total: 4.09s      remaining: 6.82s
75:      learn: 0.4157907      total: 4.16s      remaining: 6.78s
76:      learn: 0.4156050      total: 4.21s      remaining: 6.72s
77:      learn: 0.4152069      total: 4.25s      remaining: 6.65s
78:      learn: 0.4150309      total: 4.32s      remaining: 6.62s
79:      learn: 0.4147543      total: 4.37s      remaining: 6.55s
80:      learn: 0.4146331      total: 4.42s      remaining: 6.5s
81:      learn: 0.4144209      total: 4.47s      remaining: 6.44s
82:      learn: 0.4140244      total: 4.52s      remaining: 6.37s
83:      learn: 0.4138041      total: 4.58s      remaining: 6.32s
84:      learn: 0.4137380      total: 4.62s      remaining: 6.25s
85:      learn: 0.4134395      total: 4.67s      remaining: 6.2s
86:      learn: 0.4132241      total: 4.73s      remaining: 6.14s
87:      learn: 0.4128547      total: 4.79s      remaining: 6.09s
88:      learn: 0.4127923      total: 4.83s      remaining: 6.02s
89:      learn: 0.4125573      total: 4.87s      remaining: 5.95s
90:      learn: 0.4124669      total: 4.92s      remaining: 5.89s
91:      learn: 0.4124120      total: 4.98s      remaining: 5.85s
92:      learn: 0.4120314      total: 5.08s      remaining: 5.84s
93:      learn: 0.4117646      total: 5.15s      remaining: 5.81s
94:      learn: 0.4115324      total: 5.24s      remaining: 5.79s
95:      learn: 0.4114566      total: 5.34s      remaining: 5.79s
96:      learn: 0.4114212      total: 5.4s       remaining: 5.74s
97:      learn: 0.4112664      total: 5.46s      remaining: 5.68s
98:      learn: 0.4107112      total: 5.52s      remaining: 5.63s
99:      learn: 0.4102141      total: 5.58s      remaining: 5.58s
100:     learn: 0.4099998      total: 5.62s      remaining: 5.51s
101:     learn: 0.4099250      total: 5.67s      remaining: 5.45s
102:     learn: 0.4097157      total: 5.74s      remaining: 5.4s
103:     learn: 0.4093985      total: 5.79s      remaining: 5.35s
104:     learn: 0.4092604      total: 5.84s      remaining: 5.28s
105:     learn: 0.4087910      total: 5.89s      remaining: 5.23s
106:     learn: 0.4085738      total: 5.95s      remaining: 5.17s
107:     learn: 0.4085316      total: 6.01s      remaining: 5.12s
108:     learn: 0.4084765      total: 6.08s      remaining: 5.08s
109:     learn: 0.4081295      total: 6.15s      remaining: 5.03s
110:     learn: 0.4077648      total: 6.2s       remaining: 4.97s
111:     learn: 0.4074041      total: 6.24s      remaining: 4.91s
```

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112:    learn: 0.4065149        total: 6.3s     remaining: 4.85s
113:    learn: 0.4061509        total: 6.36s    remaining: 4.79s
114:    learn: 0.4054122        total: 6.41s    remaining: 4.74s
115:    learn: 0.4051547        total: 6.47s    remaining: 4.68s
116:    learn: 0.4047827        total: 6.53s    remaining: 4.63s
117:    learn: 0.4042827        total: 6.58s    remaining: 4.57s
118:    learn: 0.4040250        total: 6.63s    remaining: 4.52s
119:    learn: 0.4037178        total: 6.68s    remaining: 4.45s
120:    learn: 0.4035181        total: 6.74s    remaining: 4.4s
121:    learn: 0.4032589        total: 6.81s    remaining: 4.36s
122:    learn: 0.4031058        total: 6.88s    remaining: 4.31s
123:    learn: 0.4029952        total: 6.95s    remaining: 4.26s
124:    learn: 0.4028276        total: 7s       remaining: 4.2s
125:    learn: 0.4025908        total: 7.06s    remaining: 4.14s
126:    learn: 0.4025149        total: 7.11s    remaining: 4.09s
127:    learn: 0.4023056        total: 7.16s    remaining: 4.03s
128:    learn: 0.4020399        total: 7.2s     remaining: 3.96s
129:    learn: 0.4018644        total: 7.26s    remaining: 3.91s
130:    learn: 0.4015947        total: 7.31s    remaining: 3.85s
131:    learn: 0.4014989        total: 7.35s    remaining: 3.79s
132:    learn: 0.4013350        total: 7.41s    remaining: 3.73s
133:    learn: 0.4011284        total: 7.46s    remaining: 3.67s
134:    learn: 0.4009341        total: 7.5s     remaining: 3.61s
135:    learn: 0.4008763        total: 7.55s    remaining: 3.55s
136:    learn: 0.4007667        total: 7.59s    remaining: 3.49s
137:    learn: 0.4006233        total: 7.64s    remaining: 3.43s
138:    learn: 0.4005762        total: 7.69s    remaining: 3.37s
139:    learn: 0.4004633        total: 7.73s    remaining: 3.31s
140:    learn: 0.4003072        total: 7.79s    remaining: 3.26s
141:    learn: 0.4000591        total: 7.85s    remaining: 3.21s
142:    learn: 0.3997908        total: 7.91s    remaining: 3.15s
143:    learn: 0.3996730        total: 7.97s    remaining: 3.1s
144:    learn: 0.3996134        total: 8.04s    remaining: 3.05s
145:    learn: 0.3994476        total: 8.09s    remaining: 2.99s
146:    learn: 0.3990824        total: 8.13s    remaining: 2.93s
147:    learn: 0.3989205        total: 8.18s    remaining: 2.87s
148:    learn: 0.3987384        total: 8.22s    remaining: 2.81s
149:    learn: 0.3986431        total: 8.28s    remaining: 2.76s
150:    learn: 0.3985539        total: 8.32s    remaining: 2.7s
151:    learn: 0.3983181        total: 8.38s    remaining: 2.64s
152:    learn: 0.3981972        total: 8.43s    remaining: 2.59s
153:    learn: 0.3978258        total: 8.5s     remaining: 2.54s
154:    learn: 0.3977875        total: 8.54s    remaining: 2.48s
155:    learn: 0.3976937        total: 8.59s    remaining: 2.42s
156:    learn: 0.3973028        total: 8.63s    remaining: 2.36s
157:    learn: 0.3970576        total: 8.68s    remaining: 2.31s
158:    learn: 0.3970516        total: 8.75s    remaining: 2.25s
159:    learn: 0.3969216        total: 8.79s    remaining: 2.2s
```

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160:     learn: 0.3967588      total: 8.86s     remaining: 2.15s
161:     learn: 0.3964040      total: 8.91s     remaining: 2.09s
162:     learn: 0.3962979      total: 8.99s     remaining: 2.04s
163:     learn: 0.3962501      total: 9.04s     remaining: 1.98s
164:     learn: 0.3961800      total: 9.09s     remaining: 1.93s
165:     learn: 0.3961260      total: 9.14s     remaining: 1.87s
166:     learn: 0.3959518      total: 9.19s     remaining: 1.81s
167:     learn: 0.3958358      total: 9.23s     remaining: 1.76s
168:     learn: 0.3956824      total: 9.28s     remaining: 1.7s
169:     learn: 0.3953943      total: 9.35s     remaining: 1.65s
170:     learn: 0.3953730      total: 9.41s     remaining: 1.59s
171:     learn: 0.3951942      total: 9.46s     remaining: 1.54s
172:     learn: 0.3949938      total: 9.5s      remaining: 1.48s
173:     learn: 0.3947865      total: 9.54s     remaining: 1.43s
174:     learn: 0.3946485      total: 9.59s     remaining: 1.37s
175:     learn: 0.3945380      total: 9.64s     remaining: 1.31s
176:     learn: 0.3944228      total: 9.71s     remaining: 1.26s
177:     learn: 0.3942943      total: 9.77s     remaining: 1.21s
178:     learn: 0.3941929      total: 9.81s     remaining: 1.15s
179:     learn: 0.3940261      total: 9.86s     remaining: 1.09s
180:     learn: 0.3938340      total: 9.92s     remaining: 1.04s
181:     learn: 0.3936136      total: 9.97s     remaining: 986ms
182:     learn: 0.3935353      total: 10s       remaining: 930ms
183:     learn: 0.3934992      total: 10.1s     remaining: 875ms
184:     learn: 0.3933304      total: 10.2s     remaining: 823ms
185:     learn: 0.3931090      total: 10.2s     remaining: 769ms
186:     learn: 0.3929505      total: 10.3s     remaining: 714ms
187:     learn: 0.3925074      total: 10.3s     remaining: 659ms
188:     learn: 0.3922980      total: 10.4s     remaining: 604ms
189:     learn: 0.3921637      total: 10.4s     remaining: 549ms
190:     learn: 0.3921093      total: 10.5s     remaining: 495ms
191:     learn: 0.3919842      total: 10.6s     remaining: 440ms
192:     learn: 0.3919001      total: 10.6s     remaining: 385ms
193:     learn: 0.3917182      total: 10.7s     remaining: 330ms
194:     learn: 0.3914998      total: 10.7s     remaining: 275ms
195:     learn: 0.3914787      total: 10.8s     remaining: 220ms
196:     learn: 0.3912425      total: 10.9s     remaining: 165ms
197:     learn: 0.3911122      total: 10.9s     remaining: 110ms
198:     learn: 0.3910623      total: 11s       remaining: 55.2ms
199:     learn: 0.3909404      total: 11s       remaining: 0us
0:       learn: 0.6330738      total: 44ms      remaining: 8.75s
1:       learn: 0.5978021      total: 101ms     remaining: 10s
2:       learn: 0.5645047      total: 144ms     remaining: 9.47s
3:       learn: 0.5390043      total: 192ms     remaining: 9.42s
4:       learn: 0.5241604      total: 247ms     remaining: 9.62s
5:       learn: 0.5084741      total: 289ms     remaining: 9.36s
6:       learn: 0.4966437      total: 333ms     remaining: 9.19s
7:       learn: 0.4876117      total: 400ms     remaining: 9.59s
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8:      learn: 0.4799686      total: 463ms      remaining: 9.83s
9:      learn: 0.4752174      total: 525ms      remaining: 9.97s
10:     learn: 0.4689719      total: 584ms      remaining: 10s
11:     learn: 0.4633473      total: 636ms      remaining: 9.96s
12:     learn: 0.4605470      total: 692ms      remaining: 9.95s
13:     learn: 0.4579121      total: 747ms      remaining: 9.93s
14:     learn: 0.4552431      total: 794ms      remaining: 9.8s
15:     learn: 0.4531880      total: 842ms      remaining: 9.69s
16:     learn: 0.4513546      total: 896ms      remaining: 9.64s
17:     learn: 0.4493915      total: 961ms      remaining: 9.71s
18:     learn: 0.4474895      total: 1.03s      remaining: 9.82s
19:     learn: 0.4462547      total: 1.08s      remaining: 9.72s
20:     learn: 0.4447680      total: 1.13s      remaining: 9.59s
21:     learn: 0.4440759      total: 1.18s      remaining: 9.55s
22:     learn: 0.4437376      total: 1.2s       remaining: 9.25s
23:     learn: 0.4424314      total: 1.25s      remaining: 9.16s
24:     learn: 0.4415480      total: 1.31s      remaining: 9.16s
25:     learn: 0.4393567      total: 1.37s      remaining: 9.18s
26:     learn: 0.4384705      total: 1.43s      remaining: 9.14s
27:     learn: 0.4373228      total: 1.47s      remaining: 9.04s
28:     learn: 0.4369155      total: 1.51s      remaining: 8.93s
29:     learn: 0.4360813      total: 1.56s      remaining: 8.86s
30:     learn: 0.4353208      total: 1.63s      remaining: 8.88s
31:     learn: 0.4350725      total: 1.69s      remaining: 8.87s
32:     learn: 0.4338567      total: 1.75s      remaining: 8.87s
33:     learn: 0.4331406      total: 1.83s      remaining: 8.95s
34:     learn: 0.4323005      total: 1.88s      remaining: 8.84s
35:     learn: 0.4318571      total: 1.92s      remaining: 8.76s
36:     learn: 0.4314933      total: 1.98s      remaining: 8.74s
37:     learn: 0.4312940      total: 2.05s      remaining: 8.74s
38:     learn: 0.4308467      total: 2.11s      remaining: 8.73s
39:     learn: 0.4302642      total: 2.17s      remaining: 8.69s
40:     learn: 0.4301395      total: 2.22s      remaining: 8.6s
41:     learn: 0.4298286      total: 2.26s      remaining: 8.51s
42:     learn: 0.4294205      total: 2.31s      remaining: 8.44s
43:     learn: 0.4292633      total: 2.35s      remaining: 8.34s
44:     learn: 0.4289608      total: 2.4s       remaining: 8.26s
45:     learn: 0.4288921      total: 2.44s      remaining: 8.16s
46:     learn: 0.4277298      total: 2.48s      remaining: 8.09s
47:     learn: 0.4266171      total: 2.54s      remaining: 8.03s
48:     learn: 0.4264806      total: 2.6s       remaining: 8.01s
49:     learn: 0.4262045      total: 2.66s      remaining: 7.97s
50:     learn: 0.4261040      total: 2.7s       remaining: 7.88s
51:     learn: 0.4259634      total: 2.75s      remaining: 7.83s
52:     learn: 0.4256807      total: 2.8s       remaining: 7.76s
53:     learn: 0.4254000      total: 2.88s      remaining: 7.79s
54:     learn: 0.4249747      total: 2.95s      remaining: 7.78s
55:     learn: 0.4246143      total: 2.99s      remaining: 7.7s
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56:      learn: 0.4239055      total: 3.04s      remaining: 7.63s
57:      learn: 0.4237004      total: 3.08s      remaining: 7.54s
58:      learn: 0.4236499      total: 3.12s      remaining: 7.46s
59:      learn: 0.4233996      total: 3.17s      remaining: 7.4s
60:      learn: 0.4231491      total: 3.22s      remaining: 7.33s
61:      learn: 0.4229677      total: 3.27s      remaining: 7.29s
62:      learn: 0.4224597      total: 3.33s      remaining: 7.23s
63:      learn: 0.4222929      total: 3.37s      remaining: 7.16s
64:      learn: 0.4219529      total: 3.41s      remaining: 7.09s
65:      learn: 0.4217976      total: 3.46s      remaining: 7.03s
66:      learn: 0.4215805      total: 3.52s      remaining: 6.98s
67:      learn: 0.4212750      total: 3.55s      remaining: 6.9s
68:      learn: 0.4211881      total: 3.6s       remaining: 6.84s
69:      learn: 0.4210565      total: 3.65s      remaining: 6.78s
70:      learn: 0.4207666      total: 3.72s      remaining: 6.75s
71:      learn: 0.4205177      total: 3.78s      remaining: 6.72s
72:      learn: 0.4202875      total: 3.84s      remaining: 6.69s
73:      learn: 0.4197464      total: 3.91s      remaining: 6.65s
74:      learn: 0.4194263      total: 3.97s      remaining: 6.62s
75:      learn: 0.4194198      total: 4.01s      remaining: 6.54s
76:      learn: 0.4190429      total: 4.06s      remaining: 6.48s
77:      learn: 0.4189073      total: 4.1s       remaining: 6.42s
78:      learn: 0.4187996      total: 4.15s      remaining: 6.36s
79:      learn: 0.4186388      total: 4.2s       remaining: 6.3s
80:      learn: 0.4183611      total: 4.26s      remaining: 6.25s
81:      learn: 0.4180385      total: 4.31s      remaining: 6.21s
82:      learn: 0.4177680      total: 4.38s      remaining: 6.17s
83:      learn: 0.4175791      total: 4.44s      remaining: 6.13s
84:      learn: 0.4172017      total: 4.49s      remaining: 6.07s
85:      learn: 0.4169210      total: 4.55s      remaining: 6.03s
86:      learn: 0.4163777      total: 4.61s      remaining: 5.99s
87:      learn: 0.4162762      total: 4.66s      remaining: 5.93s
88:      learn: 0.4161999      total: 4.72s      remaining: 5.89s
89:      learn: 0.4160866      total: 4.77s      remaining: 5.83s
90:      learn: 0.4159039      total: 4.82s      remaining: 5.78s
91:      learn: 0.4158077      total: 4.87s      remaining: 5.72s
92:      learn: 0.4155897      total: 4.92s      remaining: 5.66s
93:      learn: 0.4152701      total: 4.97s      remaining: 5.61s
94:      learn: 0.4150782      total: 5.03s      remaining: 5.56s
95:      learn: 0.4149083      total: 5.07s      remaining: 5.49s
96:      learn: 0.4147865      total: 5.12s      remaining: 5.43s
97:      learn: 0.4144970      total: 5.17s      remaining: 5.38s
98:      learn: 0.4142744      total: 5.21s      remaining: 5.32s
99:      learn: 0.4140242      total: 5.26s      remaining: 5.26s
100:     learn: 0.4139462      total: 5.31s      remaining: 5.21s
101:     learn: 0.4138877      total: 5.36s      remaining: 5.15s
102:     learn: 0.4137658      total: 5.42s      remaining: 5.1s
103:     learn: 0.4133618      total: 5.47s      remaining: 5.05s
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104:     learn: 0.4133615      total: 5.51s     remaining: 4.99s
105:     learn: 0.4129770      total: 5.56s     remaining: 4.93s
106:     learn: 0.4126021      total: 5.61s     remaining: 4.88s
107:     learn: 0.4125224      total: 5.67s     remaining: 4.83s
108:     learn: 0.4121605      total: 5.73s     remaining: 4.79s
109:     learn: 0.4120289      total: 5.78s     remaining: 4.73s
110:     learn: 0.4117884      total: 5.83s     remaining: 4.67s
111:     learn: 0.4114843      total: 5.88s     remaining: 4.62s
112:     learn: 0.4112234      total: 5.94s     remaining: 4.57s
113:     learn: 0.4111536      total: 6s        remaining: 4.53s
114:     learn: 0.4111045      total: 6.06s     remaining: 4.48s
115:     learn: 0.4105438      total: 6.12s     remaining: 4.43s
116:     learn: 0.4103319      total: 6.17s     remaining: 4.38s
117:     learn: 0.4098852      total: 6.22s     remaining: 4.32s
118:     learn: 0.4093946      total: 6.26s     remaining: 4.26s
119:     learn: 0.4087627      total: 6.31s     remaining: 4.21s
120:     learn: 0.4082431      total: 6.36s     remaining: 4.15s
121:     learn: 0.4081609      total: 6.44s     remaining: 4.12s
122:     learn: 0.4078702      total: 6.51s     remaining: 4.07s
123:     learn: 0.4072931      total: 6.57s     remaining: 4.02s
124:     learn: 0.4069273      total: 6.62s     remaining: 3.97s
125:     learn: 0.4067966      total: 6.67s     remaining: 3.92s
126:     learn: 0.4064365      total: 6.71s     remaining: 3.86s
127:     learn: 0.4062237      total: 6.76s     remaining: 3.8s
128:     learn: 0.4061255      total: 6.81s     remaining: 3.75s
129:     learn: 0.4055360      total: 6.87s     remaining: 3.7s
130:     learn: 0.4053147      total: 6.93s     remaining: 3.65s
131:     learn: 0.4049297      total: 6.99s     remaining: 3.6s
132:     learn: 0.4048599      total: 7.05s     remaining: 3.55s
133:     learn: 0.4045014      total: 7.12s     remaining: 3.51s
134:     learn: 0.4041168      total: 7.17s     remaining: 3.45s
135:     learn: 0.4038952      total: 7.23s     remaining: 3.4s
136:     learn: 0.4037882      total: 7.28s     remaining: 3.35s
137:     learn: 0.4037168      total: 7.33s     remaining: 3.29s
138:     learn: 0.4035608      total: 7.38s     remaining: 3.24s
139:     learn: 0.4029992      total: 7.45s     remaining: 3.19s
140:     learn: 0.4027682      total: 7.51s     remaining: 3.14s
141:     learn: 0.4027452      total: 7.56s     remaining: 3.09s
142:     learn: 0.4024862      total: 7.61s     remaining: 3.03s
143:     learn: 0.4022929      total: 7.67s     remaining: 2.98s
144:     learn: 0.4020418      total: 7.71s     remaining: 2.92s
145:     learn: 0.4019347      total: 7.77s     remaining: 2.87s
146:     learn: 0.4017169      total: 7.82s     remaining: 2.82s
147:     learn: 0.4016601      total: 7.87s     remaining: 2.77s
148:     learn: 0.4013700      total: 7.92s     remaining: 2.71s
149:     learn: 0.4012685      total: 7.98s     remaining: 2.66s
150:     learn: 0.4008760      total: 8.04s     remaining: 2.61s
151:     learn: 0.4007306      total: 8.11s     remaining: 2.56s
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152:    learn: 0.4005400        total: 8.15s     remaining: 2.5s
153:    learn: 0.4004292        total: 8.2s      remaining: 2.45s
154:    learn: 0.4003298        total: 8.25s     remaining: 2.39s
155:    learn: 0.4001889        total: 8.29s     remaining: 2.34s
156:    learn: 0.3998087        total: 8.34s     remaining: 2.28s
157:    learn: 0.3997077        total: 8.42s     remaining: 2.24s
158:    learn: 0.3993433        total: 8.47s     remaining: 2.18s
159:    learn: 0.3992812        total: 8.53s     remaining: 2.13s
160:    learn: 0.3992219        total: 8.58s     remaining: 2.08s
161:    learn: 0.3991711        total: 8.64s     remaining: 2.03s
162:    learn: 0.3990961        total: 8.71s     remaining: 1.98s
163:    learn: 0.3989873        total: 8.76s     remaining: 1.92s
164:    learn: 0.3987315        total: 8.81s     remaining: 1.87s
165:    learn: 0.3985733        total: 8.87s     remaining: 1.82s
166:    learn: 0.3980073        total: 8.93s     remaining: 1.76s
167:    learn: 0.3979446        total: 9.02s     remaining: 1.72s
168:    learn: 0.3975450        total: 9.07s     remaining: 1.66s
169:    learn: 0.3973003        total: 9.13s     remaining: 1.61s
170:    learn: 0.3972232        total: 9.18s     remaining: 1.56s
171:    learn: 0.3970539        total: 9.24s     remaining: 1.5s
172:    learn: 0.3968952        total: 9.29s     remaining: 1.45s
173:    learn: 0.3968366        total: 9.35s     remaining: 1.4s
174:    learn: 0.3968032        total: 9.39s     remaining: 1.34s
175:    learn: 0.3966352        total: 9.44s     remaining: 1.29s
176:    learn: 0.3964646        total: 9.49s     remaining: 1.23s
177:    learn: 0.3964219        total: 9.54s     remaining: 1.18s
178:    learn: 0.3961559        total: 9.59s     remaining: 1.13s
179:    learn: 0.3958172        total: 9.67s     remaining: 1.07s
180:    learn: 0.3954884        total: 9.74s     remaining: 1.02s
181:    learn: 0.3953831        total: 9.8s      remaining: 969ms
182:    learn: 0.3952619        total: 9.85s     remaining: 915ms
183:    learn: 0.3952084        total: 9.93s     remaining: 863ms
184:    learn: 0.3950655        total: 9.99s     remaining: 810ms
185:    learn: 0.3950438        total: 10.1s     remaining: 757ms
186:    learn: 0.3947945        total: 10.1s     remaining: 703ms
187:    learn: 0.3946761        total: 10.2s     remaining: 649ms
188:    learn: 0.3946057        total: 10.2s     remaining: 595ms
189:    learn: 0.3944637        total: 10.3s     remaining: 542ms
190:    learn: 0.3943733        total: 10.3s     remaining: 488ms
191:    learn: 0.3942383        total: 10.4s     remaining: 433ms
192:    learn: 0.3940899        total: 10.5s     remaining: 379ms
193:    learn: 0.3939356        total: 10.5s     remaining: 325ms
194:    learn: 0.3937372        total: 10.6s     remaining: 271ms
195:    learn: 0.3936050        total: 10.6s     remaining: 217ms
196:    learn: 0.3935087        total: 10.7s     remaining: 163ms
197:    learn: 0.3934989        total: 10.7s     remaining: 108ms
198:    learn: 0.3933930        total: 10.8s     remaining: 54.2ms
199:    learn: 0.3933350        total: 10.9s     remaining: 0us
```

```
0:      learn: 0.6314355      total: 54.1ms    remaining: 10.8s
1:      learn: 0.5949795      total: 116ms     remaining: 11.5s
2:      learn: 0.5672924      total: 184ms     remaining: 12.1s
3:      learn: 0.5462896      total: 233ms     remaining: 11.4s
4:      learn: 0.5222154      total: 291ms     remaining: 11.3s
5:      learn: 0.5067950      total: 339ms     remaining: 11s
6:      learn: 0.4953258      total: 386ms     remaining: 10.6s
7:      learn: 0.4848789      total: 438ms     remaining: 10.5s
8:      learn: 0.4778223      total: 500ms     remaining: 10.6s
9:      learn: 0.4711570      total: 550ms     remaining: 10.5s
10:     learn: 0.4656248      total: 601ms     remaining: 10.3s
11:     learn: 0.4594646      total: 645ms     remaining: 10.1s
12:     learn: 0.4565620      total: 709ms     remaining: 10.2s
13:     learn: 0.4555476      total: 725ms     remaining: 9.63s
14:     learn: 0.4526974      total: 783ms     remaining: 9.66s
15:     learn: 0.4506978      total: 831ms     remaining: 9.56s
16:     learn: 0.4486259      total: 899ms     remaining: 9.67s
17:     learn: 0.4471279      total: 951ms     remaining: 9.62s
18:     learn: 0.4452317      total: 1s        remaining: 9.54s
19:     learn: 0.4430966      total: 1.06s     remaining: 9.51s
20:     learn: 0.4423942      total: 1.12s     remaining: 9.54s
21:     learn: 0.4407604      total: 1.17s     remaining: 9.48s
22:     learn: 0.4392355      total: 1.22s     remaining: 9.4s
23:     learn: 0.4383396      total: 1.27s     remaining: 9.34s
24:     learn: 0.4376363      total: 1.32s     remaining: 9.27s
25:     learn: 0.4369819      total: 1.38s     remaining: 9.27s
26:     learn: 0.4363220      total: 1.44s     remaining: 9.23s
27:     learn: 0.4351394      total: 1.49s     remaining: 9.16s
28:     learn: 0.4346106      total: 1.54s     remaining: 9.06s
29:     learn: 0.4337132      total: 1.58s     remaining: 8.96s
30:     learn: 0.4334127      total: 1.63s     remaining: 8.89s
31:     learn: 0.4326915      total: 1.7s      remaining: 8.95s
32:     learn: 0.4323412      total: 1.75s     remaining: 8.85s
33:     learn: 0.4316545      total: 1.8s      remaining: 8.81s
34:     learn: 0.4303090      total: 1.88s     remaining: 8.85s
35:     learn: 0.4302149      total: 1.95s     remaining: 8.87s
36:     learn: 0.4300337      total: 2.01s     remaining: 8.86s
37:     learn: 0.4296353      total: 2.07s     remaining: 8.84s
38:     learn: 0.4292562      total: 2.12s     remaining: 8.77s
39:     learn: 0.4283224      total: 2.18s     remaining: 8.72s
40:     learn: 0.4273550      total: 2.25s     remaining: 8.71s
41:     learn: 0.4271679      total: 2.31s     remaining: 8.69s
42:     learn: 0.4268805      total: 2.36s     remaining: 8.63s
43:     learn: 0.4266444      total: 2.41s     remaining: 8.55s
44:     learn: 0.4260391      total: 2.48s     remaining: 8.53s
45:     learn: 0.4257390      total: 2.53s     remaining: 8.48s
46:     learn: 0.4255300      total: 2.6s      remaining: 8.47s
47:     learn: 0.4253937      total: 2.66s     remaining: 8.43s
```

```
48:     learn: 0.4251336     total: 2.73s     remaining: 8.4s
49:     learn: 0.4247326     total: 2.77s     remaining: 8.31s
50:     learn: 0.4241153     total: 2.81s     remaining: 8.22s
51:     learn: 0.4239705     total: 2.86s     remaining: 8.15s
52:     learn: 0.4234016     total: 2.94s     remaining: 8.17s
53:     learn: 0.4230955     total: 3.02s     remaining: 8.15s
54:     learn: 0.4228037     total: 3.08s     remaining: 8.11s
55:     learn: 0.4225393     total: 3.12s     remaining: 8.03s
56:     learn: 0.4222057     total: 3.19s     remaining: 8s
57:     learn: 0.4220373     total: 3.23s     remaining: 7.92s
58:     learn: 0.4218909     total: 3.29s     remaining: 7.85s
59:     learn: 0.4217659     total: 3.36s     remaining: 7.84s
60:     learn: 0.4217629     total: 3.4s      remaining: 7.74s
61:     learn: 0.4213156     total: 3.48s     remaining: 7.74s
62:     learn: 0.4211427     total: 3.52s     remaining: 7.66s
63:     learn: 0.4211046     total: 3.57s     remaining: 7.58s
64:     learn: 0.4207363     total: 3.63s     remaining: 7.54s
65:     learn: 0.4205908     total: 3.69s     remaining: 7.49s
66:     learn: 0.4202698     total: 3.74s     remaining: 7.42s
67:     learn: 0.4202660     total: 3.77s     remaining: 7.32s
68:     learn: 0.4200247     total: 3.82s     remaining: 7.25s
69:     learn: 0.4198705     total: 3.86s     remaining: 7.17s
70:     learn: 0.4197162     total: 3.91s     remaining: 7.11s
71:     learn: 0.4196315     total: 3.96s     remaining: 7.04s
72:     learn: 0.4192925     total: 4s        remaining: 6.97s
73:     learn: 0.4189621     total: 4.05s     remaining: 6.91s
74:     learn: 0.4186220     total: 4.1s      remaining: 6.83s
75:     learn: 0.4183922     total: 4.18s     remaining: 6.82s
76:     learn: 0.4182423     total: 4.25s     remaining: 6.79s
77:     learn: 0.4181715     total: 4.3s      remaining: 6.73s
78:     learn: 0.4180848     total: 4.36s     remaining: 6.68s
79:     learn: 0.4175756     total: 4.42s     remaining: 6.63s
80:     learn: 0.4172222     total: 4.49s     remaining: 6.59s
81:     learn: 0.4170348     total: 4.54s     remaining: 6.54s
82:     learn: 0.4168703     total: 4.59s     remaining: 6.47s
83:     learn: 0.4167648     total: 4.64s     remaining: 6.41s
84:     learn: 0.4164897     total: 4.69s     remaining: 6.34s
85:     learn: 0.4163353     total: 4.74s     remaining: 6.29s
86:     learn: 0.4159683     total: 4.8s      remaining: 6.24s
87:     learn: 0.4157310     total: 4.86s     remaining: 6.19s
88:     learn: 0.4156548     total: 4.91s     remaining: 6.12s
89:     learn: 0.4156437     total: 4.94s     remaining: 6.04s
90:     learn: 0.4154284     total: 4.98s     remaining: 5.97s
91:     learn: 0.4152585     total: 5.04s     remaining: 5.92s
92:     learn: 0.4149748     total: 5.09s     remaining: 5.85s
93:     learn: 0.4147198     total: 5.14s     remaining: 5.79s
94:     learn: 0.4143833     total: 5.18s     remaining: 5.72s
95:     learn: 0.4141820     total: 5.23s     remaining: 5.67s
```

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96:     learn: 0.4138251     total: 5.31s     remaining: 5.63s
97:     learn: 0.4135402     total: 5.36s     remaining: 5.58s
98:     learn: 0.4132994     total: 5.42s     remaining: 5.53s
99:     learn: 0.4129257     total: 5.49s     remaining: 5.49s
100:    learn: 0.4124537     total: 5.55s     remaining: 5.44s
101:    learn: 0.4123384     total: 5.59s     remaining: 5.38s
102:    learn: 0.4118909     total: 5.65s     remaining: 5.32s
103:    learn: 0.4117162     total: 5.7s      remaining: 5.26s
104:    learn: 0.4113785     total: 5.75s     remaining: 5.21s
105:    learn: 0.4113120     total: 5.81s     remaining: 5.16s
106:    learn: 0.4111403     total: 5.87s     remaining: 5.1s
107:    learn: 0.4109713     total: 5.92s     remaining: 5.04s
108:    learn: 0.4109229     total: 5.97s     remaining: 4.99s
109:    learn: 0.4107302     total: 6.03s     remaining: 4.93s
110:    learn: 0.4100125     total: 6.08s     remaining: 4.87s
111:    learn: 0.4098969     total: 6.12s     remaining: 4.81s
112:    learn: 0.4097647     total: 6.17s     remaining: 4.75s
113:    learn: 0.4094857     total: 6.23s     remaining: 4.7s
114:    learn: 0.4093761     total: 6.29s     remaining: 4.65s
115:    learn: 0.4092736     total: 6.36s     remaining: 4.6s
116:    learn: 0.4090789     total: 6.42s     remaining: 4.56s
117:    learn: 0.4089401     total: 6.47s     remaining: 4.49s
118:    learn: 0.4087363     total: 6.52s     remaining: 4.43s
119:    learn: 0.4083767     total: 6.56s     remaining: 4.37s
120:    learn: 0.4081848     total: 6.62s     remaining: 4.32s
121:    learn: 0.4081252     total: 6.67s     remaining: 4.27s
122:    learn: 0.4079179     total: 6.72s     remaining: 4.21s
123:    learn: 0.4078205     total: 6.77s     remaining: 4.15s
124:    learn: 0.4077203     total: 6.82s     remaining: 4.09s
125:    learn: 0.4075826     total: 6.87s     remaining: 4.03s
126:    learn: 0.4073845     total: 6.93s     remaining: 3.98s
127:    learn: 0.4070756     total: 6.98s     remaining: 3.93s
128:    learn: 0.4069571     total: 7.05s     remaining: 3.88s
129:    learn: 0.4067960     total: 7.11s     remaining: 3.83s
130:    learn: 0.4066464     total: 7.16s     remaining: 3.77s
131:    learn: 0.4064892     total: 7.21s     remaining: 3.71s
132:    learn: 0.4059828     total: 7.27s     remaining: 3.66s
133:    learn: 0.4058356     total: 7.32s     remaining: 3.6s
134:    learn: 0.4055936     total: 7.37s     remaining: 3.55s
135:    learn: 0.4050359     total: 7.42s     remaining: 3.49s
136:    learn: 0.4049010     total: 7.47s     remaining: 3.43s
137:    learn: 0.4047622     total: 7.52s     remaining: 3.38s
138:    learn: 0.4043314     total: 7.6s      remaining: 3.34s
139:    learn: 0.4041398     total: 7.65s     remaining: 3.28s
140:    learn: 0.4040212     total: 7.74s     remaining: 3.24s
141:    learn: 0.4039098     total: 7.79s     remaining: 3.18s
142:    learn: 0.4038927     total: 7.84s     remaining: 3.12s
143:    learn: 0.4036193     total: 7.9s      remaining: 3.07s
```

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144:    learn: 0.4034876    total: 7.96s    remaining: 3.02s
145:    learn: 0.4030672    total: 8.01s    remaining: 2.96s
146:    learn: 0.4028973    total: 8.06s    remaining: 2.9s
147:    learn: 0.4026438    total: 8.14s    remaining: 2.86s
148:    learn: 0.4025482    total: 8.2s     remaining: 2.81s
149:    learn: 0.4023419    total: 8.28s    remaining: 2.76s
150:    learn: 0.4021798    total: 8.34s    remaining: 2.71s
151:    learn: 0.4021338    total: 8.41s    remaining: 2.66s
152:    learn: 0.4020131    total: 8.47s    remaining: 2.6s
153:    learn: 0.4019091    total: 8.52s    remaining: 2.54s
154:    learn: 0.4018020    total: 8.58s    remaining: 2.49s
155:    learn: 0.4016866    total: 8.62s    remaining: 2.43s
156:    learn: 0.4016517    total: 8.68s    remaining: 2.38s
157:    learn: 0.4014142    total: 8.73s    remaining: 2.32s
158:    learn: 0.4012260    total: 8.78s    remaining: 2.26s
159:    learn: 0.4011925    total: 8.82s    remaining: 2.21s
160:    learn: 0.4011218    total: 8.89s    remaining: 2.15s
161:    learn: 0.4010483    total: 8.95s    remaining: 2.1s
162:    learn: 0.4009398    total: 9s       remaining: 2.04s
163:    learn: 0.4008129    total: 9.04s    remaining: 1.98s
164:    learn: 0.4007441    total: 9.09s    remaining: 1.93s
165:    learn: 0.4007112    total: 9.13s    remaining: 1.87s
166:    learn: 0.4004551    total: 9.18s    remaining: 1.81s
167:    learn: 0.4004044    total: 9.22s    remaining: 1.76s
168:    learn: 0.4001874    total: 9.28s    remaining: 1.7s
169:    learn: 0.4000322    total: 9.34s    remaining: 1.65s
170:    learn: 0.3999031    total: 9.39s    remaining: 1.59s
171:    learn: 0.3998208    total: 9.44s    remaining: 1.54s
172:    learn: 0.3996803    total: 9.52s    remaining: 1.49s
173:    learn: 0.3995936    total: 9.58s    remaining: 1.43s
174:    learn: 0.3994478    total: 9.64s    remaining: 1.38s
175:    learn: 0.3992702    total: 9.69s    remaining: 1.32s
176:    learn: 0.3992018    total: 9.74s    remaining: 1.27s
177:    learn: 0.3988461    total: 9.8s     remaining: 1.21s
178:    learn: 0.3987181    total: 9.88s    remaining: 1.16s
179:    learn: 0.3983593    total: 9.94s    remaining: 1.1s
180:    learn: 0.3981264    total: 9.99s    remaining: 1.05s
181:    learn: 0.3980594    total: 10s      remaining: 993ms
182:    learn: 0.3978768    total: 10.1s    remaining: 938ms
183:    learn: 0.3977842    total: 10.1s    remaining: 882ms
184:    learn: 0.3975673    total: 10.2s    remaining: 826ms
185:    learn: 0.3973184    total: 10.3s    remaining: 772ms
186:    learn: 0.3970827    total: 10.3s    remaining: 716ms
187:    learn: 0.3969832    total: 10.3s    remaining: 661ms
188:    learn: 0.3968706    total: 10.4s    remaining: 606ms
189:    learn: 0.3966255    total: 10.5s    remaining: 551ms
190:    learn: 0.3965262    total: 10.5s    remaining: 496ms
191:    learn: 0.3964779    total: 10.6s    remaining: 441ms
```

```
192:     learn: 0.3963297      total: 10.7s    remaining: 387ms
193:     learn: 0.3961836      total: 10.7s    remaining: 331ms
194:     learn: 0.3960398      total: 10.8s    remaining: 277ms
195:     learn: 0.3959590      total: 10.9s    remaining: 221ms
196:     learn: 0.3958536      total: 10.9s    remaining: 166ms
197:     learn: 0.3956443      total: 11s      remaining: 111ms
198:     learn: 0.3955766      total: 11s      remaining: 55.4ms
199:     learn: 0.3955195      total: 11.1s    remaining: 0us
```

Mean train f1-score of data (CV) 14 is : 0.8227615716108536
Mean test f1-score of data (CV) 14 is : 0.8082128910507347

Shape of data 15 is :
(27303, 10)
Distribution of 15 is :
Yes   14102
No   13201
Name: TIMELY_RESPONSE, dtype: int64

<IPython.core.display.HTML object>

MetricVisualizer(layout=Layout(align_self='stretch', height='500px'))

Train f1_score [Yes]: for data 15 is : 0.8147165259348613
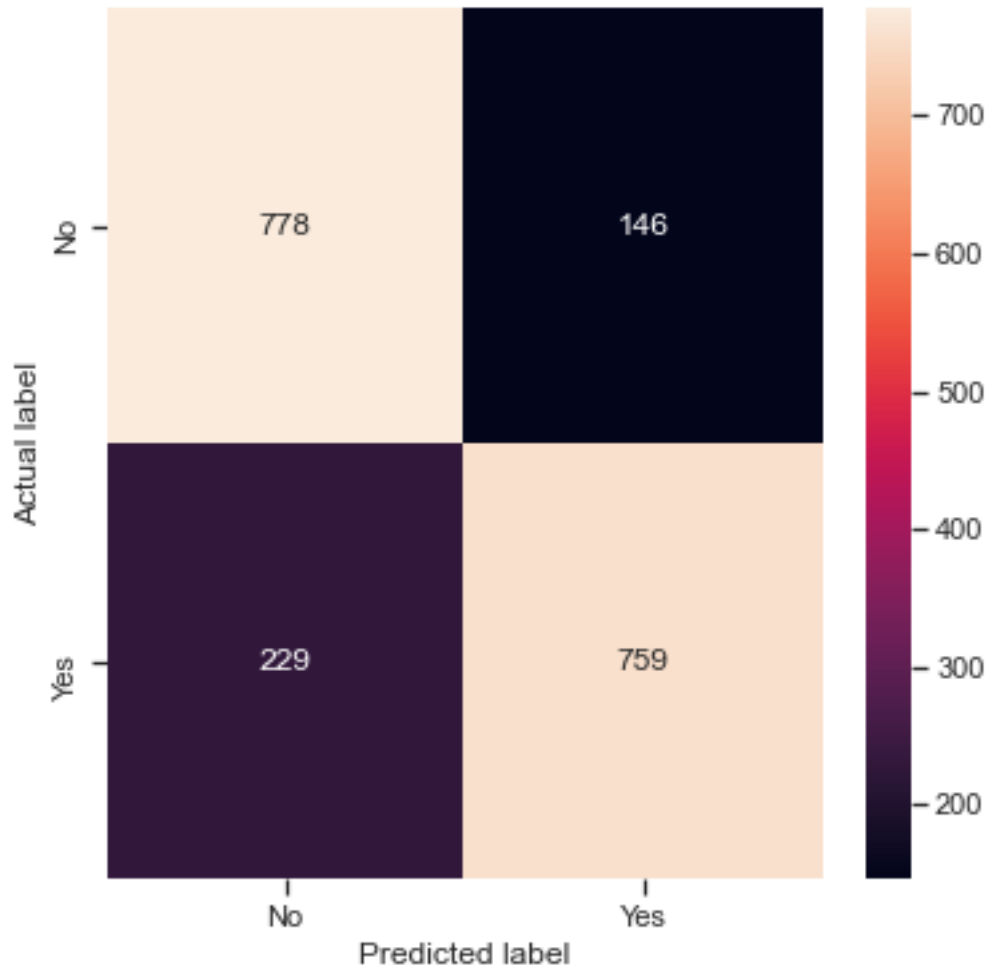Train f1_score [No]: for data 15 is : 0.8221673355974067

	precision	recall	f1-score	support
No	0.77	0.84	0.81	924
Yes	0.84	0.77	0.80	988
accuracy			0.80	1912
macro avg	0.81	0.81	0.80	1912
weighted avg	0.81	0.80	0.80	1912

```
Cross validation result for data 15 is :
0:      learn: 0.6351991      total: 52.4ms    remaining: 10.4s
1:      learn: 0.5958077      total: 114ms     remaining: 11.2s
2:      learn: 0.5639694      total: 162ms     remaining: 10.6s
3:      learn: 0.5454793      total: 238ms     remaining: 11.7s
4:      learn: 0.5278574      total: 286ms     remaining: 11.1s
5:      learn: 0.5149040      total: 329ms     remaining: 10.6s
6:      learn: 0.5036456      total: 374ms     remaining: 10.3s
7:      learn: 0.4951901      total: 422ms     remaining: 10.1s
8:      learn: 0.4843349      total: 471ms     remaining: 9.98s
9:      learn: 0.4791368      total: 529ms     remaining: 10.1s
10:     learn: 0.4737859      total: 579ms     remaining: 9.95s
11:     learn: 0.4677908      total: 642ms     remaining: 10.1s
12:     learn: 0.4651357      total: 692ms     remaining: 9.95s
13:     learn: 0.4625140      total: 781ms     remaining: 10.4s
14:     learn: 0.4603049      total: 838ms     remaining: 10.3s
15:     learn: 0.4571468      total: 891ms     remaining: 10.3s
```

```
16:     learn: 0.4553153      total: 941ms    remaining: 10.1s
17:     learn: 0.4540789      total: 1000ms   remaining: 10.1s
18:     learn: 0.4528774      total: 1.07s    remaining: 10.2s
19:     learn: 0.4512594      total: 1.12s    remaining: 10.1s
20:     learn: 0.4499535      total: 1.17s    remaining: 10s
21:     learn: 0.4484998      total: 1.22s    remaining: 9.88s
22:     learn: 0.4473467      total: 1.28s    remaining: 9.88s
23:     learn: 0.4469474      total: 1.31s    remaining: 9.6s
24:     learn: 0.4462078      total: 1.35s    remaining: 9.49s
25:     learn: 0.4457103      total: 1.4s     remaining: 9.4s
26:     learn: 0.4441763      total: 1.46s    remaining: 9.35s
27:     learn: 0.4437154      total: 1.5s     remaining: 9.23s
28:     learn: 0.4430648      total: 1.55s    remaining: 9.16s
29:     learn: 0.4426327      total: 1.61s    remaining: 9.13s
30:     learn: 0.4422581      total: 1.68s    remaining: 9.13s
31:     learn: 0.4416085      total: 1.73s    remaining: 9.07s
32:     learn: 0.4411258      total: 1.78s    remaining: 9.03s
33:     learn: 0.4405892      total: 1.83s    remaining: 8.96s
34:     learn: 0.4394470      total: 1.9s     remaining: 8.94s
35:     learn: 0.4385434      total: 1.97s    remaining: 9s
36:     learn: 0.4379643      total: 2.04s    remaining: 9.01s
37:     learn: 0.4377988      total: 2.1s     remaining: 8.95s
38:     learn: 0.4366591      total: 2.15s    remaining: 8.9s
39:     learn: 0.4362712      total: 2.21s    remaining: 8.84s
40:     learn: 0.4355274      total: 2.27s    remaining: 8.8s
41:     learn: 0.4346700      total: 2.32s    remaining: 8.74s
42:     learn: 0.4345085      total: 2.38s    remaining: 8.7s
43:     learn: 0.4342236      total: 2.45s    remaining: 8.69s
44:     learn: 0.4340401      total: 2.5s     remaining: 8.62s
45:     learn: 0.4339625      total: 2.58s    remaining: 8.64s
46:     learn: 0.4335557      total: 2.64s    remaining: 8.6s
47:     learn: 0.4333864      total: 2.69s    remaining: 8.52s
48:     learn: 0.4333366      total: 2.72s    remaining: 8.39s
49:     learn: 0.4323757      total: 2.77s    remaining: 8.33s
50:     learn: 0.4322685      total: 2.85s    remaining: 8.32s
51:     learn: 0.4315864      total: 2.93s    remaining: 8.33s
52:     learn: 0.4313951      total: 2.98s    remaining: 8.26s
53:     learn: 0.4310508      total: 3.03s    remaining: 8.2s
54:     learn: 0.4308646      total: 3.08s    remaining: 8.13s
55:     learn: 0.4304131      total: 3.15s    remaining: 8.1s
56:     learn: 0.4301709      total: 3.2s     remaining: 8.03s
57:     learn: 0.4297905      total: 3.26s    remaining: 7.97s
58:     learn: 0.4295851      total: 3.33s    remaining: 7.96s
59:     learn: 0.4292324      total: 3.41s    remaining: 7.97s
60:     learn: 0.4290577      total: 3.48s    remaining: 7.93s
61:     learn: 0.4287737      total: 3.53s    remaining: 7.85s
62:     learn: 0.4287737      total: 3.54s    remaining: 7.7s
63:     learn: 0.4281881      total: 3.6s     remaining: 7.65s
```

```
64:     learn: 0.4277982     total: 3.65s     remaining: 7.59s
65:     learn: 0.4275372     total: 3.73s     remaining: 7.57s
66:     learn: 0.4272292     total: 3.78s     remaining: 7.5s
67:     learn: 0.4269297     total: 3.83s     remaining: 7.43s
68:     learn: 0.4267714     total: 3.9s      remaining: 7.39s
69:     learn: 0.4264953     total: 3.96s     remaining: 7.35s
70:     learn: 0.4262506     total: 4.02s     remaining: 7.31s
71:     learn: 0.4261284     total: 4.08s     remaining: 7.26s
72:     learn: 0.4253213     total: 4.14s     remaining: 7.21s
73:     learn: 0.4253213     total: 4.16s     remaining: 7.09s
74:     learn: 0.4253083     total: 4.18s     remaining: 6.97s
75:     learn: 0.4249417     total: 4.25s     remaining: 6.93s
76:     learn: 0.4248325     total: 4.3s      remaining: 6.87s
77:     learn: 0.4245798     total: 4.35s     remaining: 6.8s
78:     learn: 0.4241564     total: 4.41s     remaining: 6.75s
79:     learn: 0.4240128     total: 4.47s     remaining: 6.71s
80:     learn: 0.4237437     total: 4.52s     remaining: 6.64s
81:     learn: 0.4235972     total: 4.57s     remaining: 6.58s
82:     learn: 0.4234392     total: 4.63s     remaining: 6.53s
83:     learn: 0.4233175     total: 4.68s     remaining: 6.46s
84:     learn: 0.4229111     total: 4.73s     remaining: 6.41s
85:     learn: 0.4227712     total: 4.81s     remaining: 6.38s
86:     learn: 0.4225352     total: 4.86s     remaining: 6.31s
87:     learn: 0.4222495     total: 4.9s      remaining: 6.24s
88:     learn: 0.4219134     total: 4.96s     remaining: 6.18s
89:     learn: 0.4217670     total: 5.03s     remaining: 6.15s
90:     learn: 0.4211147     total: 5.09s     remaining: 6.1s
91:     learn: 0.4208916     total: 5.15s     remaining: 6.05s
92:     learn: 0.4207794     total: 5.2s      remaining: 5.99s
93:     learn: 0.4206118     total: 5.26s     remaining: 5.94s
94:     learn: 0.4204179     total: 5.32s     remaining: 5.88s
95:     learn: 0.4202390     total: 5.38s     remaining: 5.82s
96:     learn: 0.4197956     total: 5.45s     remaining: 5.78s
97:     learn: 0.4195458     total: 5.51s     remaining: 5.73s
98:     learn: 0.4192604     total: 5.56s     remaining: 5.67s
99:     learn: 0.4188595     total: 5.62s     remaining: 5.62s
100:    learn: 0.4187655     total: 5.68s     remaining: 5.57s
101:    learn: 0.4183873     total: 5.73s     remaining: 5.5s
102:    learn: 0.4181832     total: 5.79s     remaining: 5.45s
103:    learn: 0.4180624     total: 5.83s     remaining: 5.39s
104:    learn: 0.4178584     total: 5.89s     remaining: 5.33s
105:    learn: 0.4172712     total: 5.96s     remaining: 5.28s
106:    learn: 0.4170719     total: 6.01s     remaining: 5.22s
107:    learn: 0.4167734     total: 6.06s     remaining: 5.16s
108:    learn: 0.4163027     total: 6.13s     remaining: 5.12s
109:    learn: 0.4156457     total: 6.2s      remaining: 5.07s
110:    learn: 0.4155478     total: 6.25s     remaining: 5.01s
111:    learn: 0.4150593     total: 6.33s     remaining: 4.98s
```

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112:    learn: 0.4142911    total: 6.38s    remaining: 4.91s
113:    learn: 0.4140511    total: 6.44s    remaining: 4.86s
114:    learn: 0.4140141    total: 6.5s     remaining: 4.8s
115:    learn: 0.4134877    total: 6.59s    remaining: 4.77s
116:    learn: 0.4133646    total: 6.64s    remaining: 4.71s
117:    learn: 0.4132991    total: 6.72s    remaining: 4.67s
118:    learn: 0.4127833    total: 6.78s    remaining: 4.61s
119:    learn: 0.4125922    total: 6.83s    remaining: 4.55s
120:    learn: 0.4123561    total: 6.88s    remaining: 4.49s
121:    learn: 0.4121159    total: 6.95s    remaining: 4.44s
122:    learn: 0.4120114    total: 7.01s    remaining: 4.39s
123:    learn: 0.4116392    total: 7.1s     remaining: 4.35s
124:    learn: 0.4113401    total: 7.16s    remaining: 4.29s
125:    learn: 0.4110309    total: 7.21s    remaining: 4.23s
126:    learn: 0.4108804    total: 7.27s    remaining: 4.18s
127:    learn: 0.4106881    total: 7.36s    remaining: 4.14s
128:    learn: 0.4105128    total: 7.42s    remaining: 4.09s
129:    learn: 0.4101692    total: 7.48s    remaining: 4.03s
130:    learn: 0.4097407    total: 7.59s    remaining: 4s
131:    learn: 0.4095195    total: 7.64s    remaining: 3.94s
132:    learn: 0.4093035    total: 7.69s    remaining: 3.87s
133:    learn: 0.4088030    total: 7.74s    remaining: 3.81s
134:    learn: 0.4087243    total: 7.8s     remaining: 3.76s
135:    learn: 0.4085621    total: 7.85s    remaining: 3.69s
136:    learn: 0.4082030    total: 7.92s    remaining: 3.64s
137:    learn: 0.4079624    total: 7.98s    remaining: 3.58s
138:    learn: 0.4076946    total: 8.03s    remaining: 3.52s
139:    learn: 0.4073323    total: 8.08s    remaining: 3.46s
140:    learn: 0.4070070    total: 8.14s    remaining: 3.4s
141:    learn: 0.4068822    total: 8.19s    remaining: 3.34s
142:    learn: 0.4066933    total: 8.24s    remaining: 3.28s
143:    learn: 0.4064223    total: 8.3s     remaining: 3.23s
144:    learn: 0.4062306    total: 8.35s    remaining: 3.17s
145:    learn: 0.4061657    total: 8.41s    remaining: 3.11s
146:    learn: 0.4060620    total: 8.46s    remaining: 3.05s
147:    learn: 0.4059010    total: 8.51s    remaining: 2.99s
148:    learn: 0.4058789    total: 8.57s    remaining: 2.94s
149:    learn: 0.4058222    total: 8.64s    remaining: 2.88s
150:    learn: 0.4056486    total: 8.73s    remaining: 2.83s
151:    learn: 0.4055253    total: 8.79s    remaining: 2.77s
152:    learn: 0.4052752    total: 8.84s    remaining: 2.72s
153:    learn: 0.4051156    total: 8.9s     remaining: 2.66s
154:    learn: 0.4047889    total: 8.95s    remaining: 2.6s
155:    learn: 0.4047206    total: 9.01s    remaining: 2.54s
156:    learn: 0.4045471    total: 9.07s    remaining: 2.48s
157:    learn: 0.4044265    total: 9.13s    remaining: 2.43s
158:    learn: 0.4041683    total: 9.19s    remaining: 2.37s
159:    learn: 0.4040338    total: 9.25s    remaining: 2.31s
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160:	learn: 0.4038700	total: 9.32s	remaining: 2.26s
161:	learn: 0.4037111	total: 9.37s	remaining: 2.2s
162:	learn: 0.4035211	total: 9.43s	remaining: 2.14s
163:	learn: 0.4034361	total: 9.49s	remaining: 2.08s
164:	learn: 0.4032064	total: 9.55s	remaining: 2.02s
165:	learn: 0.4029673	total: 9.61s	remaining: 1.97s
166:	learn: 0.4026723	total: 9.67s	remaining: 1.91s
167:	learn: 0.4025909	total: 9.73s	remaining: 1.85s
168:	learn: 0.4024997	total: 9.79s	remaining: 1.79s
169:	learn: 0.4024052	total: 9.84s	remaining: 1.74s
170:	learn: 0.4023969	total: 9.89s	remaining: 1.68s
171:	learn: 0.4022469	total: 9.95s	remaining: 1.62s
172:	learn: 0.4021138	total: 10s	remaining: 1.56s
173:	learn: 0.4019948	total: 10.1s	remaining: 1.5s
174:	learn: 0.4019146	total: 10.1s	remaining: 1.45s
175:	learn: 0.4017873	total: 10.2s	remaining: 1.39s
176:	learn: 0.4017150	total: 10.2s	remaining: 1.33s
177:	learn: 0.4015581	total: 10.3s	remaining: 1.27s
178:	learn: 0.4015122	total: 10.3s	remaining: 1.21s
179:	learn: 0.4014340	total: 10.4s	remaining: 1.16s
180:	learn: 0.4013246	total: 10.4s	remaining: 1.1s
181:	learn: 0.4012789	total: 10.5s	remaining: 1.04s
182:	learn: 0.4012089	total: 10.6s	remaining: 982ms
183:	learn: 0.4009156	total: 10.6s	remaining: 924ms
184:	learn: 0.4007976	total: 10.7s	remaining: 865ms
185:	learn: 0.4005828	total: 10.7s	remaining: 809ms
186:	learn: 0.4003147	total: 10.8s	remaining: 751ms
187:	learn: 0.4001874	total: 10.8s	remaining: 693ms
188:	learn: 0.4000087	total: 10.9s	remaining: 635ms
189:	learn: 0.3999300	total: 11s	remaining: 578ms
190:	learn: 0.3997465	total: 11s	remaining: 519ms
191:	learn: 0.3994664	total: 11.1s	remaining: 462ms
192:	learn: 0.3991789	total: 11.1s	remaining: 404ms
193:	learn: 0.3990960	total: 11.2s	remaining: 346ms
194:	learn: 0.3990642	total: 11.3s	remaining: 288ms
195:	learn: 0.3987860	total: 11.3s	remaining: 231ms
196:	learn: 0.3986314	total: 11.4s	remaining: 173ms
197:	learn: 0.3983720	total: 11.4s	remaining: 115ms
198:	learn: 0.3981930	total: 11.5s	remaining: 57.7ms
199:	learn: 0.3981189	total: 11.5s	remaining: 0us
0:	learn: 0.6319060	total: 50.9ms	remaining: 10.1s
1:	learn: 0.5977213	total: 113ms	remaining: 11.2s
2:	learn: 0.5628863	total: 166ms	remaining: 10.9s
3:	learn: 0.5449644	total: 226ms	remaining: 11.1s
4:	learn: 0.5237700	total: 288ms	remaining: 11.2s
5:	learn: 0.5093931	total: 335ms	remaining: 10.8s
6:	learn: 0.4986176	total: 383ms	remaining: 10.6s
7:	learn: 0.4864698	total: 436ms	remaining: 10.5s
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8:        learn: 0.4798104      total: 489ms     remaining: 10.4s
9:        learn: 0.4747270      total: 544ms     remaining: 10.3s
10:       learn: 0.4691417      total: 595ms     remaining: 10.2s
11:       learn: 0.4657679      total: 650ms     remaining: 10.2s
12:       learn: 0.4640744      total: 695ms     remaining: 9.99s
13:       learn: 0.4610825      total: 744ms     remaining: 9.89s
14:       learn: 0.4573392      total: 801ms     remaining: 9.88s
15:       learn: 0.4539206      total: 854ms     remaining: 9.82s
16:       learn: 0.4513078      total: 926ms     remaining: 9.97s
17:       learn: 0.4490810      total: 983ms     remaining: 9.94s
18:       learn: 0.4479464      total: 1.04s     remaining: 9.9s
19:       learn: 0.4468775      total: 1.09s     remaining: 9.79s
20:       learn: 0.4456854      total: 1.14s     remaining: 9.73s
21:       learn: 0.4439341      total: 1.19s     remaining: 9.65s
22:       learn: 0.4429553      total: 1.25s     remaining: 9.66s
23:       learn: 0.4414904      total: 1.31s     remaining: 9.62s
24:       learn: 0.4409536      total: 1.37s     remaining: 9.59s
25:       learn: 0.4402648      total: 1.42s     remaining: 9.52s
26:       learn: 0.4397261      total: 1.5s      remaining: 9.61s
27:       learn: 0.4392400      total: 1.55s     remaining: 9.51s
28:       learn: 0.4383590      total: 1.61s     remaining: 9.47s
29:       learn: 0.4378950      total: 1.66s     remaining: 9.39s
30:       learn: 0.4374185      total: 1.71s     remaining: 9.31s
31:       learn: 0.4369672      total: 1.76s     remaining: 9.25s
32:       learn: 0.4357264      total: 1.81s     remaining: 9.19s
33:       learn: 0.4350096      total: 1.87s     remaining: 9.15s
34:       learn: 0.4346699      total: 1.94s     remaining: 9.12s
35:       learn: 0.4340911      total: 1.99s     remaining: 9.05s
36:       learn: 0.4339230      total: 2.04s     remaining: 8.98s
37:       learn: 0.4336922      total: 2.1s      remaining: 8.94s
38:       learn: 0.4332786      total: 2.16s     remaining: 8.91s
39:       learn: 0.4329964      total: 2.21s     remaining: 8.84s
40:       learn: 0.4329555      total: 2.24s     remaining: 8.67s
41:       learn: 0.4320815      total: 2.29s     remaining: 8.62s
42:       learn: 0.4318773      total: 2.35s     remaining: 8.56s
43:       learn: 0.4317235      total: 2.4s      remaining: 8.51s
44:       learn: 0.4314449      total: 2.46s     remaining: 8.49s
45:       learn: 0.4311298      total: 2.51s     remaining: 8.42s
46:       learn: 0.4302443      total: 2.57s     remaining: 8.36s
47:       learn: 0.4294801      total: 2.63s     remaining: 8.32s
48:       learn: 0.4288450      total: 2.68s     remaining: 8.26s
49:       learn: 0.4282506      total: 2.74s     remaining: 8.22s
50:       learn: 0.4281752      total: 2.8s      remaining: 8.19s
51:       learn: 0.4277221      total: 2.85s     remaining: 8.11s
52:       learn: 0.4273973      total: 2.92s     remaining: 8.1s
53:       learn: 0.4270764      total: 2.98s     remaining: 8.06s
54:       learn: 0.4269003      total: 3.04s     remaining: 8.01s
55:       learn: 0.4265679      total: 3.09s     remaining: 7.95s
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 56:     learn: 0.4263603     total: 3.15s     remaining: 7.89s
 57:     learn: 0.4260041     total: 3.2s      remaining: 7.84s
 58:     learn: 0.4256787     total: 3.25s     remaining: 7.78s
 59:     learn: 0.4256117     total: 3.31s     remaining: 7.74s
 60:     learn: 0.4254145     total: 3.38s     remaining: 7.69s
 61:     learn: 0.4246523     total: 3.43s     remaining: 7.63s
 62:     learn: 0.4244612     total: 3.48s     remaining: 7.56s
 63:     learn: 0.4243765     total: 3.53s     remaining: 7.49s
 64:     learn: 0.4242421     total: 3.58s     remaining: 7.43s
 65:     learn: 0.4241185     total: 3.63s     remaining: 7.37s
 66:     learn: 0.4238799     total: 3.68s     remaining: 7.31s
 67:     learn: 0.4234955     total: 3.75s     remaining: 7.27s
 68:     learn: 0.4232742     total: 3.81s     remaining: 7.24s
 69:     learn: 0.4230409     total: 3.86s     remaining: 7.17s
 70:     learn: 0.4228472     total: 3.92s     remaining: 7.12s
 71:     learn: 0.4225413     total: 3.97s     remaining: 7.05s
 72:     learn: 0.4222343     total: 4.03s     remaining: 7.02s
 73:     learn: 0.4221118     total: 4.09s     remaining: 6.96s
 74:     learn: 0.4216943     total: 4.14s     remaining: 6.91s
 75:     learn: 0.4213390     total: 4.2s      remaining: 6.84s
 76:     learn: 0.4210010     total: 4.26s     remaining: 6.8s
 77:     learn: 0.4208223     total: 4.31s     remaining: 6.75s
 78:     learn: 0.4207634     total: 4.37s     remaining: 6.69s
 79:     learn: 0.4205115     total: 4.42s     remaining: 6.64s
 80:     learn: 0.4202497     total: 4.51s     remaining: 6.62s
 81:     learn: 0.4198906     total: 4.56s     remaining: 6.57s
 82:     learn: 0.4197944     total: 4.62s     remaining: 6.51s
 83:     learn: 0.4197880     total: 4.64s     remaining: 6.41s
 84:     learn: 0.4193671     total: 4.71s     remaining: 6.38s
 85:     learn: 0.4189646     total: 4.77s     remaining: 6.32s
 86:     learn: 0.4188589     total: 4.84s     remaining: 6.28s
 87:     learn: 0.4184854     total: 4.91s     remaining: 6.24s
 88:     learn: 0.4182935     total: 4.96s     remaining: 6.18s
 89:     learn: 0.4181414     total: 5.02s     remaining: 6.13s
 90:     learn: 0.4181380     total: 5.04s     remaining: 6.04s
 91:     learn: 0.4179825     total: 5.09s     remaining: 5.98s
 92:     learn: 0.4177688     total: 5.15s     remaining: 5.92s
 93:     learn: 0.4172931     total: 5.2s      remaining: 5.87s
 94:     learn: 0.4169782     total: 5.26s     remaining: 5.81s
 95:     learn: 0.4162674     total: 5.32s     remaining: 5.76s
 96:     learn: 0.4158595     total: 5.38s     remaining: 5.71s
 97:     learn: 0.4157161     total: 5.43s     remaining: 5.66s
 98:     learn: 0.4156366     total: 5.5s      remaining: 5.61s
 99:     learn: 0.4154975     total: 5.54s     remaining: 5.54s
100:     learn: 0.4152858     total: 5.6s      remaining: 5.49s
101:     learn: 0.4152451     total: 5.65s     remaining: 5.43s
102:     learn: 0.4151859     total: 5.7s      remaining: 5.37s
103:     learn: 0.4146196     total: 5.77s     remaining: 5.33s
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104:    learn: 0.4140779        total: 5.83s    remaining: 5.27s
105:    learn: 0.4137785        total: 5.88s    remaining: 5.21s
106:    learn: 0.4136410        total: 5.98s    remaining: 5.2s
107:    learn: 0.4134151        total: 6.04s    remaining: 5.15s
108:    learn: 0.4132238        total: 6.1s     remaining: 5.09s
109:    learn: 0.4130066        total: 6.15s    remaining: 5.03s
110:    learn: 0.4129333        total: 6.2s     remaining: 4.97s
111:    learn: 0.4127149        total: 6.27s    remaining: 4.93s
112:    learn: 0.4125787        total: 6.33s    remaining: 4.87s
113:    learn: 0.4123162        total: 6.37s    remaining: 4.81s
114:    learn: 0.4117472        total: 6.43s    remaining: 4.75s
115:    learn: 0.4115495        total: 6.48s    remaining: 4.69s
116:    learn: 0.4112342        total: 6.54s    remaining: 4.64s
117:    learn: 0.4110829        total: 6.61s    remaining: 4.59s
118:    learn: 0.4108631        total: 6.67s    remaining: 4.54s
119:    learn: 0.4106866        total: 6.74s    remaining: 4.49s
120:    learn: 0.4103818        total: 6.79s    remaining: 4.43s
121:    learn: 0.4100140        total: 6.86s    remaining: 4.38s
122:    learn: 0.4096992        total: 6.91s    remaining: 4.33s
123:    learn: 0.4090943        total: 6.96s    remaining: 4.27s
124:    learn: 0.4089619        total: 7.03s    remaining: 4.22s
125:    learn: 0.4088030        total: 7.08s    remaining: 4.16s
126:    learn: 0.4086341        total: 7.14s    remaining: 4.1s
127:    learn: 0.4083838        total: 7.19s    remaining: 4.04s
128:    learn: 0.4082875        total: 7.26s    remaining: 3.99s
129:    learn: 0.4080946        total: 7.33s    remaining: 3.94s
130:    learn: 0.4080664        total: 7.38s    remaining: 3.89s
131:    learn: 0.4079572        total: 7.44s    remaining: 3.83s
132:    learn: 0.4076869        total: 7.5s     remaining: 3.78s
133:    learn: 0.4073219        total: 7.55s    remaining: 3.72s
134:    learn: 0.4070069        total: 7.61s    remaining: 3.66s
135:    learn: 0.4067732        total: 7.66s    remaining: 3.6s
136:    learn: 0.4064832        total: 7.72s    remaining: 3.55s
137:    learn: 0.4063037        total: 7.78s    remaining: 3.5s
138:    learn: 0.4060649        total: 7.84s    remaining: 3.44s
139:    learn: 0.4059247        total: 7.9s     remaining: 3.38s
140:    learn: 0.4057819        total: 7.95s    remaining: 3.33s
141:    learn: 0.4056510        total: 8.01s    remaining: 3.27s
142:    learn: 0.4054836        total: 8.08s    remaining: 3.22s
143:    learn: 0.4054057        total: 8.13s    remaining: 3.16s
144:    learn: 0.4052197        total: 8.21s    remaining: 3.11s
145:    learn: 0.4049108        total: 8.27s    remaining: 3.06s
146:    learn: 0.4047289        total: 8.33s    remaining: 3s
147:    learn: 0.4046410        total: 8.4s     remaining: 2.95s
148:    learn: 0.4044666        total: 8.45s    remaining: 2.89s
149:    learn: 0.4043840        total: 8.51s    remaining: 2.84s
150:    learn: 0.4042455        total: 8.57s    remaining: 2.78s
151:    learn: 0.4039185        total: 8.63s    remaining: 2.73s
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152:    learn: 0.4036697        total: 8.69s    remaining: 2.67s
153:    learn: 0.4034917        total: 8.77s    remaining: 2.62s
154:    learn: 0.4034121        total: 8.83s    remaining: 2.56s
155:    learn: 0.4032678        total: 8.88s    remaining: 2.5s
156:    learn: 0.4027145        total: 8.95s    remaining: 2.45s
157:    learn: 0.4024050        total: 9.02s    remaining: 2.4s
158:    learn: 0.4022130        total: 9.09s    remaining: 2.34s
159:    learn: 0.4020967        total: 9.15s    remaining: 2.29s
160:    learn: 0.4018765        total: 9.21s    remaining: 2.23s
161:    learn: 0.4017620        total: 9.28s    remaining: 2.18s
162:    learn: 0.4015876        total: 9.34s    remaining: 2.12s
163:    learn: 0.4013508        total: 9.4s     remaining: 2.06s
164:    learn: 0.4012762        total: 9.49s    remaining: 2.01s
165:    learn: 0.4011689        total: 9.53s    remaining: 1.95s
166:    learn: 0.4010187        total: 9.59s    remaining: 1.89s
167:    learn: 0.4009334        total: 9.63s    remaining: 1.83s
168:    learn: 0.4006170        total: 9.69s    remaining: 1.78s
169:    learn: 0.4005790        total: 9.77s    remaining: 1.72s
170:    learn: 0.4003695        total: 9.83s    remaining: 1.67s
171:    learn: 0.4002492        total: 9.89s    remaining: 1.61s
172:    learn: 0.4000750        total: 9.95s    remaining: 1.55s
173:    learn: 0.3999466        total: 10s      remaining: 1.5s
174:    learn: 0.3998082        total: 10.1s    remaining: 1.44s
175:    learn: 0.3996945        total: 10.1s    remaining: 1.38s
176:    learn: 0.3996546        total: 10.2s    remaining: 1.32s
177:    learn: 0.3994930        total: 10.2s    remaining: 1.26s
178:    learn: 0.3994170        total: 10.3s    remaining: 1.21s
179:    learn: 0.3992470        total: 10.3s    remaining: 1.15s
180:    learn: 0.3988122        total: 10.4s    remaining: 1.09s
181:    learn: 0.3986752        total: 10.5s    remaining: 1.03s
182:    learn: 0.3986081        total: 10.5s    remaining: 977ms
183:    learn: 0.3984483        total: 10.6s    remaining: 921ms
184:    learn: 0.3983813        total: 10.7s    remaining: 866ms
185:    learn: 0.3983213        total: 10.7s    remaining: 807ms
186:    learn: 0.3982032        total: 10.8s    remaining: 750ms
187:    learn: 0.3981278        total: 10.9s    remaining: 693ms
188:    learn: 0.3980297        total: 10.9s    remaining: 636ms
189:    learn: 0.3975918        total: 11s      remaining: 579ms
190:    learn: 0.3973846        total: 11.1s    remaining: 521ms
191:    learn: 0.3972282        total: 11.1s    remaining: 463ms
192:    learn: 0.3971779        total: 11.2s    remaining: 405ms
193:    learn: 0.3971150        total: 11.2s    remaining: 347ms
194:    learn: 0.3968123        total: 11.3s    remaining: 289ms
195:    learn: 0.3965700        total: 11.3s    remaining: 231ms
196:    learn: 0.3965521        total: 11.4s    remaining: 173ms
197:    learn: 0.3964410        total: 11.4s    remaining: 116ms
198:    learn: 0.3963084        total: 11.5s    remaining: 57.8ms
199:    learn: 0.3961364        total: 11.6s    remaining: 0us
```

```
0:      learn: 0.6317519      total: 47.9ms     remaining: 9.52s
1:      learn: 0.5871354      total: 99.8ms     remaining: 9.88s
2:      learn: 0.5629758      total: 150ms      remaining: 9.85s
3:      learn: 0.5415728      total: 199ms      remaining: 9.74s
4:      learn: 0.5234949      total: 286ms      remaining: 11.2s
5:      learn: 0.5101594      total: 359ms      remaining: 11.6s
6:      learn: 0.4963171      total: 413ms      remaining: 11.4s
7:      learn: 0.4877258      total: 469ms      remaining: 11.3s
8:      learn: 0.4799582      total: 552ms      remaining: 11.7s
9:      learn: 0.4735347      total: 653ms      remaining: 12.4s
10:     learn: 0.4663677      total: 698ms      remaining: 12s
11:     learn: 0.4627245      total: 753ms      remaining: 11.8s
12:     learn: 0.4597629      total: 808ms      remaining: 11.6s
13:     learn: 0.4565790      total: 860ms      remaining: 11.4s
14:     learn: 0.4537168      total: 924ms      remaining: 11.4s
15:     learn: 0.4524038      total: 989ms      remaining: 11.4s
16:     learn: 0.4491715      total: 1.04s      remaining: 11.2s
17:     learn: 0.4477039      total: 1.09s      remaining: 11s
18:     learn: 0.4462881      total: 1.14s      remaining: 10.9s
19:     learn: 0.4445093      total: 1.2s       remaining: 10.8s
20:     learn: 0.4437483      total: 1.26s      remaining: 10.8s
21:     learn: 0.4419626      total: 1.32s      remaining: 10.7s
22:     learn: 0.4408896      total: 1.38s      remaining: 10.7s
23:     learn: 0.4400917      total: 1.45s      remaining: 10.6s
24:     learn: 0.4393883      total: 1.5s       remaining: 10.5s
25:     learn: 0.4382235      total: 1.58s      remaining: 10.6s
26:     learn: 0.4373701      total: 1.65s      remaining: 10.6s
27:     learn: 0.4368332      total: 1.71s      remaining: 10.5s
28:     learn: 0.4365368      total: 1.76s      remaining: 10.4s
29:     learn: 0.4360622      total: 1.81s      remaining: 10.3s
30:     learn: 0.4351497      total: 1.86s      remaining: 10.2s
31:     learn: 0.4347683      total: 1.92s      remaining: 10.1s
32:     learn: 0.4344192      total: 1.97s      remaining: 9.97s
33:     learn: 0.4340235      total: 2.02s      remaining: 9.86s
34:     learn: 0.4337360      total: 2.09s      remaining: 9.86s
35:     learn: 0.4334839      total: 2.14s      remaining: 9.77s
36:     learn: 0.4331830      total: 2.2s       remaining: 9.68s
37:     learn: 0.4328989      total: 2.27s      remaining: 9.7s
38:     learn: 0.4327922      total: 2.33s      remaining: 9.61s
39:     learn: 0.4326684      total: 2.35s      remaining: 9.41s
40:     learn: 0.4317489      total: 2.4s       remaining: 9.33s
41:     learn: 0.4314945      total: 2.46s      remaining: 9.25s
42:     learn: 0.4304667      total: 2.53s      remaining: 9.22s
43:     learn: 0.4301225      total: 2.59s      remaining: 9.19s
44:     learn: 0.4300185      total: 2.64s      remaining: 9.1s
45:     learn: 0.4298340      total: 2.7s       remaining: 9.03s
46:     learn: 0.4296100      total: 2.76s      remaining: 8.98s
47:     learn: 0.4295697      total: 2.8s       remaining: 8.86s
```

```
48:     learn: 0.4294688       total: 2.85s     remaining: 8.78s
49:     learn: 0.4292942       total: 2.91s     remaining: 8.72s
50:     learn: 0.4285745       total: 2.96s     remaining: 8.66s
51:     learn: 0.4284807       total: 3.04s     remaining: 8.65s
52:     learn: 0.4283984       total: 3.1s      remaining: 8.6s
53:     learn: 0.4282728       total: 3.15s     remaining: 8.51s
54:     learn: 0.4282162       total: 3.17s     remaining: 8.36s
55:     learn: 0.4274452       total: 3.24s     remaining: 8.33s
56:     learn: 0.4270069       total: 3.3s      remaining: 8.29s
57:     learn: 0.4268392       total: 3.35s     remaining: 8.21s
58:     learn: 0.4265862       total: 3.41s     remaining: 8.15s
59:     learn: 0.4255953       total: 3.5s      remaining: 8.16s
60:     learn: 0.4254205       total: 3.56s     remaining: 8.12s
61:     learn: 0.4249485       total: 3.64s     remaining: 8.1s
62:     learn: 0.4244975       total: 3.7s      remaining: 8.05s
63:     learn: 0.4242531       total: 3.77s     remaining: 8s
64:     learn: 0.4241817       total: 3.83s     remaining: 7.95s
65:     learn: 0.4237396       total: 3.9s      remaining: 7.91s
66:     learn: 0.4234831       total: 3.95s     remaining: 7.84s
67:     learn: 0.4232028       total: 4.03s     remaining: 7.82s
68:     learn: 0.4222842       total: 4.1s      remaining: 7.79s
69:     learn: 0.4222009       total: 4.15s     remaining: 7.71s
70:     learn: 0.4220829       total: 4.22s     remaining: 7.66s
71:     learn: 0.4218790       total: 4.28s     remaining: 7.61s
72:     learn: 0.4218628       total: 4.33s     remaining: 7.53s
73:     learn: 0.4215559       total: 4.38s     remaining: 7.45s
74:     learn: 0.4213133       total: 4.43s     remaining: 7.39s
75:     learn: 0.4210661       total: 4.49s     remaining: 7.33s
76:     learn: 0.4207049       total: 4.54s     remaining: 7.26s
77:     learn: 0.4205696       total: 4.61s     remaining: 7.21s
78:     learn: 0.4203199       total: 4.67s     remaining: 7.16s
79:     learn: 0.4195120       total: 4.72s     remaining: 7.09s
80:     learn: 0.4194095       total: 4.78s     remaining: 7.02s
81:     learn: 0.4191615       total: 4.83s     remaining: 6.95s
82:     learn: 0.4190149       total: 4.89s     remaining: 6.89s
83:     learn: 0.4187325       total: 4.96s     remaining: 6.84s
84:     learn: 0.4184507       total: 5.01s     remaining: 6.78s
85:     learn: 0.4184506       total: 5.03s     remaining: 6.66s
86:     learn: 0.4181541       total: 5.09s     remaining: 6.61s
87:     learn: 0.4180132       total: 5.14s     remaining: 6.54s
88:     learn: 0.4179900       total: 5.19s     remaining: 6.47s
89:     learn: 0.4179233       total: 5.25s     remaining: 6.42s
90:     learn: 0.4172342       total: 5.32s     remaining: 6.37s
91:     learn: 0.4168983       total: 5.37s     remaining: 6.31s
92:     learn: 0.4167286       total: 5.43s     remaining: 6.25s
93:     learn: 0.4165078       total: 5.49s     remaining: 6.19s
94:     learn: 0.4164348       total: 5.54s     remaining: 6.12s
95:     learn: 0.4164346       total: 5.56s     remaining: 6.02s
```

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96:     learn: 0.4162722     total: 5.61s     remaining: 5.96s
97:     learn: 0.4161532     total: 5.66s     remaining: 5.89s
98:     learn: 0.4160625     total: 5.71s     remaining: 5.83s
99:     learn: 0.4157439     total: 5.77s     remaining: 5.77s
100:    learn: 0.4153380     total: 5.84s     remaining: 5.73s
101:    learn: 0.4149516     total: 5.9s      remaining: 5.67s
102:    learn: 0.4144433     total: 5.96s     remaining: 5.61s
103:    learn: 0.4142322     total: 6.02s     remaining: 5.56s
104:    learn: 0.4140921     total: 6.08s     remaining: 5.5s
105:    learn: 0.4140620     total: 6.12s     remaining: 5.43s
106:    learn: 0.4135216     total: 6.19s     remaining: 5.38s
107:    learn: 0.4129357     total: 6.25s     remaining: 5.33s
108:    learn: 0.4127462     total: 6.3s      remaining: 5.26s
109:    learn: 0.4127340     total: 6.35s     remaining: 5.2s
110:    learn: 0.4125192     total: 6.41s     remaining: 5.14s
111:    learn: 0.4118809     total: 6.46s     remaining: 5.08s
112:    learn: 0.4116320     total: 6.51s     remaining: 5.02s
113:    learn: 0.4115202     total: 6.57s     remaining: 4.96s
114:    learn: 0.4112327     total: 6.65s     remaining: 4.92s
115:    learn: 0.4112298     total: 6.7s      remaining: 4.85s
116:    learn: 0.4108392     total: 6.76s     remaining: 4.8s
117:    learn: 0.4106681     total: 6.82s     remaining: 4.74s
118:    learn: 0.4106591     total: 6.87s     remaining: 4.67s
119:    learn: 0.4104719     total: 6.93s     remaining: 4.62s
120:    learn: 0.4103732     total: 6.99s     remaining: 4.56s
121:    learn: 0.4102544     total: 7.06s     remaining: 4.51s
122:    learn: 0.4101025     total: 7.12s     remaining: 4.46s
123:    learn: 0.4099280     total: 7.17s     remaining: 4.39s
124:    learn: 0.4099196     total: 7.22s     remaining: 4.33s
125:    learn: 0.4097585     total: 7.29s     remaining: 4.28s
126:    learn: 0.4097098     total: 7.36s     remaining: 4.23s
127:    learn: 0.4094787     total: 7.42s     remaining: 4.17s
128:    learn: 0.4090982     total: 7.48s     remaining: 4.12s
129:    learn: 0.4089533     total: 7.53s     remaining: 4.05s
130:    learn: 0.4086099     total: 7.59s     remaining: 4s
131:    learn: 0.4085093     total: 7.64s     remaining: 3.93s
132:    learn: 0.4081805     total: 7.69s     remaining: 3.87s
133:    learn: 0.4080583     total: 7.74s     remaining: 3.81s
134:    learn: 0.4074310     total: 7.8s      remaining: 3.76s
135:    learn: 0.4072216     total: 7.86s     remaining: 3.7s
136:    learn: 0.4071735     total: 7.91s     remaining: 3.64s
137:    learn: 0.4069432     total: 7.97s     remaining: 3.58s
138:    learn: 0.4067930     total: 8.03s     remaining: 3.52s
139:    learn: 0.4065469     total: 8.09s     remaining: 3.46s
140:    learn: 0.4065378     total: 8.16s     remaining: 3.41s
141:    learn: 0.4061428     total: 8.22s     remaining: 3.36s
142:    learn: 0.4059003     total: 8.28s     remaining: 3.3s
143:    learn: 0.4056202     total: 8.34s     remaining: 3.24s
```

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144:    learn: 0.4055687      total: 8.39s     remaining: 3.18s
145:    learn: 0.4054240      total: 8.44s     remaining: 3.12s
146:    learn: 0.4053931      total: 8.49s     remaining: 3.06s
147:    learn: 0.4052577      total: 8.54s     remaining: 3s
148:    learn: 0.4049140      total: 8.59s     remaining: 2.94s
149:    learn: 0.4049088      total: 8.65s     remaining: 2.88s
150:    learn: 0.4047258      total: 8.72s     remaining: 2.83s
151:    learn: 0.4045760      total: 8.77s     remaining: 2.77s
152:    learn: 0.4042876      total: 8.83s     remaining: 2.71s
153:    learn: 0.4042047      total: 8.89s     remaining: 2.66s
154:    learn: 0.4040493      total: 8.96s     remaining: 2.6s
155:    learn: 0.4038932      total: 9.02s     remaining: 2.54s
156:    learn: 0.4038826      total: 9.07s     remaining: 2.48s
157:    learn: 0.4038133      total: 9.13s     remaining: 2.43s
158:    learn: 0.4036758      total: 9.18s     remaining: 2.37s
159:    learn: 0.4036233      total: 9.24s     remaining: 2.31s
160:    learn: 0.4036126      total: 9.29s     remaining: 2.25s
161:    learn: 0.4035217      total: 9.34s     remaining: 2.19s
162:    learn: 0.4035189      total: 9.4s      remaining: 2.13s
163:    learn: 0.4033932      total: 9.46s     remaining: 2.08s
164:    learn: 0.4032527      total: 9.52s     remaining: 2.02s
165:    learn: 0.4031645      total: 9.57s     remaining: 1.96s
166:    learn: 0.4030394      total: 9.62s     remaining: 1.9s
167:    learn: 0.4025157      total: 9.67s     remaining: 1.84s
168:    learn: 0.4023737      total: 9.73s     remaining: 1.78s
169:    learn: 0.4021375      total: 9.8s      remaining: 1.73s
170:    learn: 0.4019812      total: 9.88s     remaining: 1.68s
171:    learn: 0.4018078      total: 9.94s     remaining: 1.62s
172:    learn: 0.4012445      total: 9.99s     remaining: 1.56s
173:    learn: 0.4008844      total: 10s       remaining: 1.5s
174:    learn: 0.4007677      total: 10.1s     remaining: 1.44s
175:    learn: 0.4007676      total: 10.1s     remaining: 1.38s
176:    learn: 0.4004439      total: 10.2s     remaining: 1.32s
177:    learn: 0.4001032      total: 10.3s     remaining: 1.27s
178:    learn: 0.3999669      total: 10.3s     remaining: 1.21s
179:    learn: 0.3998914      total: 10.4s     remaining: 1.15s
180:    learn: 0.3995528      total: 10.4s     remaining: 1.09s
181:    learn: 0.3994258      total: 10.5s     remaining: 1.03s
182:    learn: 0.3992893      total: 10.5s     remaining: 977ms
183:    learn: 0.3991175      total: 10.6s     remaining: 920ms
184:    learn: 0.3989948      total: 10.6s     remaining: 862ms
185:    learn: 0.3987937      total: 10.7s     remaining: 804ms
186:    learn: 0.3984495      total: 10.7s     remaining: 747ms
187:    learn: 0.3982753      total: 10.8s     remaining: 690ms
188:    learn: 0.3982751      total: 10.9s     remaining: 633ms
189:    learn: 0.3980415      total: 11s       remaining: 577ms
190:    learn: 0.3979499      total: 11s       remaining: 519ms
191:    learn: 0.3978275      total: 11.1s     remaining: 461ms
```

```
192:     learn: 0.3976702       total: 11.2s    remaining: 405ms
193:     learn: 0.3975667       total: 11.2s    remaining: 348ms
194:     learn: 0.3975661       total: 11.3s    remaining: 290ms
195:     learn: 0.3974738       total: 11.4s    remaining: 232ms
196:     learn: 0.3972478       total: 11.4s    remaining: 174ms
197:     learn: 0.3971595       total: 11.5s    remaining: 116ms
198:     learn: 0.3969715       total: 11.6s    remaining: 58.1ms
199:     learn: 0.3968898       total: 11.6s    remaining: 0us
```

Mean train f1-score of data (CV) 15 is : 0.8174390932888856
Mean test f1-score of data (CV) 15 is : 0.8061211575310206

Shape of data 16 is :
(27303, 10)
Distribution of 16 is :
Yes   14102
No   13201
Name: TIMELY_RESPONSE, dtype: int64

<IPython.core.display.HTML object>

MetricVisualizer(layout=Layout(align_self='stretch', height='500px'))

Train f1_score [Yes]: for data 16 is : 0.8117807998712481
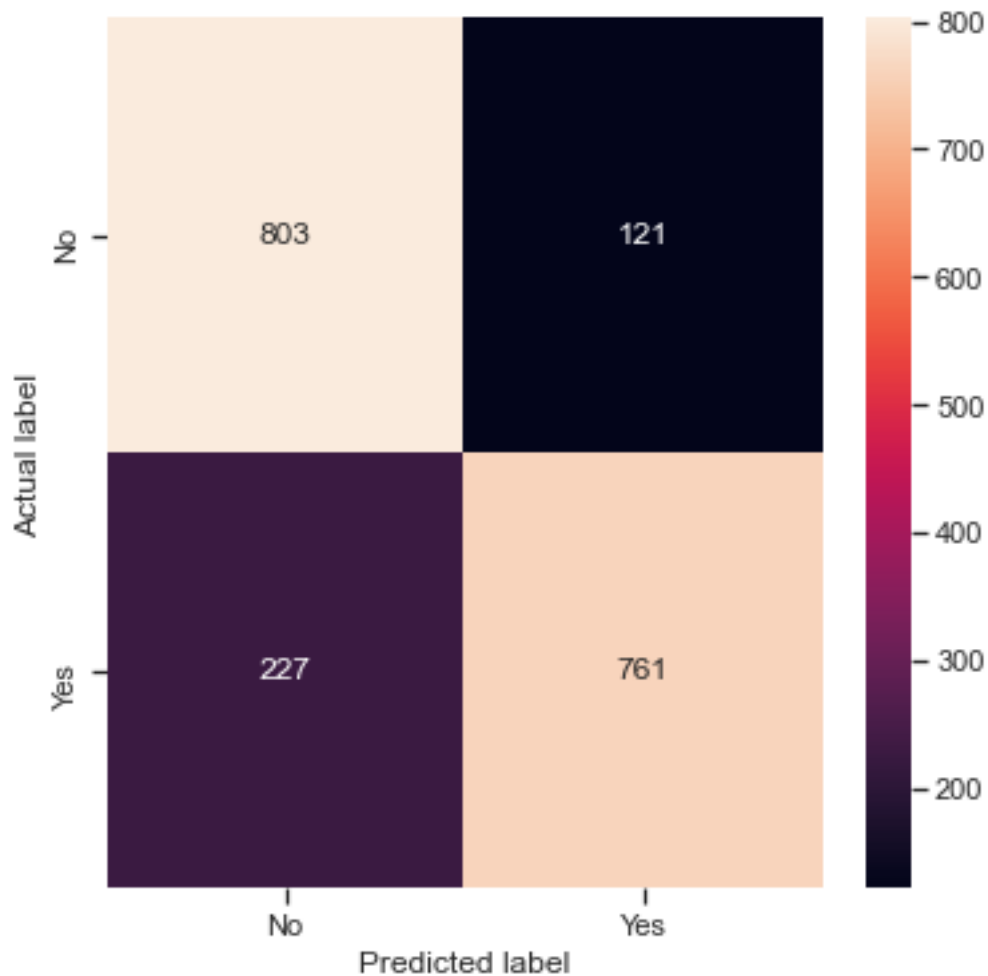Train f1_score [No]: for data 16 is : 0.8195772909595803

	precision	recall	f1-score	support
No	0.78	0.87	0.82	924
Yes	0.86	0.77	0.81	988
accuracy			0.82	1912
macro avg	0.82	0.82	0.82	1912
weighted avg	0.82	0.82	0.82	1912

```
Cross validation result for data 16 is :
0:      learn: 0.6462342       total: 56ms     remaining: 11.2s
1:      learn: 0.6019670       total: 118ms    remaining: 11.7s
2:      learn: 0.5693139       total: 176ms    remaining: 11.6s
3:      learn: 0.5442434       total: 233ms    remaining: 11.4s
4:      learn: 0.5287868       total: 301ms    remaining: 11.7s
5:      learn: 0.5101808       total: 351ms    remaining: 11.4s
6:      learn: 0.5002164       total: 426ms    remaining: 11.7s
7:      learn: 0.4920310       total: 478ms    remaining: 11.5s
8:      learn: 0.4838671       total: 541ms    remaining: 11.5s
9:      learn: 0.4779270       total: 596ms    remaining: 11.3s
10:     learn: 0.4717336       total: 660ms    remaining: 11.3s
11:     learn: 0.4665878       total: 716ms    remaining: 11.2s
12:     learn: 0.4632608       total: 761ms    remaining: 10.9s
13:     learn: 0.4608159       total: 806ms    remaining: 10.7s
14:     learn: 0.4585529       total: 857ms    remaining: 10.6s
15:     learn: 0.4568452       total: 910ms    remaining: 10.5s
```

```
16:     learn: 0.4545753     total: 971ms    remaining: 10.5s
17:     learn: 0.4526194     total: 1.03s    remaining: 10.5s
18:     learn: 0.4512742     total: 1.08s    remaining: 10.3s
19:     learn: 0.4492463     total: 1.13s    remaining: 10.2s
20:     learn: 0.4482854     total: 1.23s    remaining: 10.5s
21:     learn: 0.4472374     total: 1.31s    remaining: 10.6s
22:     learn: 0.4458343     total: 1.39s    remaining: 10.7s
23:     learn: 0.4449350     total: 1.45s    remaining: 10.6s
24:     learn: 0.4440905     total: 1.5s     remaining: 10.5s
25:     learn: 0.4435535     total: 1.58s    remaining: 10.6s
26:     learn: 0.4430555     total: 1.66s    remaining: 10.7s
27:     learn: 0.4422430     total: 1.74s    remaining: 10.7s
28:     learn: 0.4420140     total: 1.77s    remaining: 10.5s
29:     learn: 0.4412833     total: 1.85s    remaining: 10.5s
30:     learn: 0.4407659     total: 1.91s    remaining: 10.4s
31:     learn: 0.4400673     total: 1.97s    remaining: 10.4s
32:     learn: 0.4388730     total: 2.04s    remaining: 10.3s
33:     learn: 0.4383741     total: 2.12s    remaining: 10.3s
34:     learn: 0.4381463     total: 2.17s    remaining: 10.2s
35:     learn: 0.4375258     total: 2.25s    remaining: 10.2s
36:     learn: 0.4372951     total: 2.31s    remaining: 10.2s
37:     learn: 0.4370904     total: 2.38s    remaining: 10.2s
38:     learn: 0.4362731     total: 2.46s    remaining: 10.1s
39:     learn: 0.4360456     total: 2.53s    remaining: 10.1s
40:     learn: 0.4352136     total: 2.6s     remaining: 10.1s
41:     learn: 0.4347319     total: 2.68s    remaining: 10.1s
42:     learn: 0.4345327     total: 2.74s    remaining: 10s
43:     learn: 0.4343481     total: 2.78s    remaining: 9.87s
44:     learn: 0.4341498     total: 2.85s    remaining: 9.8s
45:     learn: 0.4339939     total: 2.92s    remaining: 9.77s
46:     learn: 0.4336615     total: 2.98s    remaining: 9.72s
47:     learn: 0.4335361     total: 3.03s    remaining: 9.61s
48:     learn: 0.4333344     total: 3.09s    remaining: 9.52s
49:     learn: 0.4330166     total: 3.17s    remaining: 9.5s
50:     learn: 0.4326189     total: 3.25s    remaining: 9.51s
51:     learn: 0.4320175     total: 3.3s     remaining: 9.4s
52:     learn: 0.4316157     total: 3.37s    remaining: 9.33s
53:     learn: 0.4313346     total: 3.43s    remaining: 9.27s
54:     learn: 0.4310456     total: 3.48s    remaining: 9.18s
55:     learn: 0.4309385     total: 3.54s    remaining: 9.1s
56:     learn: 0.4307376     total: 3.6s     remaining: 9.02s
57:     learn: 0.4306135     total: 3.68s    remaining: 9.01s
58:     learn: 0.4300710     total: 3.73s    remaining: 8.92s
59:     learn: 0.4299296     total: 3.79s    remaining: 8.83s
60:     learn: 0.4294189     total: 3.85s    remaining: 8.76s
61:     learn: 0.4292955     total: 3.9s     remaining: 8.67s
62:     learn: 0.4289842     total: 3.96s    remaining: 8.6s
63:     learn: 0.4289612     total: 4.02s    remaining: 8.54s
```

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64:      learn: 0.4287921     total: 4.07s     remaining: 8.45s
65:      learn: 0.4283348     total: 4.12s     remaining: 8.37s
66:      learn: 0.4282519     total: 4.19s     remaining: 8.31s
67:      learn: 0.4280140     total: 4.25s     remaining: 8.25s
68:      learn: 0.4274707     total: 4.33s     remaining: 8.22s
69:      learn: 0.4265905     total: 4.39s     remaining: 8.15s
70:      learn: 0.4264497     total: 4.45s     remaining: 8.08s
71:      learn: 0.4262483     total: 4.54s     remaining: 8.07s
72:      learn: 0.4260632     total: 4.61s     remaining: 8.02s
73:      learn: 0.4260150     total: 4.67s     remaining: 7.95s
74:      learn: 0.4256836     total: 4.74s     remaining: 7.89s
75:      learn: 0.4249796     total: 4.79s     remaining: 7.82s
76:      learn: 0.4246442     total: 4.85s     remaining: 7.75s
77:      learn: 0.4240696     total: 4.93s     remaining: 7.71s
78:      learn: 0.4234957     total: 4.98s     remaining: 7.63s
79:      learn: 0.4233295     total: 5.03s     remaining: 7.55s
80:      learn: 0.4231754     total: 5.08s     remaining: 7.46s
81:      learn: 0.4227053     total: 5.13s     remaining: 7.38s
82:      learn: 0.4224964     total: 5.19s     remaining: 7.32s
83:      learn: 0.4221854     total: 5.27s     remaining: 7.27s
84:      learn: 0.4220531     total: 5.32s     remaining: 7.2s
85:      learn: 0.4217996     total: 5.45s     remaining: 7.22s
86:      learn: 0.4215777     total: 5.52s     remaining: 7.17s
87:      learn: 0.4214939     total: 5.57s     remaining: 7.09s
88:      learn: 0.4212978     total: 5.63s     remaining: 7.02s
89:      learn: 0.4210633     total: 5.69s     remaining: 6.95s
90:      learn: 0.4208616     total: 5.74s     remaining: 6.88s
91:      learn: 0.4207229     total: 5.8s      remaining: 6.8s
92:      learn: 0.4203744     total: 5.85s     remaining: 6.74s
93:      learn: 0.4200396     total: 5.93s     remaining: 6.68s
94:      learn: 0.4197946     total: 5.99s     remaining: 6.62s
95:      learn: 0.4197797     total: 6.03s     remaining: 6.53s
96:      learn: 0.4196154     total: 6.1s      remaining: 6.48s
97:      learn: 0.4195723     total: 6.15s     remaining: 6.4s
98:      learn: 0.4193495     total: 6.21s     remaining: 6.33s
99:      learn: 0.4192663     total: 6.26s     remaining: 6.26s
100:     learn: 0.4189897     total: 6.32s     remaining: 6.19s
101:     learn: 0.4189139     total: 6.37s     remaining: 6.12s
102:     learn: 0.4188873     total: 6.43s     remaining: 6.05s
103:     learn: 0.4183169     total: 6.49s     remaining: 5.99s
104:     learn: 0.4181382     total: 6.55s     remaining: 5.92s
105:     learn: 0.4180548     total: 6.65s     remaining: 5.89s
106:     learn: 0.4177345     total: 6.7s      remaining: 5.82s
107:     learn: 0.4171104     total: 6.75s     remaining: 5.75s
108:     learn: 0.4169921     total: 6.8s      remaining: 5.67s
109:     learn: 0.4167384     total: 6.85s     remaining: 5.61s
110:     learn: 0.4166919     total: 6.9s      remaining: 5.54s
111:     learn: 0.4165775     total: 6.95s     remaining: 5.46s
```

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112:    learn: 0.4163621    total: 7s       remaining: 5.39s
113:    learn: 0.4159575    total: 7.05s    remaining: 5.32s
114:    learn: 0.4158003    total: 7.1s     remaining: 5.25s
115:    learn: 0.4156737    total: 7.16s    remaining: 5.18s
116:    learn: 0.4152968    total: 7.21s    remaining: 5.11s
117:    learn: 0.4151042    total: 7.26s    remaining: 5.05s
118:    learn: 0.4149488    total: 7.33s    remaining: 4.99s
119:    learn: 0.4146253    total: 7.4s     remaining: 4.93s
120:    learn: 0.4141994    total: 7.45s    remaining: 4.87s
121:    learn: 0.4139050    total: 7.51s    remaining: 4.8s
122:    learn: 0.4137997    total: 7.56s    remaining: 4.73s
123:    learn: 0.4135770    total: 7.61s    remaining: 4.66s
124:    learn: 0.4134157    total: 7.67s    remaining: 4.6s
125:    learn: 0.4131336    total: 7.73s    remaining: 4.54s
126:    learn: 0.4130290    total: 7.79s    remaining: 4.48s
127:    learn: 0.4129098    total: 7.86s    remaining: 4.42s
128:    learn: 0.4122495    total: 7.92s    remaining: 4.36s
129:    learn: 0.4120385    total: 7.98s    remaining: 4.3s
130:    learn: 0.4118857    total: 8.04s    remaining: 4.24s
131:    learn: 0.4117683    total: 8.11s    remaining: 4.18s
132:    learn: 0.4114509    total: 8.17s    remaining: 4.12s
133:    learn: 0.4112405    total: 8.23s    remaining: 4.05s
134:    learn: 0.4110209    total: 8.3s     remaining: 4s
135:    learn: 0.4106172    total: 8.37s    remaining: 3.94s
136:    learn: 0.4102871    total: 8.42s    remaining: 3.87s
137:    learn: 0.4101016    total: 8.47s    remaining: 3.81s
138:    learn: 0.4099636    total: 8.55s    remaining: 3.75s
139:    learn: 0.4098244    total: 8.61s    remaining: 3.69s
140:    learn: 0.4095698    total: 8.66s    remaining: 3.62s
141:    learn: 0.4090947    total: 8.72s    remaining: 3.56s
142:    learn: 0.4090349    total: 8.77s    remaining: 3.5s
143:    learn: 0.4087546    total: 8.83s    remaining: 3.43s
144:    learn: 0.4084484    total: 8.89s    remaining: 3.37s
145:    learn: 0.4083089    total: 8.94s    remaining: 3.31s
146:    learn: 0.4081633    total: 9s       remaining: 3.25s
147:    learn: 0.4080112    total: 9.07s    remaining: 3.19s
148:    learn: 0.4079185    total: 9.13s    remaining: 3.13s
149:    learn: 0.4076693    total: 9.2s     remaining: 3.06s
150:    learn: 0.4074848    total: 9.27s    remaining: 3.01s
151:    learn: 0.4070637    total: 9.32s    remaining: 2.94s
152:    learn: 0.4067766    total: 9.39s    remaining: 2.88s
153:    learn: 0.4067165    total: 9.45s    remaining: 2.82s
154:    learn: 0.4065035    total: 9.51s    remaining: 2.76s
155:    learn: 0.4063520    total: 9.59s    remaining: 2.71s
156:    learn: 0.4059872    total: 9.64s    remaining: 2.64s
157:    learn: 0.4059125    total: 9.69s    remaining: 2.58s
158:    learn: 0.4057529    total: 9.74s    remaining: 2.51s
159:    learn: 0.4057015    total: 9.8s     remaining: 2.45s
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160:     learn: 0.4056268      total: 9.86s      remaining: 2.39s
161:     learn: 0.4055300      total: 9.91s      remaining: 2.33s
162:     learn: 0.4051330      total: 9.96s      remaining: 2.26s
163:     learn: 0.4049862      total: 10s        remaining: 2.2s
164:     learn: 0.4048591      total: 10.1s      remaining: 2.14s
165:     learn: 0.4046761      total: 10.1s      remaining: 2.08s
166:     learn: 0.4044942      total: 10.2s      remaining: 2.02s
167:     learn: 0.4043809      total: 10.3s      remaining: 1.96s
168:     learn: 0.4042297      total: 10.4s      remaining: 1.9s
169:     learn: 0.4041675      total: 10.4s      remaining: 1.84s
170:     learn: 0.4040241      total: 10.5s      remaining: 1.77s
171:     learn: 0.4040106      total: 10.5s      remaining: 1.71s
172:     learn: 0.4038578      total: 10.6s      remaining: 1.65s
173:     learn: 0.4037540      total: 10.6s      remaining: 1.59s
174:     learn: 0.4036091      total: 10.7s      remaining: 1.53s
175:     learn: 0.4033138      total: 10.8s      remaining: 1.47s
176:     learn: 0.4033015      total: 10.8s      remaining: 1.4s
177:     learn: 0.4030561      total: 10.9s      remaining: 1.34s
178:     learn: 0.4029449      total: 10.9s      remaining: 1.28s
179:     learn: 0.4028885      total: 11s        remaining: 1.22s
180:     learn: 0.4027364      total: 11s        remaining: 1.16s
181:     learn: 0.4026504      total: 11.1s      remaining: 1.1s
182:     learn: 0.4024123      total: 11.1s      remaining: 1.03s
183:     learn: 0.4020834      total: 11.2s      remaining: 973ms
184:     learn: 0.4018360      total: 11.2s      remaining: 911ms
185:     learn: 0.4016898      total: 11.3s      remaining: 852ms
186:     learn: 0.4014609      total: 11.4s      remaining: 790ms
187:     learn: 0.4013367      total: 11.4s      remaining: 730ms
188:     learn: 0.4011356      total: 11.5s      remaining: 669ms
189:     learn: 0.4009765      total: 11.6s      remaining: 608ms
190:     learn: 0.4008604      total: 11.6s      remaining: 547ms
191:     learn: 0.4006268      total: 11.7s      remaining: 487ms
192:     learn: 0.4002866      total: 11.7s      remaining: 426ms
193:     learn: 0.3999745      total: 11.8s      remaining: 365ms
194:     learn: 0.3999075      total: 11.9s      remaining: 304ms
195:     learn: 0.3997131      total: 11.9s      remaining: 243ms
196:     learn: 0.3995704      total: 12s        remaining: 182ms
197:     learn: 0.3994369      total: 12s        remaining: 122ms
198:     learn: 0.3993548      total: 12.1s      remaining: 60.8ms
199:     learn: 0.3993083      total: 12.2s      remaining: 0us
0:       learn: 0.6342045      total: 55.1ms     remaining: 11s
1:       learn: 0.5994735      total: 123ms      remaining: 12.2s
2:       learn: 0.5663609      total: 200ms      remaining: 13.1s
3:       learn: 0.5469343      total: 253ms      remaining: 12.4s
4:       learn: 0.5329155      total: 306ms      remaining: 11.9s
5:       learn: 0.5198418      total: 358ms      remaining: 11.6s
6:       learn: 0.5090749      total: 422ms      remaining: 11.6s
7:       learn: 0.4983661      total: 500ms      remaining: 12s
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 8:        learn: 0.4900293        total: 561ms      remaining: 11.9s
 9:        learn: 0.4818609        total: 610ms      remaining: 11.6s
10:        learn: 0.4770240        total: 661ms      remaining: 11.4s
11:        learn: 0.4729553        total: 734ms      remaining: 11.5s
12:        learn: 0.4689276        total: 787ms      remaining: 11.3s
13:        learn: 0.4656875        total: 839ms      remaining: 11.1s
14:        learn: 0.4622159        total: 888ms      remaining: 11s
15:        learn: 0.4592692        total: 965ms      remaining: 11.1s
16:        learn: 0.4576790        total: 1.02s      remaining: 10.9s
17:        learn: 0.4558627        total: 1.09s      remaining: 11s
18:        learn: 0.4541629        total: 1.16s      remaining: 11s
19:        learn: 0.4519446        total: 1.25s      remaining: 11.3s
20:        learn: 0.4499393        total: 1.3s       remaining: 11.1s
21:        learn: 0.4492222        total: 1.35s      remaining: 10.9s
22:        learn: 0.4480428        total: 1.41s      remaining: 10.8s
23:        learn: 0.4464627        total: 1.47s      remaining: 10.8s
24:        learn: 0.4450790        total: 1.53s      remaining: 10.7s
25:        learn: 0.4442854        total: 1.58s      remaining: 10.6s
26:        learn: 0.4427671        total: 1.63s      remaining: 10.5s
27:        learn: 0.4422604        total: 1.68s      remaining: 10.3s
28:        learn: 0.4419751        total: 1.85s      remaining: 10.9s
29:        learn: 0.4412976        total: 1.95s      remaining: 11s
30:        learn: 0.4403825        total: 2.02s      remaining: 11s
31:        learn: 0.4403396        total: 2.04s      remaining: 10.7s
32:        learn: 0.4396426        total: 2.1s       remaining: 10.6s
33:        learn: 0.4384558        total: 2.18s      remaining: 10.6s
34:        learn: 0.4374100        total: 2.23s      remaining: 10.5s
35:        learn: 0.4370976        total: 2.29s      remaining: 10.4s
36:        learn: 0.4367310        total: 2.36s      remaining: 10.4s
37:        learn: 0.4364514        total: 2.42s      remaining: 10.3s
38:        learn: 0.4353164        total: 2.49s      remaining: 10.3s
39:        learn: 0.4350023        total: 2.55s      remaining: 10.2s
40:        learn: 0.4346121        total: 2.61s      remaining: 10.1s
41:        learn: 0.4341200        total: 2.65s      remaining: 9.99s
42:        learn: 0.4336583        total: 2.71s      remaining: 9.92s
43:        learn: 0.4328148        total: 2.78s      remaining: 9.86s
44:        learn: 0.4325917        total: 2.84s      remaining: 9.78s
45:        learn: 0.4324622        total: 2.89s      remaining: 9.67s
46:        learn: 0.4320879        total: 2.95s      remaining: 9.62s
47:        learn: 0.4317490        total: 3.05s      remaining: 9.67s
48:        learn: 0.4315119        total: 3.11s      remaining: 9.58s
49:        learn: 0.4313377        total: 3.17s      remaining: 9.52s
50:        learn: 0.4311075        total: 3.24s      remaining: 9.47s
51:        learn: 0.4309318        total: 3.33s      remaining: 9.48s
52:        learn: 0.4307173        total: 3.38s      remaining: 9.38s
53:        learn: 0.4303060        total: 3.44s      remaining: 9.3s
54:        learn: 0.4297196        total: 3.5s       remaining: 9.23s
55:        learn: 0.4293805        total: 3.56s      remaining: 9.14s
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56:     learn: 0.4292433     total: 3.6s      remaining: 9.04s
57:     learn: 0.4289515     total: 3.65s     remaining: 8.94s
58:     learn: 0.4289505     total: 3.68s     remaining: 8.8s
59:     learn: 0.4285187     total: 3.73s     remaining: 8.71s
60:     learn: 0.4282532     total: 3.79s     remaining: 8.63s
61:     learn: 0.4281351     total: 3.84s     remaining: 8.55s
62:     learn: 0.4279010     total: 3.9s      remaining: 8.47s
63:     learn: 0.4271765     total: 3.96s     remaining: 8.42s
64:     learn: 0.4270938     total: 4.01s     remaining: 8.34s
65:     learn: 0.4267148     total: 4.07s     remaining: 8.26s
66:     learn: 0.4263447     total: 4.16s     remaining: 8.26s
67:     learn: 0.4262649     total: 4.22s     remaining: 8.19s
68:     learn: 0.4259442     total: 4.29s     remaining: 8.13s
69:     learn: 0.4257700     total: 4.34s     remaining: 8.07s
70:     learn: 0.4255261     total: 4.41s     remaining: 8.01s
71:     learn: 0.4252684     total: 4.49s     remaining: 7.97s
72:     learn: 0.4251717     total: 4.54s     remaining: 7.89s
73:     learn: 0.4250149     total: 4.59s     remaining: 7.82s
74:     learn: 0.4245376     total: 4.64s     remaining: 7.74s
75:     learn: 0.4240552     total: 4.7s      remaining: 7.66s
76:     learn: 0.4238345     total: 4.77s     remaining: 7.62s
77:     learn: 0.4233722     total: 4.83s     remaining: 7.55s
78:     learn: 0.4230671     total: 4.89s     remaining: 7.5s
79:     learn: 0.4227952     total: 4.97s     remaining: 7.45s
80:     learn: 0.4225908     total: 5.02s     remaining: 7.37s
81:     learn: 0.4222980     total: 5.08s     remaining: 7.31s
82:     learn: 0.4221109     total: 5.13s     remaining: 7.24s
83:     learn: 0.4220090     total: 5.2s      remaining: 7.18s
84:     learn: 0.4216221     total: 5.26s     remaining: 7.12s
85:     learn: 0.4215248     total: 5.32s     remaining: 7.05s
86:     learn: 0.4211894     total: 5.37s     remaining: 6.97s
87:     learn: 0.4208827     total: 5.42s     remaining: 6.9s
88:     learn: 0.4208105     total: 5.49s     remaining: 6.85s
89:     learn: 0.4203960     total: 5.57s     remaining: 6.8s
90:     learn: 0.4200755     total: 5.62s     remaining: 6.73s
91:     learn: 0.4198241     total: 5.7s      remaining: 6.7s
92:     learn: 0.4195908     total: 5.78s     remaining: 6.65s
93:     learn: 0.4193829     total: 5.83s     remaining: 6.58s
94:     learn: 0.4192593     total: 5.88s     remaining: 6.5s
95:     learn: 0.4189314     total: 5.95s     remaining: 6.44s
96:     learn: 0.4186050     total: 6.02s     remaining: 6.39s
97:     learn: 0.4182803     total: 6.08s     remaining: 6.32s
98:     learn: 0.4178985     total: 6.13s     remaining: 6.26s
99:     learn: 0.4178947     total: 6.18s     remaining: 6.18s
100:    learn: 0.4176134     total: 6.24s     remaining: 6.12s
101:    learn: 0.4173842     total: 6.3s      remaining: 6.05s
102:    learn: 0.4172753     total: 6.34s     remaining: 5.97s
103:    learn: 0.4164536     total: 6.4s      remaining: 5.91s
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104:    learn: 0.4163350    total: 6.46s    remaining: 5.85s
105:    learn: 0.4163262    total: 6.51s    remaining: 5.78s
106:    learn: 0.4160592    total: 6.59s    remaining: 5.73s
107:    learn: 0.4158418    total: 6.69s    remaining: 5.7s
108:    learn: 0.4151160    total: 6.79s    remaining: 5.67s
109:    learn: 0.4148423    total: 6.85s    remaining: 5.6s
110:    learn: 0.4145595    total: 6.9s     remaining: 5.53s
111:    learn: 0.4142226    total: 6.96s    remaining: 5.47s
112:    learn: 0.4140523    total: 7.01s    remaining: 5.4s
113:    learn: 0.4139633    total: 7.06s    remaining: 5.33s
114:    learn: 0.4139276    total: 7.12s    remaining: 5.26s
115:    learn: 0.4139123    total: 7.17s    remaining: 5.19s
116:    learn: 0.4138901    total: 7.22s    remaining: 5.12s
117:    learn: 0.4134613    total: 7.28s    remaining: 5.06s
118:    learn: 0.4131944    total: 7.33s    remaining: 4.99s
119:    learn: 0.4128528    total: 7.39s    remaining: 4.93s
120:    learn: 0.4128522    total: 7.43s    remaining: 4.85s
121:    learn: 0.4127072    total: 7.5s     remaining: 4.8s
122:    learn: 0.4125270    total: 7.57s    remaining: 4.74s
123:    learn: 0.4119152    total: 7.63s    remaining: 4.67s
124:    learn: 0.4115356    total: 7.69s    remaining: 4.61s
125:    learn: 0.4115326    total: 7.74s    remaining: 4.55s
126:    learn: 0.4113695    total: 7.8s     remaining: 4.48s
127:    learn: 0.4112075    total: 7.85s    remaining: 4.42s
128:    learn: 0.4108436    total: 7.91s    remaining: 4.35s
129:    learn: 0.4108063    total: 7.96s    remaining: 4.29s
130:    learn: 0.4106864    total: 8.02s    remaining: 4.22s
131:    learn: 0.4104827    total: 8.07s    remaining: 4.16s
132:    learn: 0.4103589    total: 8.13s    remaining: 4.1s
133:    learn: 0.4099589    total: 8.2s     remaining: 4.04s
134:    learn: 0.4096744    total: 8.32s    remaining: 4.01s
135:    learn: 0.4095995    total: 8.38s    remaining: 3.94s
136:    learn: 0.4094235    total: 8.44s    remaining: 3.88s
137:    learn: 0.4093630    total: 8.49s    remaining: 3.81s
138:    learn: 0.4092184    total: 8.55s    remaining: 3.75s
139:    learn: 0.4088699    total: 8.61s    remaining: 3.69s
140:    learn: 0.4086131    total: 8.66s    remaining: 3.63s
141:    learn: 0.4085376    total: 8.72s    remaining: 3.56s
142:    learn: 0.4084114    total: 8.78s    remaining: 3.5s
143:    learn: 0.4083266    total: 8.83s    remaining: 3.43s
144:    learn: 0.4082213    total: 8.9s     remaining: 3.38s
145:    learn: 0.4079055    total: 8.96s    remaining: 3.31s
146:    learn: 0.4077055    total: 9.02s    remaining: 3.25s
147:    learn: 0.4072856    total: 9.08s    remaining: 3.19s
148:    learn: 0.4068396    total: 9.15s    remaining: 3.13s
149:    learn: 0.4066942    total: 9.21s    remaining: 3.07s
150:    learn: 0.4063754    total: 9.28s    remaining: 3.01s
151:    learn: 0.4059851    total: 9.35s    remaining: 2.95s
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152:    learn: 0.4058119    total: 9.4s     remaining: 2.89s
153:    learn: 0.4057381    total: 9.47s    remaining: 2.83s
154:    learn: 0.4055915    total: 9.52s    remaining: 2.76s
155:    learn: 0.4054861    total: 9.58s    remaining: 2.7s
156:    learn: 0.4051904    total: 9.64s    remaining: 2.64s
157:    learn: 0.4049098    total: 9.69s    remaining: 2.58s
158:    learn: 0.4045992    total: 9.76s    remaining: 2.52s
159:    learn: 0.4043358    total: 9.81s    remaining: 2.45s
160:    learn: 0.4042262    total: 9.88s    remaining: 2.39s
161:    learn: 0.4040372    total: 9.93s    remaining: 2.33s
162:    learn: 0.4039773    total: 10s      remaining: 2.27s
163:    learn: 0.4039465    total: 10.1s    remaining: 2.22s
164:    learn: 0.4038710    total: 10.2s    remaining: 2.15s
165:    learn: 0.4038255    total: 10.2s    remaining: 2.09s
166:    learn: 0.4036803    total: 10.3s    remaining: 2.03s
167:    learn: 0.4034661    total: 10.3s    remaining: 1.97s
168:    learn: 0.4033671    total: 10.4s    remaining: 1.91s
169:    learn: 0.4033123    total: 10.4s    remaining: 1.84s
170:    learn: 0.4030808    total: 10.5s    remaining: 1.78s
171:    learn: 0.4029211    total: 10.6s    remaining: 1.72s
172:    learn: 0.4029127    total: 10.6s    remaining: 1.66s
173:    learn: 0.4028210    total: 10.7s    remaining: 1.59s
174:    learn: 0.4027692    total: 10.7s    remaining: 1.53s
175:    learn: 0.4025719    total: 10.8s    remaining: 1.47s
176:    learn: 0.4024695    total: 10.9s    remaining: 1.41s
177:    learn: 0.4020870    total: 10.9s    remaining: 1.35s
178:    learn: 0.4019525    total: 11s      remaining: 1.29s
179:    learn: 0.4018571    total: 11.1s    remaining: 1.23s
180:    learn: 0.4017972    total: 11.1s    remaining: 1.17s
181:    learn: 0.4017005    total: 11.2s    remaining: 1.1s
182:    learn: 0.4014691    total: 11.2s    remaining: 1.04s
183:    learn: 0.4012437    total: 11.3s    remaining: 981ms
184:    learn: 0.4011537    total: 11.4s    remaining: 920ms
185:    learn: 0.4007881    total: 11.4s    remaining: 859ms
186:    learn: 0.4006972    total: 11.5s    remaining: 797ms
187:    learn: 0.4006246    total: 11.5s    remaining: 735ms
188:    learn: 0.4004417    total: 11.6s    remaining: 674ms
189:    learn: 0.4001605    total: 11.6s    remaining: 612ms
190:    learn: 0.3999574    total: 11.7s    remaining: 551ms
191:    learn: 0.3998597    total: 11.8s    remaining: 490ms
192:    learn: 0.3997029    total: 11.8s    remaining: 428ms
193:    learn: 0.3996526    total: 11.9s    remaining: 368ms
194:    learn: 0.3996248    total: 12s      remaining: 307ms
195:    learn: 0.3993390    total: 12s      remaining: 245ms
196:    learn: 0.3991032    total: 12.1s    remaining: 184ms
197:    learn: 0.3990772    total: 12.1s    remaining: 123ms
198:    learn: 0.3989024    total: 12.2s    remaining: 61.2ms
199:    learn: 0.3987073    total: 12.2s    remaining: 0us
```

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0:      learn: 0.6341359      total: 45.1ms    remaining: 8.97s
1:      learn: 0.6000669      total: 95.4ms    remaining: 9.44s
2:      learn: 0.5736646      total: 157ms     remaining: 10.3s
3:      learn: 0.5509393      total: 206ms     remaining: 10.1s
4:      learn: 0.5329749      total: 278ms     remaining: 10.8s
5:      learn: 0.5154286      total: 337ms     remaining: 10.9s
6:      learn: 0.5055168      total: 410ms     remaining: 11.3s
7:      learn: 0.4962047      total: 456ms     remaining: 10.9s
8:      learn: 0.4864518      total: 519ms     remaining: 11s
9:      learn: 0.4833605      total: 569ms     remaining: 10.8s
10:     learn: 0.4779900      total: 620ms     remaining: 10.6s
11:     learn: 0.4743055      total: 662ms     remaining: 10.4s
12:     learn: 0.4699236      total: 704ms     remaining: 10.1s
13:     learn: 0.4669677      total: 758ms     remaining: 10.1s
14:     learn: 0.4643043      total: 820ms     remaining: 10.1s
15:     learn: 0.4617790      total: 867ms     remaining: 9.97s
16:     learn: 0.4582239      total: 943ms     remaining: 10.2s
17:     learn: 0.4562743      total: 1s        remaining: 10.2s
18:     learn: 0.4547064      total: 1.05s     remaining: 10s
19:     learn: 0.4537415      total: 1.12s     remaining: 10.1s
20:     learn: 0.4526429      total: 1.18s     remaining: 10s
21:     learn: 0.4519065      total: 1.25s     remaining: 10.1s
22:     learn: 0.4503447      total: 1.29s     remaining: 9.95s
23:     learn: 0.4492549      total: 1.34s     remaining: 9.86s
24:     learn: 0.4487547      total: 1.39s     remaining: 9.72s
25:     learn: 0.4470942      total: 1.44s     remaining: 9.67s
26:     learn: 0.4462428      total: 1.51s     remaining: 9.69s
27:     learn: 0.4454232      total: 1.58s     remaining: 9.69s
28:     learn: 0.4444583      total: 1.63s     remaining: 9.6s
29:     learn: 0.4438383      total: 1.68s     remaining: 9.53s
30:     learn: 0.4434038      total: 1.74s     remaining: 9.47s
31:     learn: 0.4429516      total: 1.79s     remaining: 9.42s
32:     learn: 0.4417537      total: 1.87s     remaining: 9.46s
33:     learn: 0.4411511      total: 1.93s     remaining: 9.4s
34:     learn: 0.4406581      total: 1.99s     remaining: 9.38s
35:     learn: 0.4404989      total: 2.05s     remaining: 9.32s
36:     learn: 0.4399571      total: 2.1s      remaining: 9.26s
37:     learn: 0.4394949      total: 2.16s     remaining: 9.2s
38:     learn: 0.4391147      total: 2.21s     remaining: 9.13s
39:     learn: 0.4386724      total: 2.27s     remaining: 9.07s
40:     learn: 0.4385450      total: 2.31s     remaining: 8.96s
41:     learn: 0.4383321      total: 2.37s     remaining: 8.9s
42:     learn: 0.4378702      total: 2.41s     remaining: 8.82s
43:     learn: 0.4376209      total: 2.46s     remaining: 8.72s
44:     learn: 0.4373226      total: 2.52s     remaining: 8.67s
45:     learn: 0.4371155      total: 2.59s     remaining: 8.66s
46:     learn: 0.4366751      total: 2.63s     remaining: 8.57s
47:     learn: 0.4361925      total: 2.68s     remaining: 8.49s
```

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48:     learn: 0.4361579     total: 2.71s     remaining: 8.36s
49:     learn: 0.4358853     total: 2.77s     remaining: 8.31s
50:     learn: 0.4356108     total: 2.82s     remaining: 8.23s
51:     learn: 0.4352216     total: 2.87s     remaining: 8.17s
52:     learn: 0.4349639     total: 2.92s     remaining: 8.11s
53:     learn: 0.4345765     total: 2.98s     remaining: 8.07s
54:     learn: 0.4345229     total: 3.05s     remaining: 8.04s
55:     learn: 0.4331588     total: 3.11s     remaining: 8.01s
56:     learn: 0.4328728     total: 3.16s     remaining: 7.93s
57:     learn: 0.4322957     total: 3.21s     remaining: 7.86s
58:     learn: 0.4319956     total: 3.27s     remaining: 7.82s
59:     learn: 0.4317912     total: 3.33s     remaining: 7.76s
60:     learn: 0.4315071     total: 3.41s     remaining: 7.77s
61:     learn: 0.4313304     total: 3.46s     remaining: 7.69s
62:     learn: 0.4307951     total: 3.52s     remaining: 7.66s
63:     learn: 0.4302827     total: 3.58s     remaining: 7.62s
64:     learn: 0.4301806     total: 3.64s     remaining: 7.56s
65:     learn: 0.4301143     total: 3.69s     remaining: 7.49s
66:     learn: 0.4293696     total: 3.77s     remaining: 7.48s
67:     learn: 0.4289702     total: 3.81s     remaining: 7.4s
68:     learn: 0.4286717     total: 3.87s     remaining: 7.34s
69:     learn: 0.4285172     total: 3.92s     remaining: 7.28s
70:     learn: 0.4283691     total: 4s        remaining: 7.26s
71:     learn: 0.4281811     total: 4.06s     remaining: 7.21s
72:     learn: 0.4278026     total: 4.13s     remaining: 7.18s
73:     learn: 0.4276109     total: 4.18s     remaining: 7.12s
74:     learn: 0.4266909     total: 4.25s     remaining: 7.08s
75:     learn: 0.4265400     total: 4.3s      remaining: 7.02s
76:     learn: 0.4263131     total: 4.37s     remaining: 6.97s
77:     learn: 0.4261276     total: 4.42s     remaining: 6.91s
78:     learn: 0.4259149     total: 4.48s     remaining: 6.86s
79:     learn: 0.4256920     total: 4.53s     remaining: 6.8s
80:     learn: 0.4254901     total: 4.6s      remaining: 6.76s
81:     learn: 0.4252904     total: 4.67s     remaining: 6.71s
82:     learn: 0.4250734     total: 4.72s     remaining: 6.65s
83:     learn: 0.4249780     total: 4.77s     remaining: 6.59s
84:     learn: 0.4246500     total: 4.83s     remaining: 6.53s
85:     learn: 0.4245146     total: 4.87s     remaining: 6.46s
86:     learn: 0.4241838     total: 4.94s     remaining: 6.42s
87:     learn: 0.4240413     total: 4.99s     remaining: 6.35s
88:     learn: 0.4238262     total: 5.04s     remaining: 6.29s
89:     learn: 0.4234218     total: 5.1s      remaining: 6.23s
90:     learn: 0.4232611     total: 5.16s     remaining: 6.17s
91:     learn: 0.4231058     total: 5.2s      remaining: 6.11s
92:     learn: 0.4228190     total: 5.26s     remaining: 6.05s
93:     learn: 0.4226382     total: 5.31s     remaining: 5.99s
94:     learn: 0.4226018     total: 5.36s     remaining: 5.92s
95:     learn: 0.4225278     total: 5.41s     remaining: 5.86s
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96:     learn: 0.4223646     total: 5.45s     remaining: 5.79s
97:     learn: 0.4221897     total: 5.5s      remaining: 5.73s
98:     learn: 0.4216296     total: 5.56s     remaining: 5.67s
99:     learn: 0.4215315     total: 5.63s     remaining: 5.63s
100:    learn: 0.4213828     total: 5.69s     remaining: 5.58s
101:    learn: 0.4210613     total: 5.75s     remaining: 5.53s
102:    learn: 0.4207906     total: 5.82s     remaining: 5.48s
103:    learn: 0.4204956     total: 5.88s     remaining: 5.43s
104:    learn: 0.4202735     total: 5.93s     remaining: 5.37s
105:    learn: 0.4198770     total: 5.98s     remaining: 5.31s
106:    learn: 0.4191968     total: 6.04s     remaining: 5.25s
107:    learn: 0.4190131     total: 6.09s     remaining: 5.19s
108:    learn: 0.4186414     total: 6.15s     remaining: 5.14s
109:    learn: 0.4185669     total: 6.22s     remaining: 5.09s
110:    learn: 0.4184903     total: 6.27s     remaining: 5.03s
111:    learn: 0.4184110     total: 6.33s     remaining: 4.97s
112:    learn: 0.4178655     total: 6.38s     remaining: 4.92s
113:    learn: 0.4177244     total: 6.44s     remaining: 4.86s
114:    learn: 0.4176923     total: 6.49s     remaining: 4.8s
115:    learn: 0.4175279     total: 6.55s     remaining: 4.74s
116:    learn: 0.4172614     total: 6.61s     remaining: 4.69s
117:    learn: 0.4168773     total: 6.67s     remaining: 4.63s
118:    learn: 0.4166551     total: 6.87s     remaining: 4.67s
119:    learn: 0.4163880     total: 6.94s     remaining: 4.63s
120:    learn: 0.4162698     total: 6.99s     remaining: 4.56s
121:    learn: 0.4160897     total: 7.05s     remaining: 4.5s
122:    learn: 0.4154698     total: 7.1s      remaining: 4.44s
123:    learn: 0.4150503     total: 7.15s     remaining: 4.38s
124:    learn: 0.4150033     total: 7.2s      remaining: 4.32s
125:    learn: 0.4148667     total: 7.25s     remaining: 4.26s
126:    learn: 0.4147612     total: 7.3s      remaining: 4.2s
127:    learn: 0.4146955     total: 7.35s     remaining: 4.14s
128:    learn: 0.4145288     total: 7.41s     remaining: 4.08s
129:    learn: 0.4144542     total: 7.46s     remaining: 4.02s
130:    learn: 0.4142887     total: 7.52s     remaining: 3.96s
131:    learn: 0.4140453     total: 7.59s     remaining: 3.91s
132:    learn: 0.4139055     total: 7.64s     remaining: 3.85s
133:    learn: 0.4137667     total: 7.7s      remaining: 3.79s
134:    learn: 0.4136267     total: 7.75s     remaining: 3.73s
135:    learn: 0.4132170     total: 7.81s     remaining: 3.68s
136:    learn: 0.4128035     total: 7.88s     remaining: 3.62s
137:    learn: 0.4122230     total: 7.93s     remaining: 3.56s
138:    learn: 0.4120814     total: 7.99s     remaining: 3.51s
139:    learn: 0.4119042     total: 8.05s     remaining: 3.45s
140:    learn: 0.4116411     total: 8.09s     remaining: 3.39s
141:    learn: 0.4113646     total: 8.15s     remaining: 3.33s
142:    learn: 0.4109640     total: 8.21s     remaining: 3.27s
143:    learn: 0.4107146     total: 8.27s     remaining: 3.21s
```

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144:    learn: 0.4106272    total: 8.32s    remaining: 3.15s
145:    learn: 0.4105288    total: 8.39s    remaining: 3.1s
146:    learn: 0.4104934    total: 8.44s    remaining: 3.04s
147:    learn: 0.4104272    total: 8.49s    remaining: 2.98s
148:    learn: 0.4101601    total: 8.55s    remaining: 2.93s
149:    learn: 0.4100998    total: 8.61s    remaining: 2.87s
150:    learn: 0.4100582    total: 8.67s    remaining: 2.81s
151:    learn: 0.4100026    total: 8.73s    remaining: 2.76s
152:    learn: 0.4099378    total: 8.79s    remaining: 2.7s
153:    learn: 0.4096707    total: 8.85s    remaining: 2.64s
154:    learn: 0.4094873    total: 8.91s    remaining: 2.59s
155:    learn: 0.4093664    total: 8.97s    remaining: 2.53s
156:    learn: 0.4093074    total: 9.04s    remaining: 2.48s
157:    learn: 0.4091886    total: 9.09s    remaining: 2.42s
158:    learn: 0.4089926    total: 9.15s    remaining: 2.36s
159:    learn: 0.4087252    total: 9.21s    remaining: 2.3s
160:    learn: 0.4085046    total: 9.26s    remaining: 2.24s
161:    learn: 0.4084709    total: 9.33s    remaining: 2.19s
162:    learn: 0.4081028    total: 9.39s    remaining: 2.13s
163:    learn: 0.4080199    total: 9.44s    remaining: 2.07s
164:    learn: 0.4078651    total: 9.49s    remaining: 2.01s
165:    learn: 0.4077020    total: 9.56s    remaining: 1.96s
166:    learn: 0.4075527    total: 9.66s    remaining: 1.91s
167:    learn: 0.4073979    total: 9.78s    remaining: 1.86s
168:    learn: 0.4073176    total: 9.86s    remaining: 1.81s
169:    learn: 0.4072818    total: 9.95s    remaining: 1.75s
170:    learn: 0.4072074    total: 10s      remaining: 1.7s
171:    learn: 0.4071055    total: 10.1s    remaining: 1.64s
172:    learn: 0.4070763    total: 10.1s    remaining: 1.58s
173:    learn: 0.4069723    total: 10.2s    remaining: 1.52s
174:    learn: 0.4069030    total: 10.3s    remaining: 1.47s
175:    learn: 0.4068873    total: 10.3s    remaining: 1.41s
176:    learn: 0.4068169    total: 10.4s    remaining: 1.35s
177:    learn: 0.4064653    total: 10.4s    remaining: 1.29s
178:    learn: 0.4062652    total: 10.5s    remaining: 1.23s
179:    learn: 0.4060861    total: 10.5s    remaining: 1.17s
180:    learn: 0.4058863    total: 10.6s    remaining: 1.11s
181:    learn: 0.4057580    total: 10.7s    remaining: 1.06s
182:    learn: 0.4055856    total: 10.8s    remaining: 1s
183:    learn: 0.4053082    total: 10.9s    remaining: 944ms
184:    learn: 0.4050641    total: 10.9s    remaining: 887ms
185:    learn: 0.4050470    total: 11s      remaining: 829ms
186:    learn: 0.4048198    total: 11.1s    remaining: 769ms
187:    learn: 0.4047716    total: 11.1s    remaining: 711ms
188:    learn: 0.4047562    total: 11.2s    remaining: 652ms
189:    learn: 0.4046443    total: 11.2s    remaining: 592ms
190:    learn: 0.4045314    total: 11.3s    remaining: 533ms
191:    learn: 0.4045108    total: 11.4s    remaining: 474ms
```

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192:     learn: 0.4044849     total: 11.4s    remaining: 414ms
193:     learn: 0.4044043     total: 11.5s    remaining: 355ms
194:     learn: 0.4043202     total: 11.5s    remaining: 296ms
195:     learn: 0.4041914     total: 11.6s    remaining: 237ms
196:     learn: 0.4040567     total: 11.6s    remaining: 177ms
197:     learn: 0.4039503     total: 11.7s    remaining: 118ms
198:     learn: 0.4038155     total: 11.8s    remaining: 59.2ms
199:     learn: 0.4034053     total: 11.8s    remaining: 0us
Mean train f1-score of data (CV) 16 is : 0.8163070951880952
Mean test f1-score of data (CV) 16 is : 0.803865841448438
```

```
Shape of data 17 is :
(27303, 10)
Distribution of 17 is :
Yes     14102
No      13201
Name: TIMELY_RESPONSE, dtype: int64

<IPython.core.display.HTML object>

MetricVisualizer(layout=Layout(align_self='stretch', height='500px'))

Train f1_score [Yes]: for data 17 is : 0.8134102553758018
Train f1_score [No]: for data 17 is : 0.8220811694556646
```
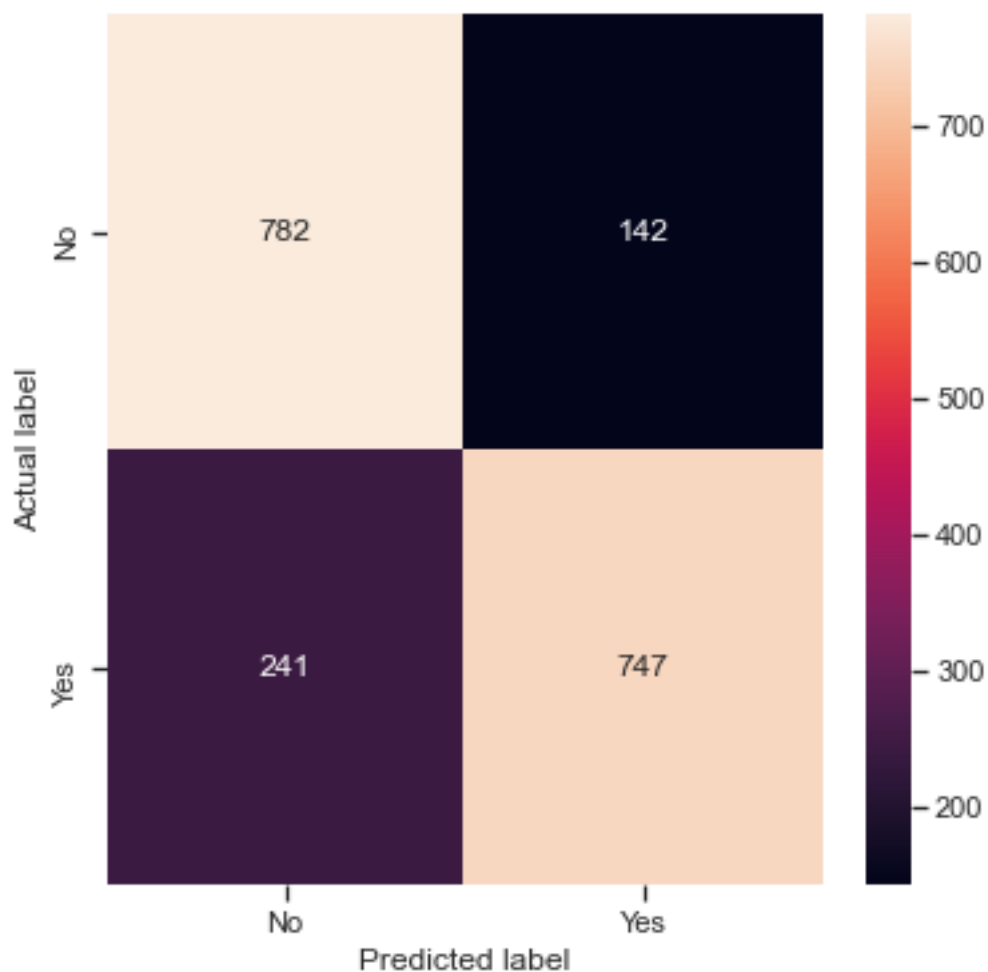
	precision	recall	f1-score	support
No	0.76	0.85	0.80	924
Yes	0.84	0.76	0.80	988
accuracy			0.80	1912
macro avg	0.80	0.80	0.80	1912
weighted avg	0.80	0.80	0.80	1912

```
Cross validation result for data 17 is :
0:      learn: 0.6332397      total: 47.1ms    remaining: 9.37s
1:      learn: 0.5989492      total: 99.8ms    remaining: 9.88s
2:      learn: 0.5714291      total: 150ms     remaining: 9.86s
3:      learn: 0.5495678      total: 202ms     remaining: 9.91s
4:      learn: 0.5258845      total: 273ms     remaining: 10.7s
5:      learn: 0.5088760      total: 330ms     remaining: 10.7s
6:      learn: 0.4967183      total: 378ms     remaining: 10.4s
7:      learn: 0.4882346      total: 426ms     remaining: 10.2s
8:      learn: 0.4802676      total: 503ms     remaining: 10.7s
9:      learn: 0.4752412      total: 575ms     remaining: 10.9s
10:     learn: 0.4716470      total: 611ms     remaining: 10.5s
11:     learn: 0.4675942      total: 665ms     remaining: 10.4s
12:     learn: 0.4643050      total: 711ms     remaining: 10.2s
13:     learn: 0.4610359      total: 774ms     remaining: 10.3s
14:     learn: 0.4578527      total: 826ms     remaining: 10.2s
15:     learn: 0.4557632      total: 895ms     remaining: 10.3s
```

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16:     learn: 0.4541191     total: 946ms     remaining: 10.2s
17:     learn: 0.4523915     total: 1.05s     remaining: 10.6s
18:     learn: 0.4494177     total: 1.1s      remaining: 10.5s
19:     learn: 0.4480701     total: 1.14s     remaining: 10.3s
20:     learn: 0.4464793     total: 1.21s     remaining: 10.3s
21:     learn: 0.4456673     total: 1.28s     remaining: 10.4s
22:     learn: 0.4448266     total: 1.33s     remaining: 10.2s
23:     learn: 0.4440629     total: 1.4s      remaining: 10.2s
24:     learn: 0.4429032     total: 1.44s     remaining: 10.1s
25:     learn: 0.4422690     total: 1.49s     remaining: 9.96s
26:     learn: 0.4415775     total: 1.54s     remaining: 9.85s
27:     learn: 0.4405646     total: 1.58s     remaining: 9.73s
28:     learn: 0.4401825     total: 1.64s     remaining: 9.65s
29:     learn: 0.4383538     total: 1.69s     remaining: 9.58s
30:     learn: 0.4380012     total: 1.74s     remaining: 9.49s
31:     learn: 0.4373932     total: 1.79s     remaining: 9.42s
32:     learn: 0.4369268     total: 1.85s     remaining: 9.38s
33:     learn: 0.4365338     total: 1.9s      remaining: 9.29s
34:     learn: 0.4361234     total: 1.96s     remaining: 9.24s
35:     learn: 0.4353980     total: 2s        remaining: 9.13s
36:     learn: 0.4348428     total: 2.06s     remaining: 9.06s
37:     learn: 0.4339858     total: 2.17s     remaining: 9.23s
38:     learn: 0.4335449     total: 2.21s     remaining: 9.13s
39:     learn: 0.4325476     total: 2.26s     remaining: 9.04s
40:     learn: 0.4321681     total: 2.33s     remaining: 9.04s
41:     learn: 0.4318334     total: 2.38s     remaining: 8.95s
42:     learn: 0.4314593     total: 2.42s     remaining: 8.85s
43:     learn: 0.4310826     total: 2.48s     remaining: 8.78s
44:     learn: 0.4310418     total: 2.53s     remaining: 8.71s
45:     learn: 0.4305843     total: 2.58s     remaining: 8.64s
46:     learn: 0.4303135     total: 2.65s     remaining: 8.61s
47:     learn: 0.4296690     total: 2.7s      remaining: 8.56s
48:     learn: 0.4296672     total: 2.73s     remaining: 8.42s
49:     learn: 0.4294897     total: 2.78s     remaining: 8.33s
50:     learn: 0.4290839     total: 2.84s     remaining: 8.3s
51:     learn: 0.4288780     total: 2.94s     remaining: 8.36s
52:     learn: 0.4286580     total: 3s        remaining: 8.32s
53:     learn: 0.4282398     total: 3.05s     remaining: 8.24s
54:     learn: 0.4281494     total: 3.14s     remaining: 8.27s
55:     learn: 0.4280361     total: 3.18s     remaining: 8.19s
56:     learn: 0.4276498     total: 3.23s     remaining: 8.11s
57:     learn: 0.4272090     total: 3.29s     remaining: 8.07s
58:     learn: 0.4270206     total: 3.35s     remaining: 8.01s
59:     learn: 0.4260401     total: 3.42s     remaining: 7.98s
60:     learn: 0.4255059     total: 3.47s     remaining: 7.9s
61:     learn: 0.4252111     total: 3.52s     remaining: 7.83s
62:     learn: 0.4250147     total: 3.57s     remaining: 7.76s
63:     learn: 0.4241287     total: 3.63s     remaining: 7.72s
```

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64:     learn: 0.4239102     total: 3.69s     remaining: 7.65s
65:     learn: 0.4236908     total: 3.75s     remaining: 7.61s
66:     learn: 0.4234136     total: 3.8s      remaining: 7.54s
67:     learn: 0.4231125     total: 3.85s     remaining: 7.48s
68:     learn: 0.4228526     total: 3.94s     remaining: 7.48s
69:     learn: 0.4226898     total: 4s        remaining: 7.42s
70:     learn: 0.4225571     total: 4.05s     remaining: 7.36s
71:     learn: 0.4224005     total: 4.1s      remaining: 7.3s
72:     learn: 0.4223163     total: 4.15s     remaining: 7.22s
73:     learn: 0.4222550     total: 4.22s     remaining: 7.18s
74:     learn: 0.4222124     total: 4.27s     remaining: 7.12s
75:     learn: 0.4216425     total: 4.35s     remaining: 7.1s
76:     learn: 0.4214192     total: 4.39s     remaining: 7.02s
77:     learn: 0.4213796     total: 4.44s     remaining: 6.95s
78:     learn: 0.4212575     total: 4.5s      remaining: 6.89s
79:     learn: 0.4211052     total: 4.56s     remaining: 6.85s
80:     learn: 0.4209129     total: 4.69s     remaining: 6.89s
81:     learn: 0.4208039     total: 4.75s     remaining: 6.84s
82:     learn: 0.4206759     total: 4.8s      remaining: 6.77s
83:     learn: 0.4206108     total: 4.86s     remaining: 6.71s
84:     learn: 0.4202747     total: 4.93s     remaining: 6.67s
85:     learn: 0.4200064     total: 4.99s     remaining: 6.61s
86:     learn: 0.4195816     total: 5.05s     remaining: 6.55s
87:     learn: 0.4192721     total: 5.1s      remaining: 6.49s
88:     learn: 0.4190418     total: 5.15s     remaining: 6.42s
89:     learn: 0.4189161     total: 5.2s      remaining: 6.36s
90:     learn: 0.4187686     total: 5.25s     remaining: 6.29s
91:     learn: 0.4186732     total: 5.3s      remaining: 6.23s
92:     learn: 0.4183068     total: 5.36s     remaining: 6.17s
93:     learn: 0.4180528     total: 5.4s      remaining: 6.09s
94:     learn: 0.4178880     total: 5.46s     remaining: 6.03s
95:     learn: 0.4177901     total: 5.51s     remaining: 5.96s
96:     learn: 0.4177407     total: 5.55s     remaining: 5.89s
97:     learn: 0.4174313     total: 5.6s      remaining: 5.83s
98:     learn: 0.4172504     total: 5.64s     remaining: 5.75s
99:     learn: 0.4171078     total: 5.69s     remaining: 5.69s
100:    learn: 0.4168902     total: 5.74s     remaining: 5.63s
101:    learn: 0.4167963     total: 5.8s      remaining: 5.57s
102:    learn: 0.4166974     total: 5.92s     remaining: 5.57s
103:    learn: 0.4166511     total: 6s        remaining: 5.54s
104:    learn: 0.4163869     total: 6.05s     remaining: 5.47s
105:    learn: 0.4161803     total: 6.1s      remaining: 5.41s
106:    learn: 0.4160235     total: 6.16s     remaining: 5.36s
107:    learn: 0.4160160     total: 6.21s     remaining: 5.29s
108:    learn: 0.4156735     total: 6.29s     remaining: 5.25s
109:    learn: 0.4152899     total: 6.36s     remaining: 5.21s
110:    learn: 0.4151585     total: 6.45s     remaining: 5.17s
111:    learn: 0.4149434     total: 6.5s      remaining: 5.11s
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112:    learn: 0.4146272        total: 6.56s    remaining: 5.05s
113:    learn: 0.4143700        total: 6.63s    remaining: 5s
114:    learn: 0.4141273        total: 6.71s    remaining: 4.96s
115:    learn: 0.4137992        total: 6.77s    remaining: 4.9s
116:    learn: 0.4137126        total: 6.85s    remaining: 4.86s
117:    learn: 0.4134981        total: 6.93s    remaining: 4.81s
118:    learn: 0.4133895        total: 6.97s    remaining: 4.75s
119:    learn: 0.4130931        total: 7.03s    remaining: 4.69s
120:    learn: 0.4127842        total: 7.09s    remaining: 4.63s
121:    learn: 0.4125822        total: 7.15s    remaining: 4.57s
122:    learn: 0.4119840        total: 7.21s    remaining: 4.51s
123:    learn: 0.4117345        total: 7.27s    remaining: 4.46s
124:    learn: 0.4116033        total: 7.32s    remaining: 4.39s
125:    learn: 0.4114627        total: 7.39s    remaining: 4.34s
126:    learn: 0.4113573        total: 7.44s    remaining: 4.28s
127:    learn: 0.4112077        total: 7.5s     remaining: 4.22s
128:    learn: 0.4109291        total: 7.56s    remaining: 4.16s
129:    learn: 0.4107062        total: 7.63s    remaining: 4.11s
130:    learn: 0.4106133        total: 7.71s    remaining: 4.06s
131:    learn: 0.4104038        total: 7.78s    remaining: 4.01s
132:    learn: 0.4102689        total: 7.83s    remaining: 3.95s
133:    learn: 0.4099375        total: 7.91s    remaining: 3.89s
134:    learn: 0.4092349        total: 7.96s    remaining: 3.83s
135:    learn: 0.4091166        total: 8.02s    remaining: 3.77s
136:    learn: 0.4088927        total: 8.07s    remaining: 3.71s
137:    learn: 0.4086435        total: 8.13s    remaining: 3.65s
138:    learn: 0.4085012        total: 8.18s    remaining: 3.59s
139:    learn: 0.4084656        total: 8.24s    remaining: 3.53s
140:    learn: 0.4083951        total: 8.29s    remaining: 3.47s
141:    learn: 0.4082960        total: 8.33s    remaining: 3.4s
142:    learn: 0.4080525        total: 8.38s    remaining: 3.34s
143:    learn: 0.4079182        total: 8.44s    remaining: 3.28s
144:    learn: 0.4078398        total: 8.52s    remaining: 3.23s
145:    learn: 0.4076361        total: 8.59s    remaining: 3.17s
146:    learn: 0.4072265        total: 8.67s    remaining: 3.13s
147:    learn: 0.4070808        total: 8.74s    remaining: 3.07s
148:    learn: 0.4070753        total: 8.81s    remaining: 3.01s
149:    learn: 0.4068987        total: 8.89s    remaining: 2.96s
150:    learn: 0.4068939        total: 8.93s    remaining: 2.9s
151:    learn: 0.4068543        total: 9s       remaining: 2.84s
152:    learn: 0.4063102        total: 9.05s    remaining: 2.78s
153:    learn: 0.4061625        total: 9.12s    remaining: 2.72s
154:    learn: 0.4061254        total: 9.18s    remaining: 2.67s
155:    learn: 0.4059814        total: 9.25s    remaining: 2.61s
156:    learn: 0.4059560        total: 9.3s     remaining: 2.55s
157:    learn: 0.4057805        total: 9.36s    remaining: 2.49s
158:    learn: 0.4052336        total: 9.42s    remaining: 2.43s
159:    learn: 0.4048557        total: 9.49s    remaining: 2.37s
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160:     learn: 0.4046947          total: 9.54s     remaining: 2.31s
161:     learn: 0.4046404          total: 9.61s     remaining: 2.25s
162:     learn: 0.4046025          total: 9.66s     remaining: 2.19s
163:     learn: 0.4044291          total: 9.73s     remaining: 2.14s
164:     learn: 0.4038989          total: 9.78s     remaining: 2.07s
165:     learn: 0.4038106          total: 9.83s     remaining: 2.01s
166:     learn: 0.4033409          total: 9.89s     remaining: 1.95s
167:     learn: 0.4031008          total: 9.94s     remaining: 1.89s
168:     learn: 0.4029560          total: 10s        remaining: 1.84s
169:     learn: 0.4027543          total: 10.1s     remaining: 1.78s
170:     learn: 0.4025802          total: 10.1s     remaining: 1.72s
171:     learn: 0.4024036          total: 10.2s     remaining: 1.66s
172:     learn: 0.4020849          total: 10.2s     remaining: 1.6s
173:     learn: 0.4020118          total: 10.3s     remaining: 1.54s
174:     learn: 0.4018112          total: 10.3s     remaining: 1.48s
175:     learn: 0.4016411          total: 10.4s     remaining: 1.42s
176:     learn: 0.4012397          total: 10.5s     remaining: 1.36s
177:     learn: 0.4012222          total: 10.5s     remaining: 1.3s
178:     learn: 0.4011920          total: 10.6s     remaining: 1.24s
179:     learn: 0.4010284          total: 10.7s     remaining: 1.18s
180:     learn: 0.4007417          total: 10.7s     remaining: 1.12s
181:     learn: 0.4006470          total: 10.8s     remaining: 1.06s
182:     learn: 0.4004452          total: 10.8s     remaining: 1.01s
183:     learn: 0.4002133          total: 10.9s     remaining: 947ms
184:     learn: 0.3999559          total: 10.9s     remaining: 888ms
185:     learn: 0.3997647          total: 11s        remaining: 828ms
186:     learn: 0.3997047          total: 11.1s     remaining: 768ms
187:     learn: 0.3996202          total: 11.1s     remaining: 709ms
188:     learn: 0.3995502          total: 11.2s     remaining: 650ms
189:     learn: 0.3993212          total: 11.2s     remaining: 591ms
190:     learn: 0.3992784          total: 11.3s     remaining: 532ms
191:     learn: 0.3991524          total: 11.4s     remaining: 474ms
192:     learn: 0.3990178          total: 11.4s     remaining: 414ms
193:     learn: 0.3989472          total: 11.5s     remaining: 355ms
194:     learn: 0.3987152          total: 11.5s     remaining: 296ms
195:     learn: 0.3986222          total: 11.6s     remaining: 237ms
196:     learn: 0.3984481          total: 11.7s     remaining: 178ms
197:     learn: 0.3983291          total: 11.7s     remaining: 118ms
198:     learn: 0.3983027          total: 11.8s     remaining: 59.2ms
199:     learn: 0.3981278          total: 11.8s     remaining: 0us
0:       learn: 0.6292556          total: 42.6ms    remaining: 8.48s
1:       learn: 0.5929708          total: 114ms     remaining: 11.2s
2:       learn: 0.5650509          total: 162ms     remaining: 10.7s
3:       learn: 0.5435044          total: 210ms     remaining: 10.3s
4:       learn: 0.5272007          total: 253ms     remaining: 9.88s
5:       learn: 0.5115982          total: 333ms     remaining: 10.8s
6:       learn: 0.4954079          total: 403ms     remaining: 11.1s
7:       learn: 0.4859866          total: 452ms     remaining: 10.8s
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8:         learn: 0.4791449         total: 501ms    remaining: 10.6s
9:         learn: 0.4724617         total: 555ms    remaining: 10.5s
10:        learn: 0.4683687         total: 603ms    remaining: 10.4s
11:        learn: 0.4621340         total: 667ms    remaining: 10.4s
12:        learn: 0.4584124         total: 735ms    remaining: 10.6s
13:        learn: 0.4544800         total: 785ms    remaining: 10.4s
14:        learn: 0.4523696         total: 830ms    remaining: 10.2s
15:        learn: 0.4498453         total: 894ms    remaining: 10.3s
16:        learn: 0.4482255         total: 945ms    remaining: 10.2s
17:        learn: 0.4464667         total: 1s       remaining: 10.1s
18:        learn: 0.4451344         total: 1.05s    remaining: 10s
19:        learn: 0.4434428         total: 1.11s    remaining: 9.99s
20:        learn: 0.4424576         total: 1.16s    remaining: 9.87s
21:        learn: 0.4414595         total: 1.2s     remaining: 9.75s
22:        learn: 0.4405133         total: 1.26s    remaining: 9.68s
23:        learn: 0.4389654         total: 1.3s     remaining: 9.57s
24:        learn: 0.4371167         total: 1.36s    remaining: 9.52s
25:        learn: 0.4363976         total: 1.41s    remaining: 9.46s
26:        learn: 0.4356742         total: 1.47s    remaining: 9.42s
27:        learn: 0.4346617         total: 1.52s    remaining: 9.32s
28:        learn: 0.4341550         total: 1.58s    remaining: 9.3s
29:        learn: 0.4330994         total: 1.66s    remaining: 9.4s
30:        learn: 0.4328460         total: 1.71s    remaining: 9.3s
31:        learn: 0.4319679         total: 1.76s    remaining: 9.26s
32:        learn: 0.4316680         total: 1.82s    remaining: 9.24s
33:        learn: 0.4312672         total: 1.87s    remaining: 9.15s
34:        learn: 0.4311611         total: 1.9s     remaining: 8.97s
35:        learn: 0.4306243         total: 1.97s    remaining: 8.98s
36:        learn: 0.4301621         total: 2.02s    remaining: 8.9s
37:        learn: 0.4295977         total: 2.09s    remaining: 8.91s
38:        learn: 0.4292229         total: 2.13s    remaining: 8.79s
39:        learn: 0.4288980         total: 2.19s    remaining: 8.77s
40:        learn: 0.4287326         total: 2.26s    remaining: 8.76s
41:        learn: 0.4283811         total: 2.31s    remaining: 8.69s
42:        learn: 0.4281755         total: 2.36s    remaining: 8.61s
43:        learn: 0.4277178         total: 2.44s    remaining: 8.64s
44:        learn: 0.4274421         total: 2.51s    remaining: 8.65s
45:        learn: 0.4272325         total: 2.56s    remaining: 8.56s
46:        learn: 0.4268031         total: 2.61s    remaining: 8.51s
47:        learn: 0.4265190         total: 2.67s    remaining: 8.44s
48:        learn: 0.4261364         total: 2.71s    remaining: 8.36s
49:        learn: 0.4260302         total: 2.76s    remaining: 8.27s
50:        learn: 0.4257620         total: 2.81s    remaining: 8.2s
51:        learn: 0.4251546         total: 2.87s    remaining: 8.17s
52:        learn: 0.4247865         total: 2.92s    remaining: 8.09s
53:        learn: 0.4246469         total: 2.97s    remaining: 8.02s
54:        learn: 0.4244412         total: 3.02s    remaining: 7.95s
55:        learn: 0.4238012         total: 3.08s    remaining: 7.93s
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56:       learn: 0.4236379       total: 3.13s       remaining: 7.86s
57:       learn: 0.4226222       total: 3.2s        remaining: 7.84s
58:       learn: 0.4226222       total: 3.24s       remaining: 7.74s
59:       learn: 0.4223226       total: 3.31s       remaining: 7.73s
60:       learn: 0.4221695       total: 3.36s       remaining: 7.65s
61:       learn: 0.4219876       total: 3.42s       remaining: 7.6s
62:       learn: 0.4219876       total: 3.44s       remaining: 7.47s
63:       learn: 0.4216444       total: 3.47s       remaining: 7.38s
64:       learn: 0.4215208       total: 3.54s       remaining: 7.35s
65:       learn: 0.4212286       total: 3.59s       remaining: 7.29s
66:       learn: 0.4210168       total: 3.64s       remaining: 7.22s
67:       learn: 0.4207100       total: 3.69s       remaining: 7.17s
68:       learn: 0.4204400       total: 3.75s       remaining: 7.13s
69:       learn: 0.4202020       total: 3.82s       remaining: 7.09s
70:       learn: 0.4195671       total: 3.86s       remaining: 7.02s
71:       learn: 0.4194042       total: 3.92s       remaining: 6.98s
72:       learn: 0.4191919       total: 3.97s       remaining: 6.91s
73:       learn: 0.4190261       total: 4.02s       remaining: 6.85s
74:       learn: 0.4187145       total: 4.07s       remaining: 6.78s
75:       learn: 0.4187145       total: 4.1s        remaining: 6.69s
76:       learn: 0.4186271       total: 4.15s       remaining: 6.63s
77:       learn: 0.4180375       total: 4.21s       remaining: 6.58s
78:       learn: 0.4175849       total: 4.26s       remaining: 6.52s
79:       learn: 0.4174508       total: 4.31s       remaining: 6.47s
80:       learn: 0.4172516       total: 4.38s       remaining: 6.44s
81:       learn: 0.4169405       total: 4.45s       remaining: 6.4s
82:       learn: 0.4165367       total: 4.5s        remaining: 6.35s
83:       learn: 0.4164239       total: 4.55s       remaining: 6.28s
84:       learn: 0.4156438       total: 4.6s        remaining: 6.23s
85:       learn: 0.4154653       total: 4.66s       remaining: 6.18s
86:       learn: 0.4153541       total: 4.71s       remaining: 6.11s
87:       learn: 0.4151992       total: 4.76s       remaining: 6.05s
88:       learn: 0.4149993       total: 4.82s       remaining: 6.01s
89:       learn: 0.4148275       total: 4.87s       remaining: 5.95s
90:       learn: 0.4147364       total: 4.93s       remaining: 5.91s
91:       learn: 0.4146626       total: 5s          remaining: 5.87s
92:       learn: 0.4142317       total: 5.05s       remaining: 5.81s
93:       learn: 0.4140443       total: 5.1s        remaining: 5.75s
94:       learn: 0.4133448       total: 5.15s       remaining: 5.69s
95:       learn: 0.4127127       total: 5.2s        remaining: 5.63s
96:       learn: 0.4125231       total: 5.25s       remaining: 5.58s
97:       learn: 0.4124121       total: 5.3s        remaining: 5.52s
98:       learn: 0.4121125       total: 5.35s       remaining: 5.46s
99:       learn: 0.4112874       total: 5.42s       remaining: 5.42s
100:      learn: 0.4110749       total: 5.51s       remaining: 5.41s
101:      learn: 0.4109694       total: 5.56s       remaining: 5.34s
102:      learn: 0.4108023       total: 5.61s       remaining: 5.28s
103:      learn: 0.4103920       total: 5.67s       remaining: 5.24s
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104:    learn: 0.4100339    total: 5.74s    remaining: 5.19s
105:    learn: 0.4097958    total: 5.79s    remaining: 5.14s
106:    learn: 0.4093354    total: 5.86s    remaining: 5.09s
107:    learn: 0.4093024    total: 5.91s    remaining: 5.04s
108:    learn: 0.4092503    total: 5.97s    remaining: 4.98s
109:    learn: 0.4091632    total: 6.01s    remaining: 4.92s
110:    learn: 0.4087308    total: 6.08s    remaining: 4.88s
111:    learn: 0.4084381    total: 6.14s    remaining: 4.82s
112:    learn: 0.4082818    total: 6.19s    remaining: 4.76s
113:    learn: 0.4081230    total: 6.24s    remaining: 4.71s
114:    learn: 0.4080874    total: 6.29s    remaining: 4.65s
115:    learn: 0.4080765    total: 6.35s    remaining: 4.6s
116:    learn: 0.4079029    total: 6.42s    remaining: 4.55s
117:    learn: 0.4075296    total: 6.48s    remaining: 4.5s
118:    learn: 0.4070898    total: 6.52s    remaining: 4.44s
119:    learn: 0.4068625    total: 6.58s    remaining: 4.38s
120:    learn: 0.4068044    total: 6.67s    remaining: 4.35s
121:    learn: 0.4067916    total: 6.71s    remaining: 4.29s
122:    learn: 0.4064195    total: 6.76s    remaining: 4.23s
123:    learn: 0.4059969    total: 6.81s    remaining: 4.17s
124:    learn: 0.4059757    total: 6.87s    remaining: 4.12s
125:    learn: 0.4057175    total: 7.03s    remaining: 4.13s
126:    learn: 0.4054429    total: 7.11s    remaining: 4.09s
127:    learn: 0.4054385    total: 7.17s    remaining: 4.03s
128:    learn: 0.4051120    total: 7.23s    remaining: 3.98s
129:    learn: 0.4050982    total: 7.29s    remaining: 3.92s
130:    learn: 0.4047848    total: 7.33s    remaining: 3.86s
131:    learn: 0.4047555    total: 7.38s    remaining: 3.8s
132:    learn: 0.4045893    total: 7.44s    remaining: 3.75s
133:    learn: 0.4043468    total: 7.5s     remaining: 3.7s
134:    learn: 0.4040392    total: 7.56s    remaining: 3.64s
135:    learn: 0.4038068    total: 7.62s    remaining: 3.58s
136:    learn: 0.4038064    total: 7.67s    remaining: 3.52s
137:    learn: 0.4034920    total: 7.74s    remaining: 3.48s
138:    learn: 0.4031487    total: 7.79s    remaining: 3.42s
139:    learn: 0.4028072    total: 7.87s    remaining: 3.37s
140:    learn: 0.4026690    total: 7.91s    remaining: 3.31s
141:    learn: 0.4023462    total: 7.99s    remaining: 3.26s
142:    learn: 0.4020842    total: 8.06s    remaining: 3.21s
143:    learn: 0.4019171    total: 8.11s    remaining: 3.15s
144:    learn: 0.4017878    total: 8.18s    remaining: 3.1s
145:    learn: 0.4017333    total: 8.23s    remaining: 3.04s
146:    learn: 0.4016909    total: 8.29s    remaining: 2.99s
147:    learn: 0.4016781    total: 8.36s    remaining: 2.94s
148:    learn: 0.4013361    total: 8.41s    remaining: 2.88s
149:    learn: 0.4011391    total: 8.46s    remaining: 2.82s
150:    learn: 0.4010648    total: 8.53s    remaining: 2.77s
151:    learn: 0.4008865    total: 8.59s    remaining: 2.71s
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152:    learn: 0.4007769    total: 8.63s    remaining: 2.65s
153:    learn: 0.4003940    total: 8.68s    remaining: 2.59s
154:    learn: 0.4001544    total: 8.73s    remaining: 2.53s
155:    learn: 0.3999895    total: 8.78s    remaining: 2.48s
156:    learn: 0.3997801    total: 8.84s    remaining: 2.42s
157:    learn: 0.3994336    total: 8.91s    remaining: 2.37s
158:    learn: 0.3993555    total: 8.96s    remaining: 2.31s
159:    learn: 0.3993552    total: 9.01s    remaining: 2.25s
160:    learn: 0.3992973    total: 9.06s    remaining: 2.19s
161:    learn: 0.3990913    total: 9.12s    remaining: 2.14s
162:    learn: 0.3989036    total: 9.17s    remaining: 2.08s
163:    learn: 0.3986484    total: 9.23s    remaining: 2.02s
164:    learn: 0.3985615    total: 9.29s    remaining: 1.97s
165:    learn: 0.3984831    total: 9.36s    remaining: 1.92s
166:    learn: 0.3984321    total: 9.41s    remaining: 1.86s
167:    learn: 0.3982944    total: 9.48s    remaining: 1.8s
168:    learn: 0.3982040    total: 9.53s    remaining: 1.75s
169:    learn: 0.3979169    total: 9.59s    remaining: 1.69s
170:    learn: 0.3978317    total: 9.64s    remaining: 1.63s
171:    learn: 0.3976727    total: 9.69s    remaining: 1.58s
172:    learn: 0.3973876    total: 9.74s    remaining: 1.52s
173:    learn: 0.3971666    total: 9.81s    remaining: 1.47s
174:    learn: 0.3968182    total: 9.86s    remaining: 1.41s
175:    learn: 0.3966563    total: 9.91s    remaining: 1.35s
176:    learn: 0.3964059    total: 9.96s    remaining: 1.29s
177:    learn: 0.3962766    total: 10s      remaining: 1.24s
178:    learn: 0.3960086    total: 10.1s    remaining: 1.18s
179:    learn: 0.3958174    total: 10.1s    remaining: 1.13s
180:    learn: 0.3957094    total: 10.2s    remaining: 1.07s
181:    learn: 0.3955807    total: 10.2s    remaining: 1.01s
182:    learn: 0.3954162    total: 10.3s    remaining: 956ms
183:    learn: 0.3953382    total: 10.3s    remaining: 899ms
184:    learn: 0.3952257    total: 10.4s    remaining: 844ms
185:    learn: 0.3951177    total: 10.5s    remaining: 787ms
186:    learn: 0.3948798    total: 10.5s    remaining: 731ms
187:    learn: 0.3947821    total: 10.6s    remaining: 674ms
188:    learn: 0.3945904    total: 10.6s    remaining: 618ms
189:    learn: 0.3942489    total: 10.7s    remaining: 561ms
190:    learn: 0.3941071    total: 10.7s    remaining: 504ms
191:    learn: 0.3939796    total: 10.8s    remaining: 448ms
192:    learn: 0.3936884    total: 10.8s    remaining: 393ms
193:    learn: 0.3935516    total: 10.9s    remaining: 337ms
194:    learn: 0.3934905    total: 10.9s    remaining: 281ms
195:    learn: 0.3933199    total: 11s      remaining: 224ms
196:    learn: 0.3932022    total: 11.1s    remaining: 168ms
197:    learn: 0.3931945    total: 11.1s    remaining: 112ms
198:    learn: 0.3930958    total: 11.2s    remaining: 56.1ms
199:    learn: 0.3930906    total: 11.2s    remaining: 0us
```

```
0:      learn: 0.6354621      total: 42.9ms    remaining: 8.53s
1:      learn: 0.5994288      total: 88.1ms    remaining: 8.72s
2:      learn: 0.5639293      total: 134ms     remaining: 8.8s
3:      learn: 0.5438367      total: 193ms     remaining: 9.43s
4:      learn: 0.5278307      total: 234ms     remaining: 9.13s
5:      learn: 0.5123522      total: 286ms     remaining: 9.25s
6:      learn: 0.4987336      total: 348ms     remaining: 9.6s
7:      learn: 0.4893547      total: 423ms     remaining: 10.1s
8:      learn: 0.4810013      total: 482ms     remaining: 10.2s
9:      learn: 0.4743987      total: 547ms     remaining: 10.4s
10:     learn: 0.4691114      total: 610ms     remaining: 10.5s
11:     learn: 0.4648940      total: 668ms     remaining: 10.5s
12:     learn: 0.4608141      total: 716ms     remaining: 10.3s
13:     learn: 0.4572210      total: 767ms     remaining: 10.2s
14:     learn: 0.4542032      total: 815ms     remaining: 10s
15:     learn: 0.4523176      total: 860ms     remaining: 9.89s
16:     learn: 0.4507464      total: 906ms     remaining: 9.76s
17:     learn: 0.4486230      total: 949ms     remaining: 9.6s
18:     learn: 0.4469242      total: 996ms     remaining: 9.49s
19:     learn: 0.4459053      total: 1.04s     remaining: 9.39s
20:     learn: 0.4447696      total: 1.09s     remaining: 9.27s
21:     learn: 0.4438744      total: 1.13s     remaining: 9.13s
22:     learn: 0.4431293      total: 1.18s     remaining: 9.08s
23:     learn: 0.4420973      total: 1.23s     remaining: 9.02s
24:     learn: 0.4415091      total: 1.28s     remaining: 8.95s
25:     learn: 0.4406917      total: 1.33s     remaining: 8.89s
26:     learn: 0.4402013      total: 1.38s     remaining: 8.82s
27:     learn: 0.4392208      total: 1.43s     remaining: 8.78s
28:     learn: 0.4387038      total: 1.48s     remaining: 8.73s
29:     learn: 0.4383679      total: 1.53s     remaining: 8.65s
30:     learn: 0.4379351      total: 1.57s     remaining: 8.59s
31:     learn: 0.4367593      total: 1.63s     remaining: 8.54s
32:     learn: 0.4365887      total: 1.67s     remaining: 8.46s
33:     learn: 0.4356981      total: 1.73s     remaining: 8.47s
34:     learn: 0.4349477      total: 1.8s      remaining: 8.5s
35:     learn: 0.4343655      total: 1.85s     remaining: 8.43s
36:     learn: 0.4331645      total: 1.91s     remaining: 8.44s
37:     learn: 0.4325767      total: 1.98s     remaining: 8.45s
38:     learn: 0.4322058      total: 2.04s     remaining: 8.41s
39:     learn: 0.4318928      total: 2.09s     remaining: 8.36s
40:     learn: 0.4315893      total: 2.13s     remaining: 8.28s
41:     learn: 0.4311803      total: 2.19s     remaining: 8.26s
42:     learn: 0.4308042      total: 2.28s     remaining: 8.33s
43:     learn: 0.4307281      total: 2.33s     remaining: 8.25s
44:     learn: 0.4304884      total: 2.37s     remaining: 8.18s
45:     learn: 0.4302218      total: 2.43s     remaining: 8.13s
46:     learn: 0.4301346      total: 2.48s     remaining: 8.07s
47:     learn: 0.4294922      total: 2.54s     remaining: 8.05s
```

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48:     learn: 0.4292961      total: 2.58s     remaining: 7.96s
49:     learn: 0.4284157      total: 2.63s     remaining: 7.9s
50:     learn: 0.4279487      total: 2.68s     remaining: 7.83s
51:     learn: 0.4274827      total: 2.73s     remaining: 7.77s
52:     learn: 0.4272557      total: 2.79s     remaining: 7.74s
53:     learn: 0.4271056      total: 2.86s     remaining: 7.74s
54:     learn: 0.4267216      total: 2.91s     remaining: 7.67s
55:     learn: 0.4265281      total: 2.97s     remaining: 7.64s
56:     learn: 0.4263528      total: 3.02s     remaining: 7.58s
57:     learn: 0.4261438      total: 3.07s     remaining: 7.51s
58:     learn: 0.4259285      total: 3.12s     remaining: 7.46s
59:     learn: 0.4257267      total: 3.18s     remaining: 7.41s
60:     learn: 0.4253796      total: 3.25s     remaining: 7.42s
61:     learn: 0.4252488      total: 3.31s     remaining: 7.38s
62:     learn: 0.4247906      total: 3.37s     remaining: 7.32s
63:     learn: 0.4242824      total: 3.43s     remaining: 7.29s
64:     learn: 0.4240979      total: 3.5s      remaining: 7.26s
65:     learn: 0.4238440      total: 3.54s     remaining: 7.2s
66:     learn: 0.4236682      total: 3.59s     remaining: 7.13s
67:     learn: 0.4232163      total: 3.64s     remaining: 7.06s
68:     learn: 0.4229677      total: 3.68s     remaining: 6.99s
69:     learn: 0.4228842      total: 3.74s     remaining: 6.94s
70:     learn: 0.4228397      total: 3.78s     remaining: 6.87s
71:     learn: 0.4226797      total: 3.85s     remaining: 6.84s
72:     learn: 0.4222736      total: 3.89s     remaining: 6.77s
73:     learn: 0.4220529      total: 3.94s     remaining: 6.71s
74:     learn: 0.4217732      total: 3.99s     remaining: 6.65s
75:     learn: 0.4216490      total: 4.04s     remaining: 6.59s
76:     learn: 0.4214833      total: 4.1s      remaining: 6.55s
77:     learn: 0.4211098      total: 4.16s     remaining: 6.51s
78:     learn: 0.4209400      total: 4.21s     remaining: 6.46s
79:     learn: 0.4209400      total: 4.22s     remaining: 6.34s
80:     learn: 0.4206848      total: 4.27s     remaining: 6.27s
81:     learn: 0.4205867      total: 4.31s     remaining: 6.2s
82:     learn: 0.4202512      total: 4.37s     remaining: 6.16s
83:     learn: 0.4201271      total: 4.43s     remaining: 6.11s
84:     learn: 0.4198634      total: 4.47s     remaining: 6.05s
85:     learn: 0.4196038      total: 4.52s     remaining: 5.99s
86:     learn: 0.4195275      total: 4.58s     remaining: 5.95s
87:     learn: 0.4194420      total: 4.63s     remaining: 5.9s
88:     learn: 0.4191695      total: 4.7s      remaining: 5.86s
89:     learn: 0.4189882      total: 4.75s     remaining: 5.8s
90:     learn: 0.4186784      total: 4.8s      remaining: 5.75s
91:     learn: 0.4185488      total: 4.84s     remaining: 5.69s
92:     learn: 0.4180568      total: 4.9s      remaining: 5.64s
93:     learn: 0.4179854      total: 4.94s     remaining: 5.57s
94:     learn: 0.4177731      total: 5.01s     remaining: 5.53s
95:     learn: 0.4175824      total: 5.05s     remaining: 5.47s
```

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96:     learn: 0.4173609     total: 5.09s     remaining: 5.41s
97:     learn: 0.4171533     total: 5.16s     remaining: 5.37s
98:     learn: 0.4164689     total: 5.21s     remaining: 5.31s
99:     learn: 0.4162374     total: 5.26s     remaining: 5.26s
100:    learn: 0.4160577     total: 5.32s     remaining: 5.21s
101:    learn: 0.4159925     total: 5.39s     remaining: 5.18s
102:    learn: 0.4158151     total: 5.44s     remaining: 5.12s
103:    learn: 0.4155632     total: 5.49s     remaining: 5.06s
104:    learn: 0.4151918     total: 5.55s     remaining: 5.02s
105:    learn: 0.4149464     total: 5.6s      remaining: 4.97s
106:    learn: 0.4142886     total: 5.64s     remaining: 4.91s
107:    learn: 0.4138280     total: 5.71s     remaining: 4.86s
108:    learn: 0.4138162     total: 5.75s     remaining: 4.8s
109:    learn: 0.4136673     total: 5.82s     remaining: 4.76s
110:    learn: 0.4135342     total: 5.87s     remaining: 4.71s
111:    learn: 0.4132836     total: 5.92s     remaining: 4.65s
112:    learn: 0.4129398     total: 5.96s     remaining: 4.59s
113:    learn: 0.4126858     total: 6.03s     remaining: 4.55s
114:    learn: 0.4121615     total: 6.07s     remaining: 4.49s
115:    learn: 0.4119847     total: 6.12s     remaining: 4.43s
116:    learn: 0.4118392     total: 6.17s     remaining: 4.38s
117:    learn: 0.4116155     total: 6.23s     remaining: 4.33s
118:    learn: 0.4114737     total: 6.28s     remaining: 4.28s
119:    learn: 0.4108853     total: 6.33s     remaining: 4.22s
120:    learn: 0.4107425     total: 6.38s     remaining: 4.17s
121:    learn: 0.4100699     total: 6.44s     remaining: 4.12s
122:    learn: 0.4098844     total: 6.5s      remaining: 4.07s
123:    learn: 0.4097196     total: 6.56s     remaining: 4.02s
124:    learn: 0.4095684     total: 6.6s      remaining: 3.96s
125:    learn: 0.4093932     total: 6.65s     remaining: 3.9s
126:    learn: 0.4091749     total: 6.7s      remaining: 3.85s
127:    learn: 0.4089781     total: 6.74s     remaining: 3.79s
128:    learn: 0.4087139     total: 6.81s     remaining: 3.75s
129:    learn: 0.4082130     total: 6.87s     remaining: 3.7s
130:    learn: 0.4080856     total: 6.94s     remaining: 3.66s
131:    learn: 0.4078938     total: 7s        remaining: 3.61s
132:    learn: 0.4077596     total: 7.07s     remaining: 3.56s
133:    learn: 0.4075923     total: 7.13s     remaining: 3.51s
134:    learn: 0.4073322     total: 7.18s     remaining: 3.46s
135:    learn: 0.4071704     total: 7.24s     remaining: 3.4s
136:    learn: 0.4070931     total: 7.28s     remaining: 3.35s
137:    learn: 0.4068412     total: 7.35s     remaining: 3.3s
138:    learn: 0.4068225     total: 7.42s     remaining: 3.25s
139:    learn: 0.4063703     total: 7.47s     remaining: 3.2s
140:    learn: 0.4062387     total: 7.55s     remaining: 3.16s
141:    learn: 0.4060814     total: 7.61s     remaining: 3.11s
142:    learn: 0.4059239     total: 7.67s     remaining: 3.06s
143:    learn: 0.4058611     total: 7.75s     remaining: 3.01s
```

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144:    learn: 0.4056297      total: 7.79s      remaining: 2.96s
145:    learn: 0.4054836      total: 7.84s      remaining: 2.9s
146:    learn: 0.4054046      total: 7.9s       remaining: 2.85s
147:    learn: 0.4052676      total: 7.95s      remaining: 2.79s
148:    learn: 0.4049263      total: 8.01s      remaining: 2.74s
149:    learn: 0.4048039      total: 8.08s      remaining: 2.69s
150:    learn: 0.4044678      total: 8.14s      remaining: 2.64s
151:    learn: 0.4039026      total: 8.2s       remaining: 2.59s
152:    learn: 0.4037792      total: 8.26s      remaining: 2.54s
153:    learn: 0.4036399      total: 8.33s      remaining: 2.49s
154:    learn: 0.4033702      total: 8.39s      remaining: 2.44s
155:    learn: 0.4030936      total: 8.44s      remaining: 2.38s
156:    learn: 0.4030607      total: 8.51s      remaining: 2.33s
157:    learn: 0.4029787      total: 8.6s       remaining: 2.29s
158:    learn: 0.4029628      total: 8.67s      remaining: 2.24s
159:    learn: 0.4027819      total: 8.73s      remaining: 2.18s
160:    learn: 0.4026473      total: 8.81s      remaining: 2.13s
161:    learn: 0.4026216      total: 8.86s      remaining: 2.08s
162:    learn: 0.4025041      total: 8.92s      remaining: 2.02s
163:    learn: 0.4022948      total: 8.97s      remaining: 1.97s
164:    learn: 0.4022694      total: 9.03s      remaining: 1.92s
165:    learn: 0.4021564      total: 9.09s      remaining: 1.86s
166:    learn: 0.4020093      total: 9.15s      remaining: 1.81s
167:    learn: 0.4018869      total: 9.21s      remaining: 1.75s
168:    learn: 0.4018511      total: 9.26s      remaining: 1.7s
169:    learn: 0.4016891      total: 9.32s      remaining: 1.64s
170:    learn: 0.4014746      total: 9.38s      remaining: 1.59s
171:    learn: 0.4009040      total: 9.43s      remaining: 1.53s
172:    learn: 0.4008683      total: 9.48s      remaining: 1.48s
173:    learn: 0.4007258      total: 9.55s      remaining: 1.43s
174:    learn: 0.4006435      total: 9.6s       remaining: 1.37s
175:    learn: 0.4005484      total: 9.65s      remaining: 1.31s
176:    learn: 0.4002561      total: 9.7s       remaining: 1.26s
177:    learn: 0.4001838      total: 9.77s      remaining: 1.21s
178:    learn: 0.3998757      total: 9.83s      remaining: 1.15s
179:    learn: 0.3997562      total: 9.89s      remaining: 1.1s
180:    learn: 0.3994424      total: 9.95s      remaining: 1.04s
181:    learn: 0.3992432      total: 10s        remaining: 990ms
182:    learn: 0.3990154      total: 10.1s      remaining: 937ms
183:    learn: 0.3987483      total: 10.1s      remaining: 882ms
184:    learn: 0.3984887      total: 10.2s      remaining: 828ms
185:    learn: 0.3983517      total: 10.3s      remaining: 775ms
186:    learn: 0.3981913      total: 10.4s      remaining: 721ms
187:    learn: 0.3979839      total: 10.4s      remaining: 666ms
188:    learn: 0.3977485      total: 10.5s      remaining: 611ms
189:    learn: 0.3975827      total: 10.6s      remaining: 556ms
190:    learn: 0.3974830      total: 10.6s      remaining: 500ms
191:    learn: 0.3971864      total: 10.7s      remaining: 445ms
```

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192:     learn: 0.3970287        total: 10.7s    remaining: 390ms
193:     learn: 0.3968569        total: 10.8s    remaining: 334ms
194:     learn: 0.3965956        total: 10.9s    remaining: 279ms
195:     learn: 0.3965220        total: 10.9s    remaining: 223ms
196:     learn: 0.3964753        total: 11s      remaining: 167ms
197:     learn: 0.3964503        total: 11.1s    remaining: 112ms
198:     learn: 0.3962717        total: 11.1s    remaining: 55.9ms
199:     learn: 0.3962052        total: 11.2s    remaining: 0us
Mean train f1-score of data (CV) 17 is : 0.8187103188208235
Mean test f1-score of data (CV) 17 is : 0.805124501091643
```

```
Shape of data 18 is :
(27303, 10)
Distribution of 18 is :
Yes    14102
No     13201
Name: TIMELY_RESPONSE, dtype: int64

<IPython.core.display.HTML object>

MetricVisualizer(layout=Layout(align_self='stretch', height='500px'))

Train f1_score [Yes]: for data 18 is : 0.8128542914171656
Train f1_score [No]: for data 18 is : 0.8178143945282138
```
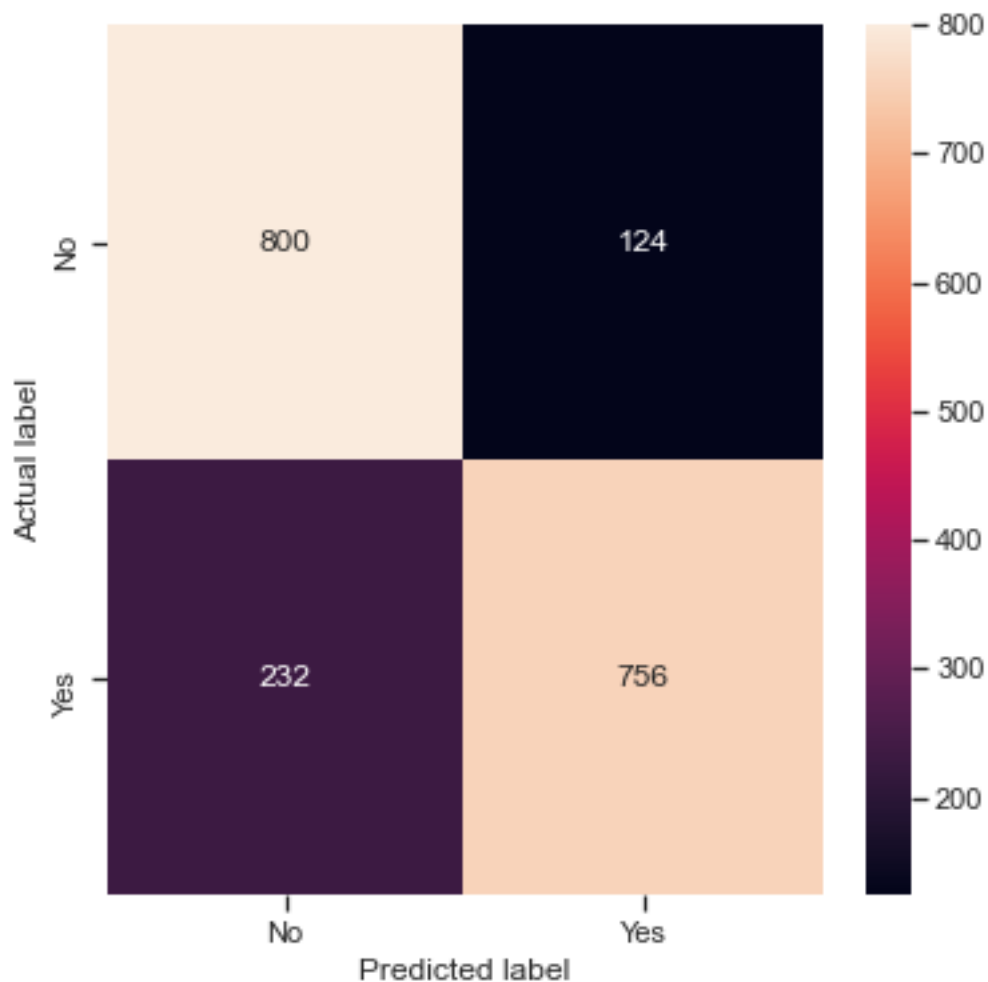
	precision	recall	f1-score	support
No	0.78	0.87	0.82	924
Yes	0.86	0.77	0.81	988
accuracy			0.81	1912
macro avg	0.82	0.82	0.81	1912
weighted avg	0.82	0.81	0.81	1912

```
Cross validation result for data 18 is :
0:      learn: 0.6325060      total: 44.6ms    remaining: 8.88s
1:      learn: 0.5984926      total: 97.4ms    remaining: 9.65s
2:      learn: 0.5710843      total: 141ms     remaining: 9.28s
3:      learn: 0.5492065      total: 203ms     remaining: 9.96s
4:      learn: 0.5329928      total: 253ms     remaining: 9.85s
5:      learn: 0.5120673      total: 301ms     remaining: 9.75s
6:      learn: 0.5024404      total: 347ms     remaining: 9.56s
7:      learn: 0.4922331      total: 389ms     remaining: 9.33s
8:      learn: 0.4852335      total: 455ms     remaining: 9.65s
9:      learn: 0.4771550      total: 525ms     remaining: 9.98s
10:     learn: 0.4722389      total: 572ms     remaining: 9.82s
11:     learn: 0.4687045      total: 639ms     remaining: 10s
12:     learn: 0.4650687      total: 703ms     remaining: 10.1s
13:     learn: 0.4609063      total: 760ms     remaining: 10.1s
14:     learn: 0.4586623      total: 823ms     remaining: 10.2s
```

```
15:      learn: 0.4560646      total: 876ms     remaining: 10.1s
16:      learn: 0.4541709      total: 947ms     remaining: 10.2s
17:      learn: 0.4518279      total: 1000ms    remaining: 10.1s
18:      learn: 0.4507733      total: 1.06s     remaining: 10.1s
19:      learn: 0.4500442      total: 1.11s     remaining: 9.97s
20:      learn: 0.4486340      total: 1.18s     remaining: 10.1s
21:      learn: 0.4477076      total: 1.23s     remaining: 9.97s
22:      learn: 0.4468018      total: 1.27s     remaining: 9.8s
23:      learn: 0.4449945      total: 1.32s     remaining: 9.67s
24:      learn: 0.4438234      total: 1.37s     remaining: 9.57s
25:      learn: 0.4432685      total: 1.4s      remaining: 9.35s
26:      learn: 0.4426612      total: 1.45s     remaining: 9.3s
27:      learn: 0.4421707      total: 1.51s     remaining: 9.29s
28:      learn: 0.4414861      total: 1.57s     remaining: 9.28s
29:      learn: 0.4408924      total: 1.62s     remaining: 9.19s
30:      learn: 0.4402580      total: 1.69s     remaining: 9.2s
31:      learn: 0.4395624      total: 1.75s     remaining: 9.16s
32:      learn: 0.4390738      total: 1.79s     remaining: 9.09s
33:      learn: 0.4387674      total: 1.86s     remaining: 9.09s
34:      learn: 0.4382784      total: 1.92s     remaining: 9.07s
35:      learn: 0.4380412      total: 1.99s     remaining: 9.07s
36:      learn: 0.4371916      total: 2.05s     remaining: 9.05s
37:      learn: 0.4368092      total: 2.14s     remaining: 9.11s
38:      learn: 0.4366792      total: 2.18s     remaining: 8.99s
39:      learn: 0.4364328      total: 2.22s     remaining: 8.89s
40:      learn: 0.4362946      total: 2.26s     remaining: 8.78s
41:      learn: 0.4360822      total: 2.33s     remaining: 8.76s
42:      learn: 0.4355918      total: 2.38s     remaining: 8.68s
43:      learn: 0.4355279      total: 2.45s     remaining: 8.69s
44:      learn: 0.4355256      total: 2.47s     remaining: 8.51s
45:      learn: 0.4345265      total: 2.52s     remaining: 8.43s
46:      learn: 0.4343622      total: 2.6s      remaining: 8.46s
47:      learn: 0.4341802      total: 2.65s     remaining: 8.39s
48:      learn: 0.4337460      total: 2.7s      remaining: 8.32s
49:      learn: 0.4335727      total: 2.78s     remaining: 8.34s
50:      learn: 0.4329136      total: 2.84s     remaining: 8.29s
51:      learn: 0.4327010      total: 2.88s     remaining: 8.21s
52:      learn: 0.4326414      total: 2.93s     remaining: 8.13s
53:      learn: 0.4322733      total: 3s        remaining: 8.11s
54:      learn: 0.4318839      total: 3.07s     remaining: 8.1s
55:      learn: 0.4312220      total: 3.13s     remaining: 8.04s
56:      learn: 0.4311869      total: 3.21s     remaining: 8.04s
57:      learn: 0.4306505      total: 3.27s     remaining: 8s
58:      learn: 0.4303890      total: 3.31s     remaining: 7.91s
59:      learn: 0.4299798      total: 3.38s     remaining: 7.89s
60:      learn: 0.4298420      total: 3.45s     remaining: 7.86s
61:      learn: 0.4297316      total: 3.51s     remaining: 7.8s
62:      learn: 0.4294869      total: 3.55s     remaining: 7.72s
```

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63:     learn: 0.4294226     total: 3.61s    remaining: 7.67s
64:     learn: 0.4292747     total: 3.69s    remaining: 7.67s
65:     learn: 0.4291048     total: 3.74s    remaining: 7.6s
66:     learn: 0.4290180     total: 3.79s    remaining: 7.53s
67:     learn: 0.4289790     total: 3.83s    remaining: 7.44s
68:     learn: 0.4287129     total: 3.89s    remaining: 7.39s
69:     learn: 0.4283804     total: 3.95s    remaining: 7.34s
70:     learn: 0.4279817     total: 3.99s    remaining: 7.26s
71:     learn: 0.4278393     total: 4.04s    remaining: 7.18s
72:     learn: 0.4275184     total: 4.1s     remaining: 7.13s
73:     learn: 0.4272452     total: 4.15s    remaining: 7.07s
74:     learn: 0.4270850     total: 4.21s    remaining: 7.01s
75:     learn: 0.4270102     total: 4.27s    remaining: 6.97s
76:     learn: 0.4266873     total: 4.31s    remaining: 6.89s
77:     learn: 0.4262073     total: 4.36s    remaining: 6.82s
78:     learn: 0.4259989     total: 4.43s    remaining: 6.79s
79:     learn: 0.4259570     total: 4.5s     remaining: 6.75s
80:     learn: 0.4259004     total: 4.56s    remaining: 6.7s
81:     learn: 0.4257702     total: 4.71s    remaining: 6.78s
82:     learn: 0.4255443     total: 4.79s    remaining: 6.76s
83:     learn: 0.4253876     total: 4.84s    remaining: 6.69s
84:     learn: 0.4251160     total: 4.9s     remaining: 6.62s
85:     learn: 0.4250204     total: 4.95s    remaining: 6.57s
86:     learn: 0.4247628     total: 5.02s    remaining: 6.52s
87:     learn: 0.4242988     total: 5.06s    remaining: 6.44s
88:     learn: 0.4242076     total: 5.13s    remaining: 6.39s
89:     learn: 0.4235005     total: 5.18s    remaining: 6.33s
90:     learn: 0.4232305     total: 5.24s    remaining: 6.28s
91:     learn: 0.4228647     total: 5.29s    remaining: 6.21s
92:     learn: 0.4226511     total: 5.34s    remaining: 6.15s
93:     learn: 0.4222401     total: 5.46s    remaining: 6.15s
94:     learn: 0.4221039     total: 5.57s    remaining: 6.16s
95:     learn: 0.4220401     total: 5.63s    remaining: 6.09s
96:     learn: 0.4218602     total: 5.69s    remaining: 6.04s
97:     learn: 0.4216671     total: 5.74s    remaining: 5.98s
98:     learn: 0.4214901     total: 5.8s     remaining: 5.92s
99:     learn: 0.4214460     total: 5.84s    remaining: 5.84s
100:    learn: 0.4211791     total: 5.89s    remaining: 5.77s
101:    learn: 0.4210566     total: 5.95s    remaining: 5.71s
102:    learn: 0.4209875     total: 6s       remaining: 5.66s
103:    learn: 0.4204635     total: 6.05s    remaining: 5.59s
104:    learn: 0.4204417     total: 6.13s    remaining: 5.54s
105:    learn: 0.4202534     total: 6.19s    remaining: 5.49s
106:    learn: 0.4199371     total: 6.24s    remaining: 5.42s
107:    learn: 0.4197030     total: 6.29s    remaining: 5.36s
108:    learn: 0.4195589     total: 6.36s    remaining: 5.31s
109:    learn: 0.4195374     total: 6.41s    remaining: 5.25s
110:    learn: 0.4193843     total: 6.47s    remaining: 5.18s
```

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111:    learn: 0.4186455    total: 6.52s    remaining: 5.12s
112:    learn: 0.4184908    total: 6.57s    remaining: 5.06s
113:    learn: 0.4184144    total: 6.63s    remaining: 5s
114:    learn: 0.4180655    total: 6.69s    remaining: 4.94s
115:    learn: 0.4180375    total: 6.73s    remaining: 4.88s
116:    learn: 0.4179418    total: 6.8s     remaining: 4.82s
117:    learn: 0.4175097    total: 6.87s    remaining: 4.78s
118:    learn: 0.4172382    total: 6.92s    remaining: 4.71s
119:    learn: 0.4171159    total: 6.97s    remaining: 4.65s
120:    learn: 0.4165334    total: 7.02s    remaining: 4.58s
121:    learn: 0.4164726    total: 7.07s    remaining: 4.52s
122:    learn: 0.4163949    total: 7.11s    remaining: 4.45s
123:    learn: 0.4161557    total: 7.17s    remaining: 4.4s
124:    learn: 0.4160373    total: 7.22s    remaining: 4.33s
125:    learn: 0.4157086    total: 7.28s    remaining: 4.28s
126:    learn: 0.4153646    total: 7.33s    remaining: 4.21s
127:    learn: 0.4153597    total: 7.39s    remaining: 4.16s
128:    learn: 0.4151180    total: 7.45s    remaining: 4.1s
129:    learn: 0.4151053    total: 7.5s     remaining: 4.04s
130:    learn: 0.4149662    total: 7.56s    remaining: 3.98s
131:    learn: 0.4148665    total: 7.61s    remaining: 3.92s
132:    learn: 0.4145192    total: 7.68s    remaining: 3.87s
133:    learn: 0.4142041    total: 7.73s    remaining: 3.81s
134:    learn: 0.4138444    total: 7.8s     remaining: 3.75s
135:    learn: 0.4135065    total: 7.87s    remaining: 3.7s
136:    learn: 0.4133495    total: 7.92s    remaining: 3.64s
137:    learn: 0.4129868    total: 8.01s    remaining: 3.6s
138:    learn: 0.4126533    total: 8.07s    remaining: 3.54s
139:    learn: 0.4126126    total: 8.11s    remaining: 3.47s
140:    learn: 0.4124862    total: 8.16s    remaining: 3.41s
141:    learn: 0.4121570    total: 8.23s    remaining: 3.36s
142:    learn: 0.4119954    total: 8.31s    remaining: 3.31s
143:    learn: 0.4119193    total: 8.35s    remaining: 3.25s
144:    learn: 0.4119095    total: 8.42s    remaining: 3.19s
145:    learn: 0.4115290    total: 8.48s    remaining: 3.14s
146:    learn: 0.4114562    total: 8.54s    remaining: 3.08s
147:    learn: 0.4112778    total: 8.6s     remaining: 3.02s
148:    learn: 0.4110108    total: 8.67s    remaining: 2.97s
149:    learn: 0.4108365    total: 8.72s    remaining: 2.91s
150:    learn: 0.4106858    total: 8.79s    remaining: 2.85s
151:    learn: 0.4103643    total: 8.84s    remaining: 2.79s
152:    learn: 0.4102762    total: 8.89s    remaining: 2.73s
153:    learn: 0.4101418    total: 8.95s    remaining: 2.67s
154:    learn: 0.4099774    total: 9s       remaining: 2.61s
155:    learn: 0.4099132    total: 9.05s    remaining: 2.55s
156:    learn: 0.4097060    total: 9.13s    remaining: 2.5s
157:    learn: 0.4095972    total: 9.18s    remaining: 2.44s
158:    learn: 0.4093042    total: 9.24s    remaining: 2.38s
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159:    learn: 0.4089150     total: 9.28s     remaining: 2.32s
160:    learn: 0.4087487     total: 9.32s     remaining: 2.26s
161:    learn: 0.4086445     total: 9.37s     remaining: 2.2s
162:    learn: 0.4082939     total: 9.43s     remaining: 2.14s
163:    learn: 0.4080649     total: 9.49s     remaining: 2.08s
164:    learn: 0.4079920     total: 9.53s     remaining: 2.02s
165:    learn: 0.4076442     total: 9.58s     remaining: 1.96s
166:    learn: 0.4075257     total: 9.65s     remaining: 1.91s
167:    learn: 0.4074188     total: 9.7s      remaining: 1.85s
168:    learn: 0.4073429     total: 9.76s     remaining: 1.79s
169:    learn: 0.4072956     total: 9.83s     remaining: 1.73s
170:    learn: 0.4072542     total: 9.88s     remaining: 1.68s
171:    learn: 0.4071332     total: 9.95s     remaining: 1.62s
172:    learn: 0.4070171     total: 10s       remaining: 1.56s
173:    learn: 0.4068968     total: 10.1s     remaining: 1.5s
174:    learn: 0.4066212     total: 10.1s     remaining: 1.45s
175:    learn: 0.4065259     total: 10.2s     remaining: 1.39s
176:    learn: 0.4064746     total: 10.2s     remaining: 1.33s
177:    learn: 0.4061639     total: 10.3s     remaining: 1.27s
178:    learn: 0.4060280     total: 10.3s     remaining: 1.21s
179:    learn: 0.4059201     total: 10.4s     remaining: 1.15s
180:    learn: 0.4057346     total: 10.4s     remaining: 1.09s
181:    learn: 0.4056240     total: 10.5s     remaining: 1.04s
182:    learn: 0.4055549     total: 10.5s     remaining: 980ms
183:    learn: 0.4054884     total: 10.6s     remaining: 924ms
184:    learn: 0.4053818     total: 10.7s     remaining: 867ms
185:    learn: 0.4051347     total: 10.8s     remaining: 809ms
186:    learn: 0.4050842     total: 10.8s     remaining: 751ms
187:    learn: 0.4047784     total: 10.8s     remaining: 693ms
188:    learn: 0.4045998     total: 10.9s     remaining: 635ms
189:    learn: 0.4044548     total: 11s       remaining: 577ms
190:    learn: 0.4040690     total: 11s       remaining: 519ms
191:    learn: 0.4038933     total: 11.1s     remaining: 463ms
192:    learn: 0.4038889     total: 11.2s     remaining: 405ms
193:    learn: 0.4036964     total: 11.2s     remaining: 347ms
194:    learn: 0.4035632     total: 11.3s     remaining: 289ms
195:    learn: 0.4034554     total: 11.3s     remaining: 231ms
196:    learn: 0.4032138     total: 11.4s     remaining: 173ms
197:    learn: 0.4030076     total: 11.4s     remaining: 115ms
198:    learn: 0.4027750     total: 11.5s     remaining: 57.6ms
199:    learn: 0.4027299     total: 11.5s     remaining: 0us
0:      learn: 0.6337515     total: 47.3ms    remaining: 9.4s
1:      learn: 0.5990099     total: 94.7ms    remaining: 9.37s
2:      learn: 0.5701614     total: 141ms     remaining: 9.27s
3:      learn: 0.5480012     total: 193ms     remaining: 9.44s
4:      learn: 0.5269896     total: 236ms     remaining: 9.22s
5:      learn: 0.5149210     total: 308ms     remaining: 9.97s
6:      learn: 0.5017247     total: 368ms     remaining: 10.2s
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 7:        learn: 0.4934332        total: 443ms     remaining: 10.6s
 8:        learn: 0.4851355        total: 498ms     remaining: 10.6s
 9:        learn: 0.4789093        total: 550ms     remaining: 10.4s
10:        learn: 0.4738411        total: 607ms     remaining: 10.4s
11:        learn: 0.4690771        total: 666ms     remaining: 10.4s
12:        learn: 0.4664349        total: 710ms     remaining: 10.2s
13:        learn: 0.4641665        total: 785ms     remaining: 10.4s
14:        learn: 0.4614375        total: 854ms     remaining: 10.5s
15:        learn: 0.4594550        total: 912ms     remaining: 10.5s
16:        learn: 0.4582085        total: 980ms     remaining: 10.5s
17:        learn: 0.4562971        total: 1.03s     remaining: 10.4s
18:        learn: 0.4550284        total: 1.07s     remaining: 10.2s
19:        learn: 0.4536167        total: 1.12s     remaining: 10.1s
20:        learn: 0.4528935        total: 1.17s     remaining: 10s
21:        learn: 0.4520648        total: 1.22s     remaining: 9.9s
22:        learn: 0.4503698        total: 1.27s     remaining: 9.81s
23:        learn: 0.4488681        total: 1.31s     remaining: 9.64s
24:        learn: 0.4479063        total: 1.37s     remaining: 9.6s
25:        learn: 0.4471916        total: 1.45s     remaining: 9.7s
26:        learn: 0.4455074        total: 1.51s     remaining: 9.67s
27:        learn: 0.4445787        total: 1.56s     remaining: 9.61s
28:        learn: 0.4434855        total: 1.62s     remaining: 9.55s
29:        learn: 0.4429926        total: 1.68s     remaining: 9.54s
30:        learn: 0.4418283        total: 1.75s     remaining: 9.55s
31:        learn: 0.4414745        total: 1.8s      remaining: 9.47s
32:        learn: 0.4406454        total: 1.85s     remaining: 9.38s
33:        learn: 0.4400208        total: 1.9s      remaining: 9.3s
34:        learn: 0.4389176        total: 2s        remaining: 9.41s
35:        learn: 0.4383005        total: 2.07s     remaining: 9.41s
36:        learn: 0.4377862        total: 2.12s     remaining: 9.35s
37:        learn: 0.4374982        total: 2.18s     remaining: 9.28s
38:        learn: 0.4372736        total: 2.23s     remaining: 9.19s
39:        learn: 0.4367611        total: 2.27s     remaining: 9.1s
40:        learn: 0.4365270        total: 2.32s     remaining: 9s
41:        learn: 0.4361514        total: 2.38s     remaining: 8.96s
42:        learn: 0.4357543        total: 2.43s     remaining: 8.88s
43:        learn: 0.4354911        total: 2.48s     remaining: 8.79s
44:        learn: 0.4348665        total: 2.53s     remaining: 8.71s
45:        learn: 0.4341687        total: 2.6s      remaining: 8.69s
46:        learn: 0.4340735        total: 2.66s     remaining: 8.66s
47:        learn: 0.4338539        total: 2.71s     remaining: 8.6s
48:        learn: 0.4336570        total: 2.74s     remaining: 8.44s
49:        learn: 0.4331362        total: 2.78s     remaining: 8.34s
50:        learn: 0.4329347        total: 2.83s     remaining: 8.28s
51:        learn: 0.4326648        total: 2.88s     remaining: 8.21s
52:        learn: 0.4325069        total: 2.93s     remaining: 8.12s
53:        learn: 0.4319757        total: 2.98s     remaining: 8.06s
54:        learn: 0.4317278        total: 3.04s     remaining: 8.01s
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55:     learn: 0.4315409        total: 3.1s     remaining: 7.96s
56:     learn: 0.4312794        total: 3.16s    remaining: 7.92s
57:     learn: 0.4311964        total: 3.2s     remaining: 7.84s
58:     learn: 0.4306771        total: 3.25s    remaining: 7.78s
59:     learn: 0.4297592        total: 3.31s    remaining: 7.72s
60:     learn: 0.4296850        total: 3.37s    remaining: 7.68s
61:     learn: 0.4295070        total: 3.43s    remaining: 7.64s
62:     learn: 0.4288626        total: 3.48s    remaining: 7.57s
63:     learn: 0.4284497        total: 3.53s    remaining: 7.5s
64:     learn: 0.4280747        total: 3.58s    remaining: 7.44s
65:     learn: 0.4280407        total: 3.64s    remaining: 7.39s
66:     learn: 0.4278766        total: 3.73s    remaining: 7.4s
67:     learn: 0.4277805        total: 3.78s    remaining: 7.33s
68:     learn: 0.4276687        total: 3.83s    remaining: 7.27s
69:     learn: 0.4272287        total: 3.89s    remaining: 7.23s
70:     learn: 0.4271704        total: 3.95s    remaining: 7.17s
71:     learn: 0.4267217        total: 4s       remaining: 7.11s
72:     learn: 0.4266133        total: 4.05s    remaining: 7.04s
73:     learn: 0.4263060        total: 4.1s     remaining: 6.98s
74:     learn: 0.4261796        total: 4.17s    remaining: 6.95s
75:     learn: 0.4255540        total: 4.22s    remaining: 6.89s
76:     learn: 0.4254652        total: 4.3s     remaining: 6.86s
77:     learn: 0.4253262        total: 4.39s    remaining: 6.86s
78:     learn: 0.4250699        total: 4.44s    remaining: 6.79s
79:     learn: 0.4247969        total: 4.5s     remaining: 6.75s
80:     learn: 0.4245050        total: 4.56s    remaining: 6.7s
81:     learn: 0.4243097        total: 4.61s    remaining: 6.63s
82:     learn: 0.4240181        total: 4.67s    remaining: 6.59s
83:     learn: 0.4233949        total: 4.71s    remaining: 6.51s
84:     learn: 0.4231922        total: 4.78s    remaining: 6.47s
85:     learn: 0.4229024        total: 4.83s    remaining: 6.4s
86:     learn: 0.4225867        total: 4.89s    remaining: 6.35s
87:     learn: 0.4223296        total: 4.94s    remaining: 6.29s
88:     learn: 0.4221121        total: 4.99s    remaining: 6.22s
89:     learn: 0.4219509        total: 5.05s    remaining: 6.17s
90:     learn: 0.4217531        total: 5.11s    remaining: 6.12s
91:     learn: 0.4214772        total: 5.16s    remaining: 6.06s
92:     learn: 0.4213137        total: 5.22s    remaining: 6.01s
93:     learn: 0.4207135        total: 5.29s    remaining: 5.96s
94:     learn: 0.4202886        total: 5.34s    remaining: 5.9s
95:     learn: 0.4199720        total: 5.4s     remaining: 5.85s
96:     learn: 0.4197451        total: 5.47s    remaining: 5.81s
97:     learn: 0.4194809        total: 5.54s    remaining: 5.77s
98:     learn: 0.4191774        total: 5.61s    remaining: 5.72s
99:     learn: 0.4190337        total: 5.67s    remaining: 5.67s
100:    learn: 0.4189397        total: 5.71s    remaining: 5.6s
101:    learn: 0.4185258        total: 5.77s    remaining: 5.54s
102:    learn: 0.4181014        total: 5.83s    remaining: 5.49s
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103:    learn: 0.4178489    total: 5.89s    remaining: 5.44s
104:    learn: 0.4173824    total: 5.95s    remaining: 5.38s
105:    learn: 0.4169764    total: 6s       remaining: 5.32s
106:    learn: 0.4168658    total: 6.05s    remaining: 5.26s
107:    learn: 0.4165583    total: 6.1s     remaining: 5.2s
108:    learn: 0.4163061    total: 6.17s    remaining: 5.15s
109:    learn: 0.4161864    total: 6.24s    remaining: 5.1s
110:    learn: 0.4161086    total: 6.29s    remaining: 5.04s
111:    learn: 0.4158797    total: 6.35s    remaining: 4.99s
112:    learn: 0.4154802    total: 6.42s    remaining: 4.94s
113:    learn: 0.4153853    total: 6.47s    remaining: 4.88s
114:    learn: 0.4152554    total: 6.53s    remaining: 4.83s
115:    learn: 0.4151672    total: 6.58s    remaining: 4.77s
116:    learn: 0.4150825    total: 6.63s    remaining: 4.7s
117:    learn: 0.4149067    total: 6.67s    remaining: 4.63s
118:    learn: 0.4147165    total: 6.72s    remaining: 4.58s
119:    learn: 0.4144749    total: 6.79s    remaining: 4.53s
120:    learn: 0.4139377    total: 6.84s    remaining: 4.47s
121:    learn: 0.4137257    total: 6.91s    remaining: 4.42s
122:    learn: 0.4135359    total: 6.96s    remaining: 4.36s
123:    learn: 0.4131804    total: 7.02s    remaining: 4.3s
124:    learn: 0.4131690    total: 7.07s    remaining: 4.24s
125:    learn: 0.4130407    total: 7.13s    remaining: 4.18s
126:    learn: 0.4127863    total: 7.18s    remaining: 4.13s
127:    learn: 0.4125417    total: 7.23s    remaining: 4.07s
128:    learn: 0.4121301    total: 7.28s    remaining: 4.01s
129:    learn: 0.4119266    total: 7.34s    remaining: 3.95s
130:    learn: 0.4117584    total: 7.39s    remaining: 3.89s
131:    learn: 0.4115124    total: 7.46s    remaining: 3.85s
132:    learn: 0.4111872    total: 7.52s    remaining: 3.79s
133:    learn: 0.4109728    total: 7.58s    remaining: 3.74s
134:    learn: 0.4107166    total: 7.64s    remaining: 3.68s
135:    learn: 0.4105054    total: 7.72s    remaining: 3.63s
136:    learn: 0.4102552    total: 7.77s    remaining: 3.57s
137:    learn: 0.4100010    total: 7.83s    remaining: 3.52s
138:    learn: 0.4098691    total: 7.89s    remaining: 3.46s
139:    learn: 0.4097489    total: 7.94s    remaining: 3.4s
140:    learn: 0.4097153    total: 7.99s    remaining: 3.34s
141:    learn: 0.4095845    total: 8.03s    remaining: 3.28s
142:    learn: 0.4095342    total: 8.1s     remaining: 3.23s
143:    learn: 0.4094518    total: 8.15s    remaining: 3.17s
144:    learn: 0.4093511    total: 8.2s     remaining: 3.11s
145:    learn: 0.4092143    total: 8.24s    remaining: 3.05s
146:    learn: 0.4090966    total: 8.29s    remaining: 2.99s
147:    learn: 0.4089583    total: 8.38s    remaining: 2.94s
148:    learn: 0.4088866    total: 8.45s    remaining: 2.89s
149:    learn: 0.4085027    total: 8.5s     remaining: 2.83s
150:    learn: 0.4084837    total: 8.6s     remaining: 2.79s
```

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151:    learn: 0.4082650    total: 8.65s    remaining: 2.73s
152:    learn: 0.4081758    total: 8.71s    remaining: 2.67s
153:    learn: 0.4080167    total: 8.77s    remaining: 2.62s
154:    learn: 0.4077397    total: 8.81s    remaining: 2.56s
155:    learn: 0.4076368    total: 8.85s    remaining: 2.5s
156:    learn: 0.4073850    total: 8.91s    remaining: 2.44s
157:    learn: 0.4070528    total: 8.97s    remaining: 2.38s
158:    learn: 0.4068353    total: 9.01s    remaining: 2.32s
159:    learn: 0.4066695    total: 9.08s    remaining: 2.27s
160:    learn: 0.4063680    total: 9.13s    remaining: 2.21s
161:    learn: 0.4062505    total: 9.17s    remaining: 2.15s
162:    learn: 0.4059281    total: 9.22s    remaining: 2.09s
163:    learn: 0.4057757    total: 9.3s     remaining: 2.04s
164:    learn: 0.4056247    total: 9.37s    remaining: 1.99s
165:    learn: 0.4055679    total: 9.42s    remaining: 1.93s
166:    learn: 0.4054133    total: 9.47s    remaining: 1.87s
167:    learn: 0.4050675    total: 9.52s    remaining: 1.81s
168:    learn: 0.4049894    total: 9.57s    remaining: 1.75s
169:    learn: 0.4049339    total: 9.61s    remaining: 1.7s
170:    learn: 0.4047766    total: 9.66s    remaining: 1.64s
171:    learn: 0.4046948    total: 9.74s    remaining: 1.58s
172:    learn: 0.4045618    total: 9.79s    remaining: 1.53s
173:    learn: 0.4042745    total: 9.86s    remaining: 1.47s
174:    learn: 0.4041340    total: 9.94s    remaining: 1.42s
175:    learn: 0.4040341    total: 9.99s    remaining: 1.36s
176:    learn: 0.4040227    total: 10s      remaining: 1.3s
177:    learn: 0.4037835    total: 10.1s    remaining: 1.25s
178:    learn: 0.4035555    total: 10.2s    remaining: 1.19s
179:    learn: 0.4033194    total: 10.2s    remaining: 1.14s
180:    learn: 0.4030335    total: 10.3s    remaining: 1.08s
181:    learn: 0.4029303    total: 10.3s    remaining: 1.02s
182:    learn: 0.4029011    total: 10.4s    remaining: 964ms
183:    learn: 0.4027251    total: 10.4s    remaining: 907ms
184:    learn: 0.4025379    total: 10.5s    remaining: 851ms
185:    learn: 0.4024337    total: 10.5s    remaining: 793ms
186:    learn: 0.4023684    total: 10.6s    remaining: 736ms
187:    learn: 0.4022759    total: 10.6s    remaining: 680ms
188:    learn: 0.4020142    total: 10.7s    remaining: 623ms
189:    learn: 0.4019327    total: 10.8s    remaining: 567ms
190:    learn: 0.4016455    total: 10.8s    remaining: 510ms
191:    learn: 0.4015495    total: 10.9s    remaining: 454ms
192:    learn: 0.4014660    total: 10.9s    remaining: 397ms
193:    learn: 0.4013550    total: 11s      remaining: 339ms
194:    learn: 0.4012502    total: 11s      remaining: 283ms
195:    learn: 0.4011502    total: 11.1s    remaining: 226ms
196:    learn: 0.4010613    total: 11.2s    remaining: 170ms
197:    learn: 0.4010176    total: 11.2s    remaining: 113ms
198:    learn: 0.4008381    total: 11.3s    remaining: 56.6ms
```

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199:     learn: 0.4007199     total: 11.3s     remaining: 0us
0:       learn: 0.6444050     total: 43.1ms    remaining: 8.58s
1:       learn: 0.5981274     total: 90.4ms    remaining: 8.95s
2:       learn: 0.5724115     total: 146ms     remaining: 9.62s
3:       learn: 0.5438268     total: 191ms     remaining: 9.37s
4:       learn: 0.5269469     total: 272ms     remaining: 10.6s
5:       learn: 0.5118021     total: 339ms     remaining: 11s
6:       learn: 0.5028138     total: 378ms     remaining: 10.4s
7:       learn: 0.4933755     total: 424ms     remaining: 10.2s
8:       learn: 0.4862225     total: 478ms     remaining: 10.1s
9:       learn: 0.4786882     total: 523ms     remaining: 9.93s
10:      learn: 0.4743868     total: 562ms     remaining: 9.65s
11:      learn: 0.4709683     total: 602ms     remaining: 9.42s
12:      learn: 0.4671147     total: 696ms     remaining: 10s
13:      learn: 0.4637097     total: 748ms     remaining: 9.94s
14:      learn: 0.4615274     total: 807ms     remaining: 9.95s
15:      learn: 0.4584883     total: 865ms     remaining: 9.95s
16:      learn: 0.4563918     total: 912ms     remaining: 9.82s
17:      learn: 0.4544385     total: 968ms     remaining: 9.79s
18:      learn: 0.4529947     total: 1.02s     remaining: 9.71s
19:      learn: 0.4515995     total: 1.09s     remaining: 9.81s
20:      learn: 0.4505968     total: 1.14s     remaining: 9.71s
21:      learn: 0.4478564     total: 1.2s      remaining: 9.69s
22:      learn: 0.4464558     total: 1.25s     remaining: 9.64s
23:      learn: 0.4458885     total: 1.31s     remaining: 9.58s
24:      learn: 0.4446467     total: 1.36s     remaining: 9.55s
25:      learn: 0.4437492     total: 1.42s     remaining: 9.51s
26:      learn: 0.4430362     total: 1.48s     remaining: 9.48s
27:      learn: 0.4424180     total: 1.54s     remaining: 9.49s
28:      learn: 0.4418960     total: 1.61s     remaining: 9.49s
29:      learn: 0.4415728     total: 1.67s     remaining: 9.48s
30:      learn: 0.4406532     total: 1.73s     remaining: 9.41s
31:      learn: 0.4396575     total: 1.77s     remaining: 9.3s
32:      learn: 0.4392672     total: 1.82s     remaining: 9.24s
33:      learn: 0.4390134     total: 1.87s     remaining: 9.14s
34:      learn: 0.4381032     total: 1.94s     remaining: 9.13s
35:      learn: 0.4380961     total: 1.95s     remaining: 8.9s
36:      learn: 0.4372916     total: 2s        remaining: 8.82s
37:      learn: 0.4369995     total: 2.04s     remaining: 8.68s
38:      learn: 0.4366615     total: 2.08s     remaining: 8.6s
39:      learn: 0.4356966     total: 2.14s     remaining: 8.57s
40:      learn: 0.4354183     total: 2.2s      remaining: 8.53s
41:      learn: 0.4352310     total: 2.25s     remaining: 8.47s
42:      learn: 0.4344311     total: 2.32s     remaining: 8.46s
43:      learn: 0.4340284     total: 2.38s     remaining: 8.43s
44:      learn: 0.4340199     total: 2.4s      remaining: 8.27s
45:      learn: 0.4333470     total: 2.46s     remaining: 8.24s
46:      learn: 0.4327274     total: 2.53s     remaining: 8.24s
```

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47:     learn: 0.4325718     total: 2.59s    remaining: 8.19s
48:     learn: 0.4320141     total: 2.65s    remaining: 8.16s
49:     learn: 0.4314064     total: 2.71s    remaining: 8.12s
50:     learn: 0.4311403     total: 2.78s    remaining: 8.12s
51:     learn: 0.4310738     total: 2.85s    remaining: 8.1s
52:     learn: 0.4309954     total: 2.88s    remaining: 8s
53:     learn: 0.4309105     total: 2.94s    remaining: 7.94s
54:     learn: 0.4306707     total: 3.01s    remaining: 7.93s
55:     learn: 0.4305186     total: 3.07s    remaining: 7.89s
56:     learn: 0.4300748     total: 3.13s    remaining: 7.86s
57:     learn: 0.4292929     total: 3.18s    remaining: 7.78s
58:     learn: 0.4289664     total: 3.25s    remaining: 7.76s
59:     learn: 0.4288557     total: 3.3s     remaining: 7.7s
60:     learn: 0.4287072     total: 3.37s    remaining: 7.67s
61:     learn: 0.4284963     total: 3.42s    remaining: 7.61s
62:     learn: 0.4283836     total: 3.48s    remaining: 7.57s
63:     learn: 0.4281679     total: 3.53s    remaining: 7.51s
64:     learn: 0.4279729     total: 3.58s    remaining: 7.43s
65:     learn: 0.4273948     total: 3.63s    remaining: 7.37s
66:     learn: 0.4268523     total: 3.68s    remaining: 7.3s
67:     learn: 0.4265302     total: 3.74s    remaining: 7.26s
68:     learn: 0.4260839     total: 3.8s     remaining: 7.21s
69:     learn: 0.4255711     total: 3.85s    remaining: 7.15s
70:     learn: 0.4252004     total: 3.91s    remaining: 7.11s
71:     learn: 0.4251003     total: 3.98s    remaining: 7.08s
72:     learn: 0.4249792     total: 4.03s    remaining: 7.02s
73:     learn: 0.4245763     total: 4.1s     remaining: 6.98s
74:     learn: 0.4245238     total: 4.16s    remaining: 6.92s
75:     learn: 0.4244104     total: 4.21s    remaining: 6.86s
76:     learn: 0.4241814     total: 4.28s    remaining: 6.84s
77:     learn: 0.4237907     total: 4.35s    remaining: 6.8s
78:     learn: 0.4236010     total: 4.43s    remaining: 6.78s
79:     learn: 0.4232928     total: 4.48s    remaining: 6.72s
80:     learn: 0.4230356     total: 4.54s    remaining: 6.67s
81:     learn: 0.4228329     total: 4.61s    remaining: 6.63s
82:     learn: 0.4226715     total: 4.66s    remaining: 6.57s
83:     learn: 0.4223017     total: 4.72s    remaining: 6.51s
84:     learn: 0.4221459     total: 4.76s    remaining: 6.44s
85:     learn: 0.4220167     total: 4.81s    remaining: 6.37s
86:     learn: 0.4218194     total: 4.86s    remaining: 6.31s
87:     learn: 0.4211923     total: 4.91s    remaining: 6.25s
88:     learn: 0.4208610     total: 4.97s    remaining: 6.2s
89:     learn: 0.4205532     total: 5.03s    remaining: 6.15s
90:     learn: 0.4204750     total: 5.08s    remaining: 6.08s
91:     learn: 0.4202784     total: 5.13s    remaining: 6.02s
92:     learn: 0.4202076     total: 5.17s    remaining: 5.95s
93:     learn: 0.4200813     total: 5.22s    remaining: 5.88s
94:     learn: 0.4200165     total: 5.3s     remaining: 5.86s
```

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95:     learn: 0.4198429      total: 5.35s    remaining: 5.79s
96:     learn: 0.4198288      total: 5.41s    remaining: 5.74s
97:     learn: 0.4194882      total: 5.48s    remaining: 5.7s
98:     learn: 0.4193098      total: 5.56s    remaining: 5.67s
99:     learn: 0.4191403      total: 5.61s    remaining: 5.61s
100:    learn: 0.4190023      total: 5.68s    remaining: 5.57s
101:    learn: 0.4189582      total: 5.74s    remaining: 5.51s
102:    learn: 0.4186909      total: 5.82s    remaining: 5.48s
103:    learn: 0.4184111      total: 5.88s    remaining: 5.43s
104:    learn: 0.4181239      total: 5.95s    remaining: 5.38s
105:    learn: 0.4174746      total: 6s       remaining: 5.32s
106:    learn: 0.4174283      total: 6.07s    remaining: 5.28s
107:    learn: 0.4166407      total: 6.13s    remaining: 5.22s
108:    learn: 0.4165082      total: 6.17s    remaining: 5.16s
109:    learn: 0.4162961      total: 6.25s    remaining: 5.11s
110:    learn: 0.4161040      total: 6.3s     remaining: 5.05s
111:    learn: 0.4159249      total: 6.35s    remaining: 4.99s
112:    learn: 0.4156292      total: 6.43s    remaining: 4.95s
113:    learn: 0.4153660      total: 6.5s     remaining: 4.9s
114:    learn: 0.4153455      total: 6.55s    remaining: 4.84s
115:    learn: 0.4151343      total: 6.61s    remaining: 4.79s
116:    learn: 0.4146562      total: 6.66s    remaining: 4.72s
117:    learn: 0.4144391      total: 6.7s     remaining: 4.66s
118:    learn: 0.4141815      total: 6.75s    remaining: 4.6s
119:    learn: 0.4140368      total: 6.8s     remaining: 4.54s
120:    learn: 0.4139757      total: 6.85s    remaining: 4.47s
121:    learn: 0.4138320      total: 6.89s    remaining: 4.41s
122:    learn: 0.4136734      total: 6.96s    remaining: 4.36s
123:    learn: 0.4135477      total: 7.03s    remaining: 4.31s
124:    learn: 0.4132436      total: 7.08s    remaining: 4.25s
125:    learn: 0.4130111      total: 7.13s    remaining: 4.19s
126:    learn: 0.4128830      total: 7.18s    remaining: 4.13s
127:    learn: 0.4127825      total: 7.24s    remaining: 4.07s
128:    learn: 0.4126192      total: 7.3s     remaining: 4.02s
129:    learn: 0.4123863      total: 7.35s    remaining: 3.96s
130:    learn: 0.4120545      total: 7.41s    remaining: 3.9s
131:    learn: 0.4115709      total: 7.48s    remaining: 3.85s
132:    learn: 0.4114012      total: 7.54s    remaining: 3.8s
133:    learn: 0.4112499      total: 7.59s    remaining: 3.74s
134:    learn: 0.4111017      total: 7.66s    remaining: 3.69s
135:    learn: 0.4110134      total: 7.72s    remaining: 3.63s
136:    learn: 0.4109374      total: 7.79s    remaining: 3.58s
137:    learn: 0.4107024      total: 7.83s    remaining: 3.52s
138:    learn: 0.4105732      total: 7.9s     remaining: 3.47s
139:    learn: 0.4103191      total: 7.96s    remaining: 3.41s
140:    learn: 0.4102348      total: 8.02s    remaining: 3.36s
141:    learn: 0.4100216      total: 8.1s     remaining: 3.31s
142:    learn: 0.4097427      total: 8.14s    remaining: 3.25s
```

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143:     learn: 0.4094480     total: 8.19s     remaining: 3.19s
144:     learn: 0.4089831     total: 8.24s     remaining: 3.13s
145:     learn: 0.4088937     total: 8.3s      remaining: 3.07s
146:     learn: 0.4084754     total: 8.38s     remaining: 3.02s
147:     learn: 0.4082017     total: 8.44s     remaining: 2.96s
148:     learn: 0.4079248     total: 8.49s     remaining: 2.9s
149:     learn: 0.4078365     total: 8.54s     remaining: 2.85s
150:     learn: 0.4077091     total: 8.62s     remaining: 2.8s
151:     learn: 0.4075588     total: 8.66s     remaining: 2.73s
152:     learn: 0.4074297     total: 8.71s     remaining: 2.68s
153:     learn: 0.4072706     total: 8.78s     remaining: 2.62s
154:     learn: 0.4072449     total: 8.83s     remaining: 2.56s
155:     learn: 0.4071030     total: 8.88s     remaining: 2.51s
156:     learn: 0.4069592     total: 8.93s     remaining: 2.45s
157:     learn: 0.4068094     total: 8.97s     remaining: 2.38s
158:     learn: 0.4066532     total: 9.04s     remaining: 2.33s
159:     learn: 0.4065207     total: 9.1s      remaining: 2.27s
160:     learn: 0.4064076     total: 9.16s     remaining: 2.22s
161:     learn: 0.4062623     total: 9.2s      remaining: 2.16s
162:     learn: 0.4061676     total: 9.25s     remaining: 2.1s
163:     learn: 0.4060419     total: 9.32s     remaining: 2.05s
164:     learn: 0.4058464     total: 9.38s     remaining: 1.99s
165:     learn: 0.4056996     total: 9.42s     remaining: 1.93s
166:     learn: 0.4054875     total: 9.47s     remaining: 1.87s
167:     learn: 0.4052298     total: 9.55s     remaining: 1.82s
168:     learn: 0.4051369     total: 9.6s      remaining: 1.76s
169:     learn: 0.4048798     total: 9.67s     remaining: 1.71s
170:     learn: 0.4046297     total: 9.72s     remaining: 1.65s
171:     learn: 0.4044949     total: 9.77s     remaining: 1.59s
172:     learn: 0.4043326     total: 9.82s     remaining: 1.53s
173:     learn: 0.4041828     total: 9.87s     remaining: 1.47s
174:     learn: 0.4040648     total: 9.94s     remaining: 1.42s
175:     learn: 0.4039546     total: 9.99s     remaining: 1.36s
176:     learn: 0.4037662     total: 10.1s     remaining: 1.31s
177:     learn: 0.4036672     total: 10.1s     remaining: 1.25s
178:     learn: 0.4031057     total: 10.2s     remaining: 1.19s
179:     learn: 0.4029263     total: 10.2s     remaining: 1.13s
180:     learn: 0.4027553     total: 10.3s     remaining: 1.08s
181:     learn: 0.4026870     total: 10.3s     remaining: 1.02s
182:     learn: 0.4026281     total: 10.4s     remaining: 965ms
183:     learn: 0.4024098     total: 10.4s     remaining: 908ms
184:     learn: 0.4023151     total: 10.5s     remaining: 851ms
185:     learn: 0.4021154     total: 10.6s     remaining: 795ms
186:     learn: 0.4020114     total: 10.6s     remaining: 737ms
187:     learn: 0.4015555     total: 10.7s     remaining: 681ms
188:     learn: 0.4014550     total: 10.7s     remaining: 625ms
189:     learn: 0.4013528     total: 10.8s     remaining: 568ms
190:     learn: 0.4012755     total: 10.8s     remaining: 511ms
```

```
191:    learn: 0.4011792      total: 10.9s    remaining: 454ms
192:    learn: 0.4011278      total: 10.9s    remaining: 397ms
193:    learn: 0.4009824      total: 11s      remaining: 340ms
194:    learn: 0.4008425      total: 11.1s    remaining: 283ms
195:    learn: 0.4008206      total: 11.1s    remaining: 227ms
196:    learn: 0.4007248      total: 11.2s    remaining: 170ms
197:    learn: 0.4007020      total: 11.2s    remaining: 113ms
198:    learn: 0.4004962      total: 11.3s    remaining: 56.8ms
199:    learn: 0.4004414      total: 11.4s    remaining: 0us
```

Mean train f1-score of data (CV) 18 is : 0.8147064670295564
Mean test f1-score of data (CV) 18 is : 0.8031472851993048

Shape of data 19 is :
(27303, 10)
Distribution of 19 is :
Yes   14102
No   13201
Name: TIMELY_RESPONSE, dtype: int64

<IPython.core.display.HTML object>

MetricVisualizer(layout=Layout(align_self='stretch', height='500px'))
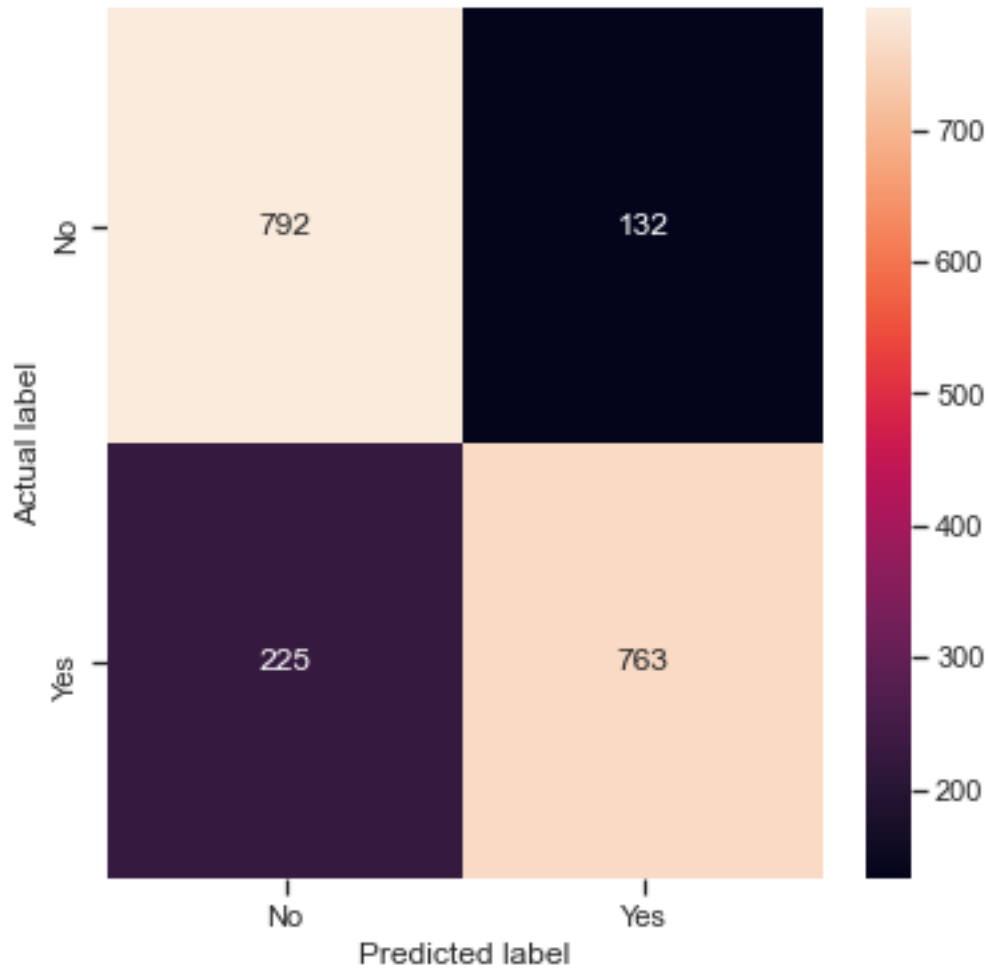
Train f1_score [Yes]: for data 19 is : 0.8104391185459224
Train f1_score [No]: for data 19 is : 0.8180906073936869

	precision	recall	f1-score	support
No	0.78	0.86	0.82	924
Yes	0.85	0.77	0.81	988
accuracy			0.81	1912
macro avg	0.82	0.81	0.81	1912
weighted avg	0.82	0.81	0.81	1912

```
Cross validation result for data 19 is :
0:       learn: 0.6370290      total: 55.6ms   remaining: 11.1s
1:       learn: 0.5911095      total: 112ms    remaining: 11.1s
2:       learn: 0.5634851      total: 176ms    remaining: 11.6s
3:       learn: 0.5424526      total: 219ms    remaining: 10.7s
4:       learn: 0.5245844      total: 294ms    remaining: 11.5s
5:       learn: 0.5117442      total: 348ms    remaining: 11.3s
6:       learn: 0.5017628      total: 396ms    remaining: 10.9s
7:       learn: 0.4938282      total: 455ms    remaining: 10.9s
8:       learn: 0.4856619      total: 524ms    remaining: 11.1s
9:       learn: 0.4766195      total: 572ms    remaining: 10.9s
10:      learn: 0.4727117      total: 640ms    remaining: 11s
11:      learn: 0.4659726      total: 689ms    remaining: 10.8s
12:      learn: 0.4616613      total: 747ms    remaining: 10.7s
13:      learn: 0.4595604      total: 822ms    remaining: 10.9s
14:      learn: 0.4570184      total: 878ms    remaining: 10.8s
15:      learn: 0.4537404      total: 926ms    remaining: 10.6s
```

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16:     learn: 0.4517627      total: 996ms     remaining: 10.7s
17:     learn: 0.4505539      total: 1.06s     remaining: 10.7s
18:     learn: 0.4493603      total: 1.11s     remaining: 10.6s
19:     learn: 0.4472942      total: 1.18s     remaining: 10.6s
20:     learn: 0.4462256      total: 1.23s     remaining: 10.5s
21:     learn: 0.4454390      total: 1.29s     remaining: 10.4s
22:     learn: 0.4448221      total: 1.33s     remaining: 10.3s
23:     learn: 0.4437001      total: 1.39s     remaining: 10.2s
24:     learn: 0.4419754      total: 1.46s     remaining: 10.2s
25:     learn: 0.4412062      total: 1.5s      remaining: 10.1s
26:     learn: 0.4408003      total: 1.56s     remaining: 9.99s
27:     learn: 0.4400183      total: 1.62s     remaining: 9.94s
28:     learn: 0.4393520      total: 1.67s     remaining: 9.87s
29:     learn: 0.4382301      total: 1.72s     remaining: 9.77s
30:     learn: 0.4376709      total: 1.77s     remaining: 9.66s
31:     learn: 0.4368866      total: 1.82s     remaining: 9.57s
32:     learn: 0.4362680      total: 1.88s     remaining: 9.52s
33:     learn: 0.4355258      total: 1.93s     remaining: 9.44s
34:     learn: 0.4348968      total: 1.98s     remaining: 9.32s
35:     learn: 0.4342789      total: 2.04s     remaining: 9.28s
36:     learn: 0.4340595      total: 2.09s     remaining: 9.22s
37:     learn: 0.4335470      total: 2.14s     remaining: 9.14s
38:     learn: 0.4333058      total: 2.21s     remaining: 9.11s
39:     learn: 0.4330471      total: 2.25s     remaining: 9.02s
40:     learn: 0.4328056      total: 2.32s     remaining: 9.01s
41:     learn: 0.4326568      total: 2.37s     remaining: 8.92s
42:     learn: 0.4322590      total: 2.42s     remaining: 8.83s
43:     learn: 0.4318869      total: 2.47s     remaining: 8.77s
44:     learn: 0.4318086      total: 2.55s     remaining: 8.79s
45:     learn: 0.4316170      total: 2.6s      remaining: 8.71s
46:     learn: 0.4314911      total: 2.65s     remaining: 8.64s
47:     learn: 0.4311987      total: 2.72s     remaining: 8.6s
48:     learn: 0.4310185      total: 2.77s     remaining: 8.55s
49:     learn: 0.4306499      total: 2.84s     remaining: 8.51s
50:     learn: 0.4301541      total: 2.9s      remaining: 8.48s
51:     learn: 0.4299027      total: 2.95s     remaining: 8.39s
52:     learn: 0.4294996      total: 3.01s     remaining: 8.34s
53:     learn: 0.4289946      total: 3.08s     remaining: 8.34s
54:     learn: 0.4286110      total: 3.14s     remaining: 8.27s
55:     learn: 0.4285200      total: 3.18s     remaining: 8.17s
56:     learn: 0.4282237      total: 3.24s     remaining: 8.12s
57:     learn: 0.4281302      total: 3.29s     remaining: 8.05s
58:     learn: 0.4274117      total: 3.34s     remaining: 7.99s
59:     learn: 0.4270508      total: 3.41s     remaining: 7.96s
60:     learn: 0.4264976      total: 3.46s     remaining: 7.89s
61:     learn: 0.4263048      total: 3.52s     remaining: 7.84s
62:     learn: 0.4260383      total: 3.58s     remaining: 7.78s
63:     learn: 0.4259083      total: 3.63s     remaining: 7.72s
```

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64:     learn: 0.4254935      total: 3.69s    remaining: 7.67s
65:     learn: 0.4252188      total: 3.75s    remaining: 7.62s
66:     learn: 0.4251785      total: 3.8s     remaining: 7.55s
67:     learn: 0.4250275      total: 3.86s    remaining: 7.49s
68:     learn: 0.4246404      total: 3.9s     remaining: 7.41s
69:     learn: 0.4240089      total: 3.98s    remaining: 7.38s
70:     learn: 0.4237071      total: 4.02s    remaining: 7.3s
71:     learn: 0.4235908      total: 4.08s    remaining: 7.25s
72:     learn: 0.4234102      total: 4.13s    remaining: 7.18s
73:     learn: 0.4233666      total: 4.17s    remaining: 7.1s
74:     learn: 0.4232389      total: 4.24s    remaining: 7.06s
75:     learn: 0.4230397      total: 4.29s    remaining: 7s
76:     learn: 0.4228572      total: 4.35s    remaining: 6.94s
77:     learn: 0.4226990      total: 4.41s    remaining: 6.9s
78:     learn: 0.4224171      total: 4.47s    remaining: 6.85s
79:     learn: 0.4220899      total: 4.52s    remaining: 6.78s
80:     learn: 0.4218990      total: 4.57s    remaining: 6.72s
81:     learn: 0.4217913      total: 4.62s    remaining: 6.64s
82:     learn: 0.4215632      total: 4.67s    remaining: 6.59s
83:     learn: 0.4214185      total: 4.72s    remaining: 6.52s
84:     learn: 0.4208607      total: 4.78s    remaining: 6.46s
85:     learn: 0.4207898      total: 4.85s    remaining: 6.42s
86:     learn: 0.4205470      total: 4.91s    remaining: 6.38s
87:     learn: 0.4201323      total: 4.96s    remaining: 6.31s
88:     learn: 0.4200515      total: 5.01s    remaining: 6.25s
89:     learn: 0.4199911      total: 5.07s    remaining: 6.2s
90:     learn: 0.4196914      total: 5.12s    remaining: 6.14s
91:     learn: 0.4195933      total: 5.17s    remaining: 6.07s
92:     learn: 0.4194965      total: 5.21s    remaining: 6s
93:     learn: 0.4191576      total: 5.26s    remaining: 5.94s
94:     learn: 0.4189060      total: 5.33s    remaining: 5.89s
95:     learn: 0.4184338      total: 5.39s    remaining: 5.83s
96:     learn: 0.4182082      total: 5.45s    remaining: 5.79s
97:     learn: 0.4174979      total: 5.52s    remaining: 5.75s
98:     learn: 0.4172396      total: 5.58s    remaining: 5.69s
99:     learn: 0.4170200      total: 5.64s    remaining: 5.64s
100:    learn: 0.4167335      total: 5.68s    remaining: 5.57s
101:    learn: 0.4166062      total: 5.74s    remaining: 5.51s
102:    learn: 0.4163021      total: 5.8s     remaining: 5.46s
103:    learn: 0.4161456      total: 5.85s    remaining: 5.4s
104:    learn: 0.4159195      total: 5.9s     remaining: 5.34s
105:    learn: 0.4156744      total: 5.95s    remaining: 5.28s
106:    learn: 0.4151478      total: 6.01s    remaining: 5.23s
107:    learn: 0.4150212      total: 6.07s    remaining: 5.17s
108:    learn: 0.4148767      total: 6.12s    remaining: 5.11s
109:    learn: 0.4148430      total: 6.17s    remaining: 5.04s
110:    learn: 0.4146358      total: 6.21s    remaining: 4.98s
111:    learn: 0.4143096      total: 6.27s    remaining: 4.92s
```

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112:    learn: 0.4138336    total: 6.32s    remaining: 4.87s
113:    learn: 0.4133176    total: 6.39s    remaining: 4.82s
114:    learn: 0.4133103    total: 6.45s    remaining: 4.77s
115:    learn: 0.4127089    total: 6.5s     remaining: 4.7s
116:    learn: 0.4123846    total: 6.54s    remaining: 4.64s
117:    learn: 0.4122040    total: 6.63s    remaining: 4.61s
118:    learn: 0.4121629    total: 6.68s    remaining: 4.55s
119:    learn: 0.4118256    total: 6.75s    remaining: 4.5s
120:    learn: 0.4116098    total: 6.8s     remaining: 4.44s
121:    learn: 0.4113533    total: 6.87s    remaining: 4.39s
122:    learn: 0.4112043    total: 6.94s    remaining: 4.34s
123:    learn: 0.4111114    total: 6.98s    remaining: 4.28s
124:    learn: 0.4104584    total: 7.03s    remaining: 4.22s
125:    learn: 0.4098782    total: 7.1s     remaining: 4.17s
126:    learn: 0.4096841    total: 7.17s    remaining: 4.12s
127:    learn: 0.4094699    total: 7.22s    remaining: 4.06s
128:    learn: 0.4093341    total: 7.27s    remaining: 4s
129:    learn: 0.4090137    total: 7.34s    remaining: 3.95s
130:    learn: 0.4087884    total: 7.39s    remaining: 3.89s
131:    learn: 0.4086494    total: 7.44s    remaining: 3.83s
132:    learn: 0.4085183    total: 7.5s     remaining: 3.77s
133:    learn: 0.4083741    total: 7.55s    remaining: 3.72s
134:    learn: 0.4077876    total: 7.6s     remaining: 3.66s
135:    learn: 0.4076085    total: 7.64s    remaining: 3.6s
136:    learn: 0.4073201    total: 7.7s     remaining: 3.54s
137:    learn: 0.4071090    total: 7.76s    remaining: 3.48s
138:    learn: 0.4070165    total: 7.81s    remaining: 3.43s
139:    learn: 0.4069630    total: 7.86s    remaining: 3.37s
140:    learn: 0.4069407    total: 7.9s     remaining: 3.31s
141:    learn: 0.4068707    total: 7.95s    remaining: 3.25s
142:    learn: 0.4067404    total: 8.01s    remaining: 3.19s
143:    learn: 0.4061261    total: 8.06s    remaining: 3.13s
144:    learn: 0.4060062    total: 8.11s    remaining: 3.08s
145:    learn: 0.4058655    total: 8.18s    remaining: 3.02s
146:    learn: 0.4056910    total: 8.23s    remaining: 2.97s
147:    learn: 0.4054705    total: 8.29s    remaining: 2.91s
148:    learn: 0.4051862    total: 8.34s    remaining: 2.85s
149:    learn: 0.4046691    total: 8.38s    remaining: 2.79s
150:    learn: 0.4045271    total: 8.44s    remaining: 2.74s
151:    learn: 0.4043109    total: 8.51s    remaining: 2.69s
152:    learn: 0.4042706    total: 8.56s    remaining: 2.63s
153:    learn: 0.4041313    total: 8.62s    remaining: 2.58s
154:    learn: 0.4040729    total: 8.7s     remaining: 2.52s
155:    learn: 0.4038936    total: 8.76s    remaining: 2.47s
156:    learn: 0.4037953    total: 8.81s    remaining: 2.41s
157:    learn: 0.4036961    total: 8.86s    remaining: 2.36s
158:    learn: 0.4036204    total: 8.93s    remaining: 2.3s
159:    learn: 0.4035228    total: 8.98s    remaining: 2.25s
```

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160:    learn: 0.4034432    total: 9.04s    remaining: 2.19s
161:    learn: 0.4033809    total: 9.09s    remaining: 2.13s
162:    learn: 0.4030552    total: 9.16s    remaining: 2.08s
163:    learn: 0.4028806    total: 9.21s    remaining: 2.02s
164:    learn: 0.4028073    total: 9.27s    remaining: 1.97s
165:    learn: 0.4026818    total: 9.33s    remaining: 1.91s
166:    learn: 0.4025096    total: 9.39s    remaining: 1.85s
167:    learn: 0.4022286    total: 9.46s    remaining: 1.8s
168:    learn: 0.4020995    total: 9.51s    remaining: 1.74s
169:    learn: 0.4019918    total: 9.59s    remaining: 1.69s
170:    learn: 0.4019511    total: 9.65s    remaining: 1.64s
171:    learn: 0.4017739    total: 9.71s    remaining: 1.58s
172:    learn: 0.4014109    total: 9.76s    remaining: 1.52s
173:    learn: 0.4013471    total: 9.82s    remaining: 1.47s
174:    learn: 0.4010616    total: 9.87s    remaining: 1.41s
175:    learn: 0.4008265    total: 9.96s    remaining: 1.36s
176:    learn: 0.4003788    total: 10s      remaining: 1.3s
177:    learn: 0.4001820    total: 10.1s    remaining: 1.25s
178:    learn: 0.4000379    total: 10.2s    remaining: 1.19s
179:    learn: 0.3999769    total: 10.2s    remaining: 1.14s
180:    learn: 0.3997989    total: 10.3s    remaining: 1.08s
181:    learn: 0.3995635    total: 10.3s    remaining: 1.02s
182:    learn: 0.3994114    total: 10.4s    remaining: 967ms
183:    learn: 0.3993440    total: 10.5s    remaining: 909ms
184:    learn: 0.3992806    total: 10.5s    remaining: 854ms
185:    learn: 0.3992463    total: 10.6s    remaining: 797ms
186:    learn: 0.3991426    total: 10.7s    remaining: 742ms
187:    learn: 0.3990520    total: 10.7s    remaining: 685ms
188:    learn: 0.3987819    total: 10.8s    remaining: 628ms
189:    learn: 0.3983795    total: 10.8s    remaining: 570ms
190:    learn: 0.3981690    total: 10.9s    remaining: 514ms
191:    learn: 0.3980674    total: 11s      remaining: 457ms
192:    learn: 0.3979239    total: 11s      remaining: 400ms
193:    learn: 0.3978748    total: 11.1s    remaining: 342ms
194:    learn: 0.3978009    total: 11.1s    remaining: 285ms
195:    learn: 0.3977570    total: 11.2s    remaining: 228ms
196:    learn: 0.3977107    total: 11.2s    remaining: 171ms
197:    learn: 0.3974641    total: 11.3s    remaining: 114ms
198:    learn: 0.3972730    total: 11.4s    remaining: 57.1ms
199:    learn: 0.3972682    total: 11.4s    remaining: 0us
0:      learn: 0.6375489    total: 43.2ms   remaining: 8.59s
1:      learn: 0.5925308    total: 96.5ms   remaining: 9.56s
2:      learn: 0.5653561    total: 152ms    remaining: 9.97s
3:      learn: 0.5451701    total: 199ms    remaining: 9.75s
4:      learn: 0.5305130    total: 255ms    remaining: 9.93s
5:      learn: 0.5154685    total: 316ms    remaining: 10.2s
6:      learn: 0.5039487    total: 376ms    remaining: 10.4s
7:      learn: 0.4922116    total: 438ms    remaining: 10.5s
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8:      learn: 0.4853653      total: 489ms    remaining: 10.4s
9:      learn: 0.4786825      total: 533ms    remaining: 10.1s
10:     learn: 0.4734303      total: 602ms    remaining: 10.3s
11:     learn: 0.4690236      total: 657ms    remaining: 10.3s
12:     learn: 0.4644825      total: 698ms    remaining: 10s
13:     learn: 0.4629198      total: 742ms    remaining: 9.86s
14:     learn: 0.4606770      total: 786ms    remaining: 9.7s
15:     learn: 0.4586695      total: 826ms    remaining: 9.5s
16:     learn: 0.4564896      total: 871ms    remaining: 9.37s
17:     learn: 0.4548816      total: 928ms    remaining: 9.38s
18:     learn: 0.4534114      total: 1.01s    remaining: 9.59s
19:     learn: 0.4518807      total: 1.07s    remaining: 9.66s
20:     learn: 0.4505777      total: 1.14s    remaining: 9.7s
21:     learn: 0.4494196      total: 1.19s    remaining: 9.66s
22:     learn: 0.4471436      total: 1.27s    remaining: 9.77s
23:     learn: 0.4466930      total: 1.31s    remaining: 9.6s
24:     learn: 0.4457647      total: 1.37s    remaining: 9.56s
25:     learn: 0.4442614      total: 1.42s    remaining: 9.49s
26:     learn: 0.4438062      total: 1.46s    remaining: 9.38s
27:     learn: 0.4431692      total: 1.51s    remaining: 9.26s
28:     learn: 0.4424209      total: 1.57s    remaining: 9.24s
29:     learn: 0.4413528      total: 1.62s    remaining: 9.2s
30:     learn: 0.4404337      total: 1.67s    remaining: 9.13s
31:     learn: 0.4397613      total: 1.73s    remaining: 9.11s
32:     learn: 0.4386548      total: 1.78s    remaining: 9.03s
33:     learn: 0.4381517      total: 1.83s    remaining: 8.95s
34:     learn: 0.4375021      total: 1.88s    remaining: 8.87s
35:     learn: 0.4368863      total: 1.96s    remaining: 8.94s
36:     learn: 0.4365574      total: 2s       remaining: 8.83s
37:     learn: 0.4362870      total: 2.05s    remaining: 8.74s
38:     learn: 0.4353525      total: 2.11s    remaining: 8.7s
39:     learn: 0.4347960      total: 2.16s    remaining: 8.65s
40:     learn: 0.4342837      total: 2.23s    remaining: 8.66s
41:     learn: 0.4338450      total: 2.29s    remaining: 8.64s
42:     learn: 0.4335985      total: 2.36s    remaining: 8.62s
43:     learn: 0.4331665      total: 2.42s    remaining: 8.59s
44:     learn: 0.4324704      total: 2.5s     remaining: 8.6s
45:     learn: 0.4319095      total: 2.56s    remaining: 8.55s
46:     learn: 0.4317489      total: 2.61s    remaining: 8.51s
47:     learn: 0.4314066      total: 2.68s    remaining: 8.48s
48:     learn: 0.4314032      total: 2.71s    remaining: 8.36s
49:     learn: 0.4309676      total: 2.77s    remaining: 8.31s
50:     learn: 0.4308064      total: 2.82s    remaining: 8.24s
51:     learn: 0.4306447      total: 2.88s    remaining: 8.19s
52:     learn: 0.4304377      total: 2.92s    remaining: 8.11s
53:     learn: 0.4301595      total: 2.97s    remaining: 8.04s
54:     learn: 0.4299567      total: 3.02s    remaining: 7.96s
55:     learn: 0.4291180      total: 3.06s    remaining: 7.88s
```

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56:      learn: 0.4287277      total: 3.13s      remaining: 7.84s
57:      learn: 0.4282516      total: 3.18s      remaining: 7.78s
58:      learn: 0.4278399      total: 3.25s      remaining: 7.76s
59:      learn: 0.4275798      total: 3.29s      remaining: 7.69s
60:      learn: 0.4272214      total: 3.34s      remaining: 7.6s
61:      learn: 0.4267163      total: 3.41s      remaining: 7.59s
62:      learn: 0.4262051      total: 3.45s      remaining: 7.51s
63:      learn: 0.4260664      total: 3.5s       remaining: 7.44s
64:      learn: 0.4259187      total: 3.56s      remaining: 7.4s
65:      learn: 0.4258381      total: 3.63s      remaining: 7.37s
66:      learn: 0.4253855      total: 3.68s      remaining: 7.31s
67:      learn: 0.4250334      total: 3.74s      remaining: 7.26s
68:      learn: 0.4248015      total: 3.8s       remaining: 7.22s
69:      learn: 0.4246748      total: 3.86s      remaining: 7.17s
70:      learn: 0.4242526      total: 3.92s      remaining: 7.11s
71:      learn: 0.4238874      total: 3.96s      remaining: 7.04s
72:      learn: 0.4237370      total: 4.02s      remaining: 7s
73:      learn: 0.4234327      total: 4.08s      remaining: 6.95s
74:      learn: 0.4232196      total: 4.13s      remaining: 6.88s
75:      learn: 0.4231102      total: 4.2s       remaining: 6.85s
76:      learn: 0.4225835      total: 4.25s      remaining: 6.79s
77:      learn: 0.4223316      total: 4.32s      remaining: 6.76s
78:      learn: 0.4221490      total: 4.38s      remaining: 6.71s
79:      learn: 0.4218807      total: 4.45s      remaining: 6.67s
80:      learn: 0.4216654      total: 4.5s       remaining: 6.61s
81:      learn: 0.4212761      total: 4.55s      remaining: 6.55s
82:      learn: 0.4211597      total: 4.61s      remaining: 6.49s
83:      learn: 0.4210489      total: 4.66s      remaining: 6.43s
84:      learn: 0.4205665      total: 4.7s       remaining: 6.36s
85:      learn: 0.4201369      total: 4.76s      remaining: 6.31s
86:      learn: 0.4193646      total: 4.82s      remaining: 6.26s
87:      learn: 0.4191744      total: 4.87s      remaining: 6.19s
88:      learn: 0.4190161      total: 4.92s      remaining: 6.14s
89:      learn: 0.4188469      total: 4.97s      remaining: 6.08s
90:      learn: 0.4187141      total: 5.04s      remaining: 6.04s
91:      learn: 0.4184891      total: 5.1s       remaining: 5.98s
92:      learn: 0.4183374      total: 5.15s      remaining: 5.92s
93:      learn: 0.4181744      total: 5.21s      remaining: 5.88s
94:      learn: 0.4180102      total: 5.26s      remaining: 5.81s
95:      learn: 0.4176350      total: 5.33s      remaining: 5.77s
96:      learn: 0.4175315      total: 5.38s      remaining: 5.72s
97:      learn: 0.4171771      total: 5.44s      remaining: 5.66s
98:      learn: 0.4170145      total: 5.49s      remaining: 5.6s
99:      learn: 0.4167941      total: 5.58s      remaining: 5.58s
100:     learn: 0.4165553      total: 5.63s      remaining: 5.52s
101:     learn: 0.4163600      total: 5.68s      remaining: 5.46s
102:     learn: 0.4162251      total: 5.72s      remaining: 5.39s
103:     learn: 0.4160903      total: 5.78s      remaining: 5.33s
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104:      learn: 0.4160127      total: 5.85s      remaining: 5.29s
105:      learn: 0.4159083      total: 5.89s      remaining: 5.23s
106:      learn: 0.4158088      total: 5.95s      remaining: 5.17s
107:      learn: 0.4157131      total: 6s         remaining: 5.11s
108:      learn: 0.4156594      total: 6.06s      remaining: 5.06s
109:      learn: 0.4155388      total: 6.14s      remaining: 5.02s
110:      learn: 0.4152376      total: 6.2s       remaining: 4.97s
111:      learn: 0.4151271      total: 6.26s      remaining: 4.92s
112:      learn: 0.4150944      total: 6.3s       remaining: 4.85s
113:      learn: 0.4149475      total: 6.34s      remaining: 4.78s
114:      learn: 0.4144330      total: 6.39s      remaining: 4.72s
115:      learn: 0.4142116      total: 6.44s      remaining: 4.66s
116:      learn: 0.4136907      total: 6.5s       remaining: 4.61s
117:      learn: 0.4135267      total: 6.54s      remaining: 4.55s
118:      learn: 0.4133581      total: 6.59s      remaining: 4.49s
119:      learn: 0.4131733      total: 6.65s      remaining: 4.44s
120:      learn: 0.4126266      total: 6.7s       remaining: 4.38s
121:      learn: 0.4123764      total: 6.76s      remaining: 4.32s
122:      learn: 0.4118348      total: 6.81s      remaining: 4.26s
123:      learn: 0.4116304      total: 6.88s      remaining: 4.22s
124:      learn: 0.4112625      total: 6.94s      remaining: 4.16s
125:      learn: 0.4110267      total: 6.99s      remaining: 4.1s
126:      learn: 0.4106504      total: 7.04s      remaining: 4.05s
127:      learn: 0.4105703      total: 7.09s      remaining: 3.99s
128:      learn: 0.4104581      total: 7.14s      remaining: 3.93s
129:      learn: 0.4101247      total: 7.21s      remaining: 3.88s
130:      learn: 0.4099729      total: 7.27s      remaining: 3.83s
131:      learn: 0.4094222      total: 7.32s      remaining: 3.77s
132:      learn: 0.4092790      total: 7.37s      remaining: 3.71s
133:      learn: 0.4090044      total: 7.42s      remaining: 3.65s
134:      learn: 0.4089599      total: 7.48s      remaining: 3.6s
135:      learn: 0.4087581      total: 7.53s      remaining: 3.54s
136:      learn: 0.4086290      total: 7.58s      remaining: 3.49s
137:      learn: 0.4085375      total: 7.64s      remaining: 3.43s
138:      learn: 0.4080984      total: 7.71s      remaining: 3.38s
139:      learn: 0.4080310      total: 7.77s      remaining: 3.33s
140:      learn: 0.4077787      total: 7.83s      remaining: 3.28s
141:      learn: 0.4072562      total: 7.9s       remaining: 3.23s
142:      learn: 0.4071657      total: 7.95s      remaining: 3.17s
143:      learn: 0.4068554      total: 8.02s      remaining: 3.12s
144:      learn: 0.4065908      total: 8.07s      remaining: 3.06s
145:      learn: 0.4065129      total: 8.13s      remaining: 3s
146:      learn: 0.4063165      total: 8.19s      remaining: 2.95s
147:      learn: 0.4061220      total: 8.23s      remaining: 2.89s
148:      learn: 0.4059998      total: 8.28s      remaining: 2.83s
149:      learn: 0.4056933      total: 8.35s      remaining: 2.78s
150:      learn: 0.4054185      total: 8.4s       remaining: 2.73s
151:      learn: 0.4051687      total: 8.46s      remaining: 2.67s
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152:    learn: 0.4051050        total: 8.52s        remaining: 2.62s
153:    learn: 0.4049199        total: 8.57s        remaining: 2.56s
154:    learn: 0.4048202        total: 8.62s        remaining: 2.5s
155:    learn: 0.4045872        total: 8.67s        remaining: 2.44s
156:    learn: 0.4044632        total: 8.72s        remaining: 2.39s
157:    learn: 0.4043058        total: 8.77s        remaining: 2.33s
158:    learn: 0.4040973        total: 8.85s        remaining: 2.28s
159:    learn: 0.4039866        total: 8.89s        remaining: 2.22s
160:    learn: 0.4038323        total: 8.94s        remaining: 2.17s
161:    learn: 0.4038093        total: 9.01s        remaining: 2.11s
162:    learn: 0.4035422        total: 9.07s        remaining: 2.06s
163:    learn: 0.4034222        total: 9.13s        remaining: 2s
164:    learn: 0.4033344        total: 9.19s        remaining: 1.95s
165:    learn: 0.4033016        total: 9.25s        remaining: 1.9s
166:    learn: 0.4032128        total: 9.3s         remaining: 1.84s
167:    learn: 0.4030497        total: 9.35s        remaining: 1.78s
168:    learn: 0.4030017        total: 9.39s        remaining: 1.72s
169:    learn: 0.4029239        total: 9.43s        remaining: 1.66s
170:    learn: 0.4027143        total: 9.48s        remaining: 1.61s
171:    learn: 0.4026198        total: 9.55s        remaining: 1.55s
172:    learn: 0.4025419        total: 9.6s         remaining: 1.5s
173:    learn: 0.4024283        total: 9.64s        remaining: 1.44s
174:    learn: 0.4021202        total: 9.7s         remaining: 1.39s
175:    learn: 0.4020313        total: 9.77s        remaining: 1.33s
176:    learn: 0.4014592        total: 9.82s        remaining: 1.28s
177:    learn: 0.4013870        total: 9.87s        remaining: 1.22s
178:    learn: 0.4012797        total: 9.94s        remaining: 1.17s
179:    learn: 0.4012522        total: 10s          remaining: 1.11s
180:    learn: 0.4011085        total: 10s          remaining: 1.05s
181:    learn: 0.4006517        total: 10.1s        remaining: 999ms
182:    learn: 0.4006300        total: 10.2s        remaining: 944ms
183:    learn: 0.4005345        total: 10.2s        remaining: 888ms
184:    learn: 0.4003019        total: 10.3s        remaining: 832ms
185:    learn: 0.3998639        total: 10.3s        remaining: 776ms
186:    learn: 0.3996827        total: 10.4s        remaining: 721ms
187:    learn: 0.3995725        total: 10.4s        remaining: 667ms
188:    learn: 0.3994174        total: 10.5s        remaining: 613ms
189:    learn: 0.3991308        total: 10.6s        remaining: 557ms
190:    learn: 0.3990898        total: 10.6s        remaining: 500ms
191:    learn: 0.3990394        total: 10.7s        remaining: 445ms
192:    learn: 0.3989227        total: 10.7s        remaining: 389ms
193:    learn: 0.3988212        total: 10.8s        remaining: 333ms
194:    learn: 0.3985723        total: 10.8s        remaining: 278ms
195:    learn: 0.3983449        total: 10.9s        remaining: 222ms
196:    learn: 0.3982938        total: 10.9s        remaining: 167ms
197:    learn: 0.3980423        total: 11s          remaining: 111ms
198:    learn: 0.3979614        total: 11s          remaining: 55.5ms
199:    learn: 0.3978229        total: 11.1s        remaining: 0us
```

```
0:      learn: 0.6357998       total: 42ms      remaining: 8.36s
1:      learn: 0.5911409       total: 95ms      remaining: 9.4s
2:      learn: 0.5642277       total: 139ms     remaining: 9.14s
3:      learn: 0.5447268       total: 183ms     remaining: 8.98s
4:      learn: 0.5251537       total: 223ms     remaining: 8.7s
5:      learn: 0.5097784       total: 271ms     remaining: 8.78s
6:      learn: 0.4988509       total: 323ms     remaining: 8.91s
7:      learn: 0.4885159       total: 384ms     remaining: 9.23s
8:      learn: 0.4831766       total: 408ms     remaining: 8.65s
9:      learn: 0.4769240       total: 457ms     remaining: 8.67s
10:     learn: 0.4715200       total: 518ms     remaining: 8.89s
11:     learn: 0.4675248       total: 584ms     remaining: 9.14s
12:     learn: 0.4649385       total: 647ms     remaining: 9.3s
13:     learn: 0.4622756       total: 709ms     remaining: 9.42s
14:     learn: 0.4598218       total: 768ms     remaining: 9.47s
15:     learn: 0.4576932       total: 882ms     remaining: 10.1s
16:     learn: 0.4548845       total: 999ms     remaining: 10.7s
17:     learn: 0.4525295       total: 1.06s     remaining: 10.7s
18:     learn: 0.4523446       total: 1.08s     remaining: 10.3s
19:     learn: 0.4504867       total: 1.13s     remaining: 10.1s
20:     learn: 0.4492945       total: 1.18s     remaining: 10.1s
21:     learn: 0.4482784       total: 1.24s     remaining: 10s
22:     learn: 0.4476685       total: 1.3s      remaining: 10s
23:     learn: 0.4471070       total: 1.36s     remaining: 9.96s
24:     learn: 0.4459390       total: 1.42s     remaining: 9.91s
25:     learn: 0.4455685       total: 1.47s     remaining: 9.81s
26:     learn: 0.4448888       total: 1.51s     remaining: 9.66s
27:     learn: 0.4441284       total: 1.56s     remaining: 9.59s
28:     learn: 0.4436639       total: 1.64s     remaining: 9.67s
29:     learn: 0.4430400       total: 1.69s     remaining: 9.59s
30:     learn: 0.4425551       total: 1.74s     remaining: 9.5s
31:     learn: 0.4422130       total: 1.79s     remaining: 9.41s
32:     learn: 0.4418817       total: 1.84s     remaining: 9.34s
33:     learn: 0.4407130       total: 1.91s     remaining: 9.32s
34:     learn: 0.4403001       total: 1.96s     remaining: 9.24s
35:     learn: 0.4397786       total: 2.01s     remaining: 9.15s
36:     learn: 0.4392751       total: 2.06s     remaining: 9.06s
37:     learn: 0.4385702       total: 2.11s     remaining: 9.01s
38:     learn: 0.4384229       total: 2.16s     remaining: 8.93s
39:     learn: 0.4379532       total: 2.22s     remaining: 8.88s
40:     learn: 0.4372869       total: 2.27s     remaining: 8.81s
41:     learn: 0.4371147       total: 2.31s     remaining: 8.7s
42:     learn: 0.4369963       total: 2.36s     remaining: 8.62s
43:     learn: 0.4366295       total: 2.41s     remaining: 8.56s
44:     learn: 0.4364520       total: 2.48s     remaining: 8.53s
45:     learn: 0.4362518       total: 2.52s     remaining: 8.45s
46:     learn: 0.4360320       total: 2.56s     remaining: 8.35s
47:     learn: 0.4353638       total: 2.62s     remaining: 8.29s
```

```
48:    learn: 0.4350147    total: 2.66s    remaining: 8.21s
49:    learn: 0.4347027    total: 2.73s    remaining: 8.18s
50:    learn: 0.4343202    total: 2.79s    remaining: 8.17s
51:    learn: 0.4340286    total: 2.85s    remaining: 8.12s
52:    learn: 0.4336600    total: 2.9s     remaining: 8.04s
53:    learn: 0.4333253    total: 2.94s    remaining: 7.95s
54:    learn: 0.4332995    total: 2.99s    remaining: 7.89s
55:    learn: 0.4331693    total: 3.04s    remaining: 7.82s
56:    learn: 0.4330871    total: 3.08s    remaining: 7.74s
57:    learn: 0.4324059    total: 3.14s    remaining: 7.68s
58:    learn: 0.4322467    total: 3.2s     remaining: 7.64s
59:    learn: 0.4319658    total: 3.26s    remaining: 7.6s
60:    learn: 0.4316613    total: 3.32s    remaining: 7.56s
61:    learn: 0.4315150    total: 3.38s    remaining: 7.52s
62:    learn: 0.4313267    total: 3.44s    remaining: 7.49s
63:    learn: 0.4310544    total: 3.5s     remaining: 7.45s
64:    learn: 0.4307752    total: 3.55s    remaining: 7.38s
65:    learn: 0.4299090    total: 3.63s    remaining: 7.38s
66:    learn: 0.4297968    total: 3.68s    remaining: 7.31s
67:    learn: 0.4295248    total: 3.74s    remaining: 7.26s
68:    learn: 0.4291960    total: 3.8s     remaining: 7.21s
69:    learn: 0.4289890    total: 3.88s    remaining: 7.21s
70:    learn: 0.4288357    total: 3.94s    remaining: 7.16s
71:    learn: 0.4285192    total: 3.99s    remaining: 7.09s
72:    learn: 0.4284510    total: 4.04s    remaining: 7.03s
73:    learn: 0.4282621    total: 4.09s    remaining: 6.97s
74:    learn: 0.4282397    total: 4.12s    remaining: 6.87s
75:    learn: 0.4278723    total: 4.17s    remaining: 6.81s
76:    learn: 0.4276704    total: 4.23s    remaining: 6.76s
77:    learn: 0.4275597    total: 4.29s    remaining: 6.7s
78:    learn: 0.4274511    total: 4.35s    remaining: 6.67s
79:    learn: 0.4271599    total: 4.4s     remaining: 6.6s
80:    learn: 0.4271084    total: 4.45s    remaining: 6.54s
81:    learn: 0.4270805    total: 4.51s    remaining: 6.5s
82:    learn: 0.4268286    total: 4.63s    remaining: 6.53s
83:    learn: 0.4263956    total: 4.69s    remaining: 6.48s
84:    learn: 0.4263151    total: 4.72s    remaining: 6.39s
85:    learn: 0.4262372    total: 4.77s    remaining: 6.32s
86:    learn: 0.4261084    total: 4.83s    remaining: 6.28s
87:    learn: 0.4259264    total: 4.94s    remaining: 6.29s
88:    learn: 0.4258194    total: 5.01s    remaining: 6.24s
89:    learn: 0.4255446    total: 5.06s    remaining: 6.18s
90:    learn: 0.4254092    total: 5.11s    remaining: 6.12s
91:    learn: 0.4252728    total: 5.18s    remaining: 6.08s
92:    learn: 0.4247487    total: 5.24s    remaining: 6.03s
93:    learn: 0.4244662    total: 5.29s    remaining: 5.97s
94:    learn: 0.4243253    total: 5.34s    remaining: 5.9s
95:    learn: 0.4240551    total: 5.4s     remaining: 5.85s
```

```
96:     learn: 0.4238035     total: 5.46s     remaining: 5.8s
97:     learn: 0.4232251     total: 5.51s     remaining: 5.73s
98:     learn: 0.4228466     total: 5.56s     remaining: 5.67s
99:     learn: 0.4225188     total: 5.61s     remaining: 5.61s
100:    learn: 0.4223058     total: 5.67s     remaining: 5.56s
101:    learn: 0.4221638     total: 5.72s     remaining: 5.5s
102:    learn: 0.4218334     total: 5.79s     remaining: 5.45s
103:    learn: 0.4216455     total: 5.84s     remaining: 5.39s
104:    learn: 0.4214558     total: 5.9s      remaining: 5.34s
105:    learn: 0.4212852     total: 5.95s     remaining: 5.27s
106:    learn: 0.4210546     total: 6s        remaining: 5.21s
107:    learn: 0.4208779     total: 6.04s     remaining: 5.15s
108:    learn: 0.4208679     total: 6.07s     remaining: 5.07s
109:    learn: 0.4201819     total: 6.13s     remaining: 5.01s
110:    learn: 0.4198919     total: 6.18s     remaining: 4.96s
111:    learn: 0.4197634     total: 6.25s     remaining: 4.91s
112:    learn: 0.4197575     total: 6.29s     remaining: 4.84s
113:    learn: 0.4194414     total: 6.34s     remaining: 4.79s
114:    learn: 0.4191570     total: 6.4s      remaining: 4.73s
115:    learn: 0.4188835     total: 6.46s     remaining: 4.67s
116:    learn: 0.4184718     total: 6.53s     remaining: 4.63s
117:    learn: 0.4182943     total: 6.59s     remaining: 4.58s
118:    learn: 0.4178894     total: 6.64s     remaining: 4.52s
119:    learn: 0.4169002     total: 6.69s     remaining: 4.46s
120:    learn: 0.4168342     total: 6.73s     remaining: 4.39s
121:    learn: 0.4167734     total: 6.78s     remaining: 4.33s
122:    learn: 0.4167640     total: 6.85s     remaining: 4.29s
123:    learn: 0.4163386     total: 6.89s     remaining: 4.22s
124:    learn: 0.4156912     total: 6.95s     remaining: 4.17s
125:    learn: 0.4149418     total: 7s        remaining: 4.11s
126:    learn: 0.4145506     total: 7.08s     remaining: 4.07s
127:    learn: 0.4144020     total: 7.14s     remaining: 4.01s
128:    learn: 0.4140243     total: 7.18s     remaining: 3.95s
129:    learn: 0.4136953     total: 7.25s     remaining: 3.9s
130:    learn: 0.4134776     total: 7.31s     remaining: 3.85s
131:    learn: 0.4132676     total: 7.37s     remaining: 3.8s
132:    learn: 0.4129653     total: 7.44s     remaining: 3.75s
133:    learn: 0.4127635     total: 7.49s     remaining: 3.69s
134:    learn: 0.4124241     total: 7.54s     remaining: 3.63s
135:    learn: 0.4120588     total: 7.59s     remaining: 3.57s
136:    learn: 0.4116917     total: 7.65s     remaining: 3.52s
137:    learn: 0.4116708     total: 7.71s     remaining: 3.46s
138:    learn: 0.4115596     total: 7.76s     remaining: 3.41s
139:    learn: 0.4113179     total: 7.81s     remaining: 3.35s
140:    learn: 0.4111821     total: 7.86s     remaining: 3.29s
141:    learn: 0.4108738     total: 7.92s     remaining: 3.23s
142:    learn: 0.4104646     total: 7.97s     remaining: 3.18s
143:    learn: 0.4103319     total: 8.03s     remaining: 3.12s
```

```
144:    learn: 0.4103071    total: 8.07s    remaining: 3.06s
145:    learn: 0.4100750    total: 8.12s    remaining: 3s
146:    learn: 0.4097991    total: 8.16s    remaining: 2.94s
147:    learn: 0.4097827    total: 8.21s    remaining: 2.88s
148:    learn: 0.4095365    total: 8.27s    remaining: 2.83s
149:    learn: 0.4092622    total: 8.33s    remaining: 2.77s
150:    learn: 0.4089049    total: 8.38s    remaining: 2.72s
151:    learn: 0.4086119    total: 8.45s    remaining: 2.67s
152:    learn: 0.4083472    total: 8.51s    remaining: 2.61s
153:    learn: 0.4083354    total: 8.56s    remaining: 2.56s
154:    learn: 0.4082016    total: 8.62s    remaining: 2.5s
155:    learn: 0.4080198    total: 8.68s    remaining: 2.45s
156:    learn: 0.4078079    total: 8.74s    remaining: 2.39s
157:    learn: 0.4076826    total: 8.78s    remaining: 2.33s
158:    learn: 0.4075061    total: 8.83s    remaining: 2.28s
159:    learn: 0.4073109    total: 8.9s     remaining: 2.22s
160:    learn: 0.4071920    total: 8.97s    remaining: 2.17s
161:    learn: 0.4070978    total: 9.03s    remaining: 2.12s
162:    learn: 0.4068587    total: 9.08s    remaining: 2.06s
163:    learn: 0.4066271    total: 9.15s    remaining: 2.01s
164:    learn: 0.4063736    total: 9.22s    remaining: 1.96s
165:    learn: 0.4060140    total: 9.27s    remaining: 1.9s
166:    learn: 0.4056249    total: 9.31s    remaining: 1.84s
167:    learn: 0.4055295    total: 9.37s    remaining: 1.78s
168:    learn: 0.4052970    total: 9.43s    remaining: 1.73s
169:    learn: 0.4052852    total: 9.49s    remaining: 1.68s
170:    learn: 0.4051483    total: 9.55s    remaining: 1.62s
171:    learn: 0.4050822    total: 9.61s    remaining: 1.56s
172:    learn: 0.4048093    total: 9.66s    remaining: 1.51s
173:    learn: 0.4046988    total: 9.71s    remaining: 1.45s
174:    learn: 0.4045326    total: 9.76s    remaining: 1.39s
175:    learn: 0.4043203    total: 9.82s    remaining: 1.34s
176:    learn: 0.4041104    total: 9.87s    remaining: 1.28s
177:    learn: 0.4037087    total: 9.93s    remaining: 1.23s
178:    learn: 0.4035462    total: 9.99s    remaining: 1.17s
179:    learn: 0.4033836    total: 10s      remaining: 1.12s
180:    learn: 0.4032754    total: 10.1s    remaining: 1.06s
181:    learn: 0.4031061    total: 10.2s    remaining: 1s
182:    learn: 0.4029222    total: 10.2s    remaining: 950ms
183:    learn: 0.4028041    total: 10.3s    remaining: 894ms
184:    learn: 0.4027424    total: 10.3s    remaining: 838ms
185:    learn: 0.4026306    total: 10.4s    remaining: 782ms
186:    learn: 0.4025312    total: 10.4s    remaining: 726ms
187:    learn: 0.4024817    total: 10.5s    remaining: 669ms
188:    learn: 0.4024033    total: 10.5s    remaining: 613ms
189:    learn: 0.4021895    total: 10.6s    remaining: 558ms
190:    learn: 0.4021100    total: 10.7s    remaining: 503ms
191:    learn: 0.4019640    total: 10.7s    remaining: 447ms
```

```
192:    learn: 0.4019125    total: 10.8s    remaining: 391ms
193:    learn: 0.4018985    total: 10.8s    remaining: 334ms
194:    learn: 0.4018392    total: 10.9s    remaining: 279ms
195:    learn: 0.4017533    total: 10.9s    remaining: 223ms
196:    learn: 0.4015108    total: 11s      remaining: 167ms
197:    learn: 0.4014046    total: 11s      remaining: 111ms
198:    learn: 0.4012201    total: 11.1s    remaining: 55.7ms
199:    learn: 0.4012155    total: 11.1s    remaining: 0us
```
Mean train f1-score of data (CV) 19 is : 0.8169795423811778
Mean test f1-score of data (CV) 19 is : 0.8057229374819629

Shape of data 20 is :
(27303, 10)
Distribution of 20 is :
Yes   14102
No   13201
Name: TIMELY_RESPONSE, dtype: int64

<IPython.core.display.HTML object>

MetricVisualizer(layout=Layout(align_self='stretch', height='500px'))

Train f1_score [Yes]: for data 20 is : 0.8158208243983798
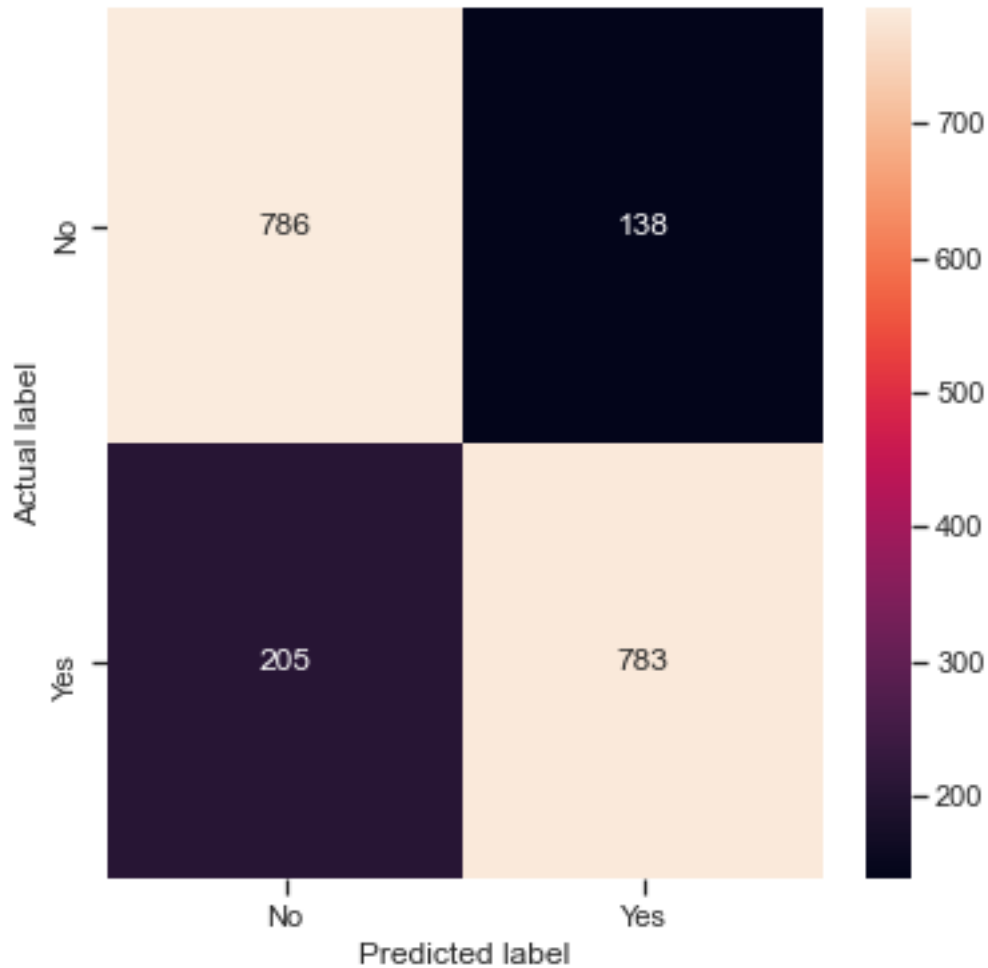Train f1_score [No]: for data 20 is : 0.818828125

	precision	recall	f1-score	support
No	0.79	0.85	0.82	924
Yes	0.85	0.79	0.82	988
accuracy			0.82	1912
macro avg	0.82	0.82	0.82	1912
weighted avg	0.82	0.82	0.82	1912

Cross validation result for data 20 is :

```
0:      learn: 0.6417501      total: 43.4ms    remaining: 8.63s
1:      learn: 0.5949471      total: 86.9ms    remaining: 8.6s
2:      learn: 0.5665169      total: 136ms     remaining: 8.9s
3:      learn: 0.5399548      total: 178ms     remaining: 8.7s
4:      learn: 0.5229349      total: 236ms     remaining: 9.19s
5:      learn: 0.5092728      total: 311ms     remaining: 10.1s
6:      learn: 0.4977748      total: 376ms     remaining: 10.4s
7:      learn: 0.4901223      total: 458ms     remaining: 11s
8:      learn: 0.4832040      total: 508ms     remaining: 10.8s
9:      learn: 0.4747515      total: 562ms     remaining: 10.7s
10:     learn: 0.4692340      total: 613ms     remaining: 10.5s
11:     learn: 0.4632639      total: 682ms     remaining: 10.7s
12:     learn: 0.4597641      total: 738ms     remaining: 10.6s
13:     learn: 0.4572380      total: 807ms     remaining: 10.7s
14:     learn: 0.4549535      total: 853ms     remaining: 10.5s
15:     learn: 0.4531119      total: 911ms     remaining: 10.5s
```

```
16:     learn: 0.4514119     total: 966ms    remaining: 10.4s
17:     learn: 0.4498733     total: 1.01s    remaining: 10.3s
18:     learn: 0.4484800     total: 1.08s    remaining: 10.3s
19:     learn: 0.4475211     total: 1.13s    remaining: 10.1s
20:     learn: 0.4457699     total: 1.19s    remaining: 10.2s
21:     learn: 0.4449122     total: 1.25s    remaining: 10.1s
22:     learn: 0.4438073     total: 1.3s     remaining: 10s
23:     learn: 0.4428903     total: 1.35s    remaining: 9.89s
24:     learn: 0.4418017     total: 1.4s     remaining: 9.82s
25:     learn: 0.4410733     total: 1.45s    remaining: 9.7s
26:     learn: 0.4404467     total: 1.5s     remaining: 9.63s
27:     learn: 0.4398978     total: 1.56s    remaining: 9.61s
28:     learn: 0.4395564     total: 1.63s    remaining: 9.61s
29:     learn: 0.4393257     total: 1.7s     remaining: 9.65s
30:     learn: 0.4382767     total: 1.76s    remaining: 9.63s
31:     learn: 0.4377307     total: 1.81s    remaining: 9.52s
32:     learn: 0.4368485     total: 1.87s    remaining: 9.46s
33:     learn: 0.4362325     total: 1.92s    remaining: 9.39s
34:     learn: 0.4360103     total: 1.99s    remaining: 9.37s
35:     learn: 0.4355953     total: 2.04s    remaining: 9.28s
36:     learn: 0.4354180     total: 2.1s     remaining: 9.23s
37:     learn: 0.4351386     total: 2.15s    remaining: 9.17s
38:     learn: 0.4347787     total: 2.2s     remaining: 9.07s
39:     learn: 0.4344498     total: 2.25s    remaining: 9s
40:     learn: 0.4339705     total: 2.29s    remaining: 8.9s
41:     learn: 0.4337991     total: 2.37s    remaining: 8.9s
42:     learn: 0.4336816     total: 2.41s    remaining: 8.81s
43:     learn: 0.4332958     total: 2.46s    remaining: 8.73s
44:     learn: 0.4330186     total: 2.51s    remaining: 8.65s
45:     learn: 0.4319831     total: 2.56s    remaining: 8.57s
46:     learn: 0.4318337     total: 2.69s    remaining: 8.76s
47:     learn: 0.4313598     total: 2.76s    remaining: 8.73s
48:     learn: 0.4307750     total: 2.81s    remaining: 8.66s
49:     learn: 0.4302876     total: 2.87s    remaining: 8.61s
50:     learn: 0.4293948     total: 2.93s    remaining: 8.56s
51:     learn: 0.4293256     total: 2.98s    remaining: 8.47s
52:     learn: 0.4291924     total: 3.03s    remaining: 8.41s
53:     learn: 0.4290881     total: 3.08s    remaining: 8.32s
54:     learn: 0.4288929     total: 3.12s    remaining: 8.23s
55:     learn: 0.4284037     total: 3.18s    remaining: 8.18s
56:     learn: 0.4278448     total: 3.23s    remaining: 8.12s
57:     learn: 0.4272083     total: 3.31s    remaining: 8.12s
58:     learn: 0.4268179     total: 3.39s    remaining: 8.09s
59:     learn: 0.4265557     total: 3.44s    remaining: 8.03s
60:     learn: 0.4264747     total: 3.5s     remaining: 7.98s
61:     learn: 0.4262588     total: 3.55s    remaining: 7.89s
62:     learn: 0.4259548     total: 3.61s    remaining: 7.85s
63:     learn: 0.4256866     total: 3.66s    remaining: 7.79s
```

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64:     learn: 0.4246099     total: 3.72s     remaining: 7.73s
65:     learn: 0.4243936     total: 3.77s     remaining: 7.65s
66:     learn: 0.4242956     total: 3.81s     remaining: 7.57s
67:     learn: 0.4238850     total: 3.86s     remaining: 7.49s
68:     learn: 0.4236984     total: 3.91s     remaining: 7.42s
69:     learn: 0.4234583     total: 3.95s     remaining: 7.33s
70:     learn: 0.4232614     total: 4.01s     remaining: 7.28s
71:     learn: 0.4231263     total: 4.05s     remaining: 7.21s
72:     learn: 0.4229163     total: 4.11s     remaining: 7.16s
73:     learn: 0.4222101     total: 4.16s     remaining: 7.08s
74:     learn: 0.4214939     total: 4.23s     remaining: 7.05s
75:     learn: 0.4213720     total: 4.28s     remaining: 6.99s
76:     learn: 0.4206081     total: 4.33s     remaining: 6.92s
77:     learn: 0.4204357     total: 4.38s     remaining: 6.85s
78:     learn: 0.4202205     total: 4.44s     remaining: 6.81s
79:     learn: 0.4200250     total: 4.5s      remaining: 6.74s
80:     learn: 0.4197253     total: 4.55s     remaining: 6.68s
81:     learn: 0.4195746     total: 4.6s      remaining: 6.62s
82:     learn: 0.4194439     total: 4.66s     remaining: 6.56s
83:     learn: 0.4192419     total: 4.7s      remaining: 6.49s
84:     learn: 0.4191369     total: 4.75s     remaining: 6.43s
85:     learn: 0.4188607     total: 4.81s     remaining: 6.38s
86:     learn: 0.4187633     total: 4.86s     remaining: 6.32s
87:     learn: 0.4186903     total: 4.9s      remaining: 6.24s
88:     learn: 0.4180910     total: 4.95s     remaining: 6.17s
89:     learn: 0.4180405     total: 5.04s     remaining: 6.16s
90:     learn: 0.4175952     total: 5.1s      remaining: 6.11s
91:     learn: 0.4174369     total: 5.15s     remaining: 6.05s
92:     learn: 0.4168497     total: 5.2s      remaining: 5.98s
93:     learn: 0.4166073     total: 5.25s     remaining: 5.92s
94:     learn: 0.4164067     total: 5.3s      remaining: 5.86s
95:     learn: 0.4164018     total: 5.34s     remaining: 5.79s
96:     learn: 0.4160184     total: 5.38s     remaining: 5.71s
97:     learn: 0.4157906     total: 5.42s     remaining: 5.64s
98:     learn: 0.4153095     total: 5.49s     remaining: 5.6s
99:     learn: 0.4152025     total: 5.54s     remaining: 5.54s
100:    learn: 0.4150425     total: 5.6s      remaining: 5.49s
101:    learn: 0.4150047     total: 5.63s     remaining: 5.41s
102:    learn: 0.4147113     total: 5.68s     remaining: 5.35s
103:    learn: 0.4146262     total: 5.74s     remaining: 5.3s
104:    learn: 0.4141687     total: 5.8s      remaining: 5.24s
105:    learn: 0.4141085     total: 5.86s     remaining: 5.2s
106:    learn: 0.4137522     total: 5.93s     remaining: 5.15s
107:    learn: 0.4136083     total: 6.01s     remaining: 5.12s
108:    learn: 0.4133627     total: 6.07s     remaining: 5.06s
109:    learn: 0.4131117     total: 6.12s     remaining: 5s
110:    learn: 0.4129543     total: 6.18s     remaining: 4.96s
111:    learn: 0.4128655     total: 6.22s     remaining: 4.89s
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112:    learn: 0.4123942    total: 6.28s    remaining: 4.83s
113:    learn: 0.4121864    total: 6.34s    remaining: 4.78s
114:    learn: 0.4120384    total: 6.4s     remaining: 4.73s
115:    learn: 0.4118784    total: 6.46s    remaining: 4.67s
116:    learn: 0.4115535    total: 6.52s    remaining: 4.63s
117:    learn: 0.4114212    total: 6.58s    remaining: 4.57s
118:    learn: 0.4109430    total: 6.63s    remaining: 4.52s
119:    learn: 0.4105131    total: 6.68s    remaining: 4.46s
120:    learn: 0.4104146    total: 6.75s    remaining: 4.41s
121:    learn: 0.4103238    total: 6.8s     remaining: 4.34s
122:    learn: 0.4098925    total: 6.85s    remaining: 4.29s
123:    learn: 0.4093337    total: 6.9s     remaining: 4.23s
124:    learn: 0.4091341    total: 6.96s    remaining: 4.17s
125:    learn: 0.4087703    total: 7.01s    remaining: 4.11s
126:    learn: 0.4085505    total: 7.06s    remaining: 4.06s
127:    learn: 0.4082604    total: 7.12s    remaining: 4.01s
128:    learn: 0.4078567    total: 7.17s    remaining: 3.95s
129:    learn: 0.4076726    total: 7.26s    remaining: 3.91s
130:    learn: 0.4073806    total: 7.31s    remaining: 3.85s
131:    learn: 0.4073090    total: 7.36s    remaining: 3.79s
132:    learn: 0.4069687    total: 7.43s    remaining: 3.74s
133:    learn: 0.4066022    total: 7.48s    remaining: 3.68s
134:    learn: 0.4065123    total: 7.55s    remaining: 3.63s
135:    learn: 0.4063929    total: 7.62s    remaining: 3.59s
136:    learn: 0.4062140    total: 7.67s    remaining: 3.53s
137:    learn: 0.4060770    total: 7.71s    remaining: 3.46s
138:    learn: 0.4059496    total: 7.76s    remaining: 3.41s
139:    learn: 0.4057949    total: 7.81s    remaining: 3.35s
140:    learn: 0.4057402    total: 7.86s    remaining: 3.29s
141:    learn: 0.4053521    total: 7.93s    remaining: 3.24s
142:    learn: 0.4051093    total: 8.01s    remaining: 3.19s
143:    learn: 0.4049769    total: 8.05s    remaining: 3.13s
144:    learn: 0.4047256    total: 8.11s    remaining: 3.08s
145:    learn: 0.4047124    total: 8.17s    remaining: 3.02s
146:    learn: 0.4043482    total: 8.23s    remaining: 2.97s
147:    learn: 0.4040611    total: 8.28s    remaining: 2.91s
148:    learn: 0.4036641    total: 8.33s    remaining: 2.85s
149:    learn: 0.4035266    total: 8.38s    remaining: 2.79s
150:    learn: 0.4033870    total: 8.43s    remaining: 2.74s
151:    learn: 0.4032226    total: 8.5s     remaining: 2.69s
152:    learn: 0.4030003    total: 8.56s    remaining: 2.63s
153:    learn: 0.4027845    total: 8.61s    remaining: 2.57s
154:    learn: 0.4027693    total: 8.67s    remaining: 2.52s
155:    learn: 0.4025123    total: 8.74s    remaining: 2.46s
156:    learn: 0.4021948    total: 8.8s     remaining: 2.41s
157:    learn: 0.4020671    total: 8.87s    remaining: 2.36s
158:    learn: 0.4019715    total: 8.94s    remaining: 2.31s
159:    learn: 0.4018120    total: 9.01s    remaining: 2.25s
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160:     learn: 0.4015949     total: 9.06s     remaining: 2.19s
161:     learn: 0.4011905     total: 9.13s     remaining: 2.14s
162:     learn: 0.4008215     total: 9.19s     remaining: 2.08s
163:     learn: 0.4006884     total: 9.25s     remaining: 2.03s
164:     learn: 0.4005346     total: 9.31s     remaining: 1.98s
165:     learn: 0.4003169     total: 9.37s     remaining: 1.92s
166:     learn: 0.4001827     total: 9.41s     remaining: 1.86s
167:     learn: 0.4000836     total: 9.46s     remaining: 1.8s
168:     learn: 0.3999620     total: 9.51s     remaining: 1.74s
169:     learn: 0.3997614     total: 9.57s     remaining: 1.69s
170:     learn: 0.3996621     total: 9.62s     remaining: 1.63s
171:     learn: 0.3991282     total: 9.66s     remaining: 1.57s
172:     learn: 0.3987414     total: 9.73s     remaining: 1.52s
173:     learn: 0.3986658     total: 9.79s     remaining: 1.46s
174:     learn: 0.3985388     total: 9.84s     remaining: 1.41s
175:     learn: 0.3983094     total: 9.91s     remaining: 1.35s
176:     learn: 0.3981651     total: 9.96s     remaining: 1.29s
177:     learn: 0.3979275     total: 10s       remaining: 1.24s
178:     learn: 0.3978464     total: 10.1s     remaining: 1.18s
179:     learn: 0.3976702     total: 10.1s     remaining: 1.13s
180:     learn: 0.3973762     total: 10.2s     remaining: 1.07s
181:     learn: 0.3972133     total: 10.2s     remaining: 1.01s
182:     learn: 0.3971465     total: 10.3s     remaining: 955ms
183:     learn: 0.3969588     total: 10.3s     remaining: 900ms
184:     learn: 0.3968301     total: 10.4s     remaining: 843ms
185:     learn: 0.3967621     total: 10.5s     remaining: 787ms
186:     learn: 0.3967166     total: 10.5s     remaining: 730ms
187:     learn: 0.3966452     total: 10.6s     remaining: 674ms
188:     learn: 0.3965798     total: 10.6s     remaining: 618ms
189:     learn: 0.3963577     total: 10.7s     remaining: 561ms
190:     learn: 0.3962491     total: 10.7s     remaining: 505ms
191:     learn: 0.3960544     total: 10.8s     remaining: 450ms
192:     learn: 0.3960118     total: 10.9s     remaining: 394ms
193:     learn: 0.3958164     total: 10.9s     remaining: 338ms
194:     learn: 0.3954892     total: 11s       remaining: 282ms
195:     learn: 0.3950394     total: 11.1s     remaining: 226ms
196:     learn: 0.3946506     total: 11.1s     remaining: 169ms
197:     learn: 0.3944829     total: 11.2s     remaining: 113ms
198:     learn: 0.3943583     total: 11.2s     remaining: 56.3ms
199:     learn: 0.3942291     total: 11.3s     remaining: 0us
0:       learn: 0.6447833     total: 49.9ms    remaining: 9.93s
1:       learn: 0.6087745     total: 93.4ms    remaining: 9.24s
2:       learn: 0.5718758     total: 138ms     remaining: 9.05s
3:       learn: 0.5469937     total: 183ms     remaining: 8.99s
4:       learn: 0.5276751     total: 249ms     remaining: 9.7s
5:       learn: 0.5152026     total: 301ms     remaining: 9.72s
6:       learn: 0.5044323     total: 356ms     remaining: 9.83s
7:       learn: 0.4957938     total: 413ms     remaining: 9.92s
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8:      learn: 0.4871175      total: 465ms      remaining: 9.86s
9:      learn: 0.4812713      total: 509ms      remaining: 9.67s
10:     learn: 0.4761005      total: 554ms      remaining: 9.52s
11:     learn: 0.4711441      total: 603ms      remaining: 9.44s
12:     learn: 0.4673111      total: 660ms      remaining: 9.49s
13:     learn: 0.4646839      total: 701ms      remaining: 9.31s
14:     learn: 0.4617188      total: 762ms      remaining: 9.39s
15:     learn: 0.4582692      total: 813ms      remaining: 9.36s
16:     learn: 0.4571177      total: 845ms      remaining: 9.1s
17:     learn: 0.4546985      total: 894ms      remaining: 9.04s
18:     learn: 0.4534463      total: 946ms      remaining: 9.02s
19:     learn: 0.4515118      total: 1.01s      remaining: 9.08s
20:     learn: 0.4506243      total: 1.07s      remaining: 9.09s
21:     learn: 0.4497802      total: 1.11s      remaining: 8.99s
22:     learn: 0.4486527      total: 1.16s      remaining: 8.95s
23:     learn: 0.4469743      total: 1.22s      remaining: 8.93s
24:     learn: 0.4457846      total: 1.28s      remaining: 9s
25:     learn: 0.4444160      total: 1.34s      remaining: 8.97s
26:     learn: 0.4437280      total: 1.39s      remaining: 8.89s
27:     learn: 0.4431259      total: 1.44s      remaining: 8.87s
28:     learn: 0.4420438      total: 1.5s       remaining: 8.85s
29:     learn: 0.4417608      total: 1.56s      remaining: 8.87s
30:     learn: 0.4413714      total: 1.61s      remaining: 8.79s
31:     learn: 0.4410179      total: 1.67s      remaining: 8.75s
32:     learn: 0.4402076      total: 1.73s      remaining: 8.73s
33:     learn: 0.4396442      total: 1.77s      remaining: 8.67s
34:     learn: 0.4391770      total: 1.83s      remaining: 8.62s
35:     learn: 0.4385094      total: 1.88s      remaining: 8.55s
36:     learn: 0.4381401      total: 1.95s      remaining: 8.57s
37:     learn: 0.4378440      total: 2s         remaining: 8.53s
38:     learn: 0.4375500      total: 2.04s      remaining: 8.44s
39:     learn: 0.4364512      total: 2.11s      remaining: 8.44s
40:     learn: 0.4360397      total: 2.16s      remaining: 8.39s
41:     learn: 0.4359893      total: 2.19s      remaining: 8.25s
42:     learn: 0.4353670      total: 2.25s      remaining: 8.23s
43:     learn: 0.4351881      total: 2.3s       remaining: 8.16s
44:     learn: 0.4349557      total: 2.36s      remaining: 8.13s
45:     learn: 0.4347156      total: 2.43s      remaining: 8.15s
46:     learn: 0.4346182      total: 2.48s      remaining: 8.09s
47:     learn: 0.4341704      total: 2.54s      remaining: 8.03s
48:     learn: 0.4340005      total: 2.59s      remaining: 7.99s
49:     learn: 0.4337371      total: 2.66s      remaining: 7.98s
50:     learn: 0.4331456      total: 2.71s      remaining: 7.93s
51:     learn: 0.4327253      total: 2.77s      remaining: 7.89s
52:     learn: 0.4322239      total: 2.82s      remaining: 7.81s
53:     learn: 0.4321166      total: 2.89s      remaining: 7.8s
54:     learn: 0.4318038      total: 2.94s      remaining: 7.76s
55:     learn: 0.4317116      total: 2.99s      remaining: 7.69s
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 56:    learn: 0.4315616    total: 3.04s    remaining: 7.62s
 57:    learn: 0.4312635    total: 3.12s    remaining: 7.63s
 58:    learn: 0.4309240    total: 3.17s    remaining: 7.57s
 59:    learn: 0.4308110    total: 3.22s    remaining: 7.52s
 60:    learn: 0.4306182    total: 3.28s    remaining: 7.48s
 61:    learn: 0.4304492    total: 3.33s    remaining: 7.41s
 62:    learn: 0.4300840    total: 3.38s    remaining: 7.35s
 63:    learn: 0.4293578    total: 3.44s    remaining: 7.32s
 64:    learn: 0.4292098    total: 3.51s    remaining: 7.29s
 65:    learn: 0.4287831    total: 3.58s    remaining: 7.28s
 66:    learn: 0.4285215    total: 3.63s    remaining: 7.21s
 67:    learn: 0.4284431    total: 3.69s    remaining: 7.16s
 68:    learn: 0.4283499    total: 3.73s    remaining: 7.08s
 69:    learn: 0.4282583    total: 3.79s    remaining: 7.04s
 70:    learn: 0.4278744    total: 3.85s    remaining: 7s
 71:    learn: 0.4275893    total: 3.9s     remaining: 6.94s
 72:    learn: 0.4270482    total: 3.96s    remaining: 6.88s
 73:    learn: 0.4268104    total: 4.01s    remaining: 6.82s
 74:    learn: 0.4261028    total: 4.06s    remaining: 6.76s
 75:    learn: 0.4260492    total: 4.1s     remaining: 6.69s
 76:    learn: 0.4257612    total: 4.14s    remaining: 6.62s
 77:    learn: 0.4256278    total: 4.2s     remaining: 6.57s
 78:    learn: 0.4253605    total: 4.25s    remaining: 6.51s
 79:    learn: 0.4251619    total: 4.31s    remaining: 6.46s
 80:    learn: 0.4250204    total: 4.36s    remaining: 6.4s
 81:    learn: 0.4248200    total: 4.4s     remaining: 6.34s
 82:    learn: 0.4245260    total: 4.47s    remaining: 6.3s
 83:    learn: 0.4244267    total: 4.52s    remaining: 6.24s
 84:    learn: 0.4241768    total: 4.58s    remaining: 6.2s
 85:    learn: 0.4240269    total: 4.63s    remaining: 6.14s
 86:    learn: 0.4237381    total: 4.69s    remaining: 6.09s
 87:    learn: 0.4234894    total: 4.75s    remaining: 6.04s
 88:    learn: 0.4229252    total: 4.8s     remaining: 5.99s
 89:    learn: 0.4224838    total: 4.86s    remaining: 5.94s
 90:    learn: 0.4220590    total: 4.92s    remaining: 5.89s
 91:    learn: 0.4219347    total: 4.98s    remaining: 5.85s
 92:    learn: 0.4219343    total: 5.01s    remaining: 5.77s
 93:    learn: 0.4216695    total: 5.06s    remaining: 5.7s
 94:    learn: 0.4216156    total: 5.12s    remaining: 5.65s
 95:    learn: 0.4215684    total: 5.16s    remaining: 5.59s
 96:    learn: 0.4214227    total: 5.21s    remaining: 5.53s
 97:    learn: 0.4210852    total: 5.25s    remaining: 5.47s
 98:    learn: 0.4208125    total: 5.3s     remaining: 5.41s
 99:    learn: 0.4207526    total: 5.34s    remaining: 5.34s
100:    learn: 0.4204809    total: 5.4s     remaining: 5.29s
101:    learn: 0.4203691    total: 5.45s    remaining: 5.23s
102:    learn: 0.4199958    total: 5.5s     remaining: 5.18s
103:    learn: 0.4198265    total: 5.57s    remaining: 5.14s
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104:    learn: 0.4197679    total: 5.62s    remaining: 5.08s
105:    learn: 0.4193326    total: 5.66s    remaining: 5.02s
106:    learn: 0.4190520    total: 5.71s    remaining: 4.97s
107:    learn: 0.4183981    total: 5.76s    remaining: 4.91s
108:    learn: 0.4183954    total: 5.81s    remaining: 4.85s
109:    learn: 0.4183392    total: 5.85s    remaining: 4.79s
110:    learn: 0.4176843    total: 5.9s     remaining: 4.73s
111:    learn: 0.4172021    total: 5.95s    remaining: 4.68s
112:    learn: 0.4167822    total: 6s       remaining: 4.62s
113:    learn: 0.4166731    total: 6.07s    remaining: 4.58s
114:    learn: 0.4166695    total: 6.11s    remaining: 4.52s
115:    learn: 0.4161579    total: 6.19s    remaining: 4.48s
116:    learn: 0.4160954    total: 6.26s    remaining: 4.44s
117:    learn: 0.4157672    total: 6.3s     remaining: 4.38s
118:    learn: 0.4157214    total: 6.35s    remaining: 4.32s
119:    learn: 0.4152229    total: 6.41s    remaining: 4.27s
120:    learn: 0.4147053    total: 6.46s    remaining: 4.22s
121:    learn: 0.4145777    total: 6.51s    remaining: 4.16s
122:    learn: 0.4143052    total: 6.56s    remaining: 4.11s
123:    learn: 0.4136675    total: 6.61s    remaining: 4.05s
124:    learn: 0.4136529    total: 6.67s    remaining: 4s
125:    learn: 0.4136381    total: 6.72s    remaining: 3.95s
126:    learn: 0.4133463    total: 6.81s    remaining: 3.91s
127:    learn: 0.4133289    total: 6.86s    remaining: 3.86s
128:    learn: 0.4130076    total: 6.91s    remaining: 3.8s
129:    learn: 0.4123055    total: 6.98s    remaining: 3.76s
130:    learn: 0.4121255    total: 7.04s    remaining: 3.71s
131:    learn: 0.4119193    total: 7.09s    remaining: 3.65s
132:    learn: 0.4117932    total: 7.14s    remaining: 3.6s
133:    learn: 0.4115559    total: 7.18s    remaining: 3.54s
134:    learn: 0.4115477    total: 7.24s    remaining: 3.48s
135:    learn: 0.4114350    total: 7.3s     remaining: 3.44s
136:    learn: 0.4108912    total: 7.35s    remaining: 3.38s
137:    learn: 0.4107933    total: 7.41s    remaining: 3.33s
138:    learn: 0.4107619    total: 7.45s    remaining: 3.27s
139:    learn: 0.4105626    total: 7.5s     remaining: 3.21s
140:    learn: 0.4105324    total: 7.56s    remaining: 3.16s
141:    learn: 0.4103878    total: 7.64s    remaining: 3.12s
142:    learn: 0.4101764    total: 7.7s     remaining: 3.07s
143:    learn: 0.4100294    total: 7.77s    remaining: 3.02s
144:    learn: 0.4099894    total: 7.81s    remaining: 2.96s
145:    learn: 0.4099224    total: 7.86s    remaining: 2.91s
146:    learn: 0.4098981    total: 7.93s    remaining: 2.86s
147:    learn: 0.4098245    total: 7.97s    remaining: 2.8s
148:    learn: 0.4097139    total: 8.03s    remaining: 2.75s
149:    learn: 0.4095509    total: 8.08s    remaining: 2.69s
150:    learn: 0.4094413    total: 8.15s    remaining: 2.64s
151:    learn: 0.4093822    total: 8.21s    remaining: 2.59s
```

```
152:    learn: 0.4089873    total: 8.27s    remaining: 2.54s
153:    learn: 0.4089002    total: 8.32s    remaining: 2.48s
154:    learn: 0.4088273    total: 8.37s    remaining: 2.43s
155:    learn: 0.4086793    total: 8.46s    remaining: 2.39s
156:    learn: 0.4085209    total: 8.53s    remaining: 2.34s
157:    learn: 0.4082998    total: 8.59s    remaining: 2.28s
158:    learn: 0.4082121    total: 8.65s    remaining: 2.23s
159:    learn: 0.4080385    total: 8.7s     remaining: 2.18s
160:    learn: 0.4078044    total: 8.78s    remaining: 2.13s
161:    learn: 0.4076637    total: 8.83s    remaining: 2.07s
162:    learn: 0.4075051    total: 8.89s    remaining: 2.02s
163:    learn: 0.4072726    total: 8.97s    remaining: 1.97s
164:    learn: 0.4068570    total: 9.04s    remaining: 1.92s
165:    learn: 0.4066029    total: 9.09s    remaining: 1.86s
166:    learn: 0.4064955    total: 9.14s    remaining: 1.81s
167:    learn: 0.4064381    total: 9.19s    remaining: 1.75s
168:    learn: 0.4062986    total: 9.26s    remaining: 1.7s
169:    learn: 0.4061982    total: 9.35s    remaining: 1.65s
170:    learn: 0.4061025    total: 9.39s    remaining: 1.59s
171:    learn: 0.4060257    total: 9.45s    remaining: 1.54s
172:    learn: 0.4059969    total: 9.51s    remaining: 1.48s
173:    learn: 0.4057559    total: 9.56s    remaining: 1.43s
174:    learn: 0.4055634    total: 9.61s    remaining: 1.37s
175:    learn: 0.4054294    total: 9.68s    remaining: 1.32s
176:    learn: 0.4050330    total: 9.74s    remaining: 1.26s
177:    learn: 0.4049224    total: 9.81s    remaining: 1.21s
178:    learn: 0.4047264    total: 9.86s    remaining: 1.16s
179:    learn: 0.4045412    total: 9.91s    remaining: 1.1s
180:    learn: 0.4045218    total: 9.97s    remaining: 1.05s
181:    learn: 0.4044100    total: 10s      remaining: 992ms
182:    learn: 0.4042263    total: 10.1s    remaining: 938ms
183:    learn: 0.4039359    total: 10.1s    remaining: 882ms
184:    learn: 0.4038542    total: 10.2s    remaining: 827ms
185:    learn: 0.4036403    total: 10.3s    remaining: 772ms
186:    learn: 0.4034868    total: 10.3s    remaining: 716ms
187:    learn: 0.4033209    total: 10.3s    remaining: 660ms
188:    learn: 0.4031851    total: 10.4s    remaining: 605ms
189:    learn: 0.4030262    total: 10.4s    remaining: 550ms
190:    learn: 0.4028342    total: 10.5s    remaining: 494ms
191:    learn: 0.4027438    total: 10.5s    remaining: 439ms
192:    learn: 0.4027242    total: 10.6s    remaining: 384ms
193:    learn: 0.4025858    total: 10.6s    remaining: 329ms
194:    learn: 0.4024424    total: 10.7s    remaining: 274ms
195:    learn: 0.4021711    total: 10.7s    remaining: 219ms
196:    learn: 0.4018709    total: 10.8s    remaining: 164ms
197:    learn: 0.4016474    total: 10.8s    remaining: 110ms
198:    learn: 0.4014787    total: 10.9s    remaining: 54.7ms
199:    learn: 0.4013661    total: 10.9s    remaining: 0us
```

```
0:      learn: 0.6294619      total: 43.3ms    remaining: 8.62s
1:      learn: 0.5951706      total: 90.6ms    remaining: 8.97s
2:      learn: 0.5688229      total: 140ms     remaining: 9.18s
3:      learn: 0.5486200      total: 184ms     remaining: 9s
4:      learn: 0.5245092      total: 227ms     remaining: 8.86s
5:      learn: 0.5094317      total: 274ms     remaining: 8.87s
6:      learn: 0.4947652      total: 329ms     remaining: 9.06s
7:      learn: 0.4858075      total: 374ms     remaining: 8.98s
8:      learn: 0.4768993      total: 428ms     remaining: 9.09s
9:      learn: 0.4709839      total: 474ms     remaining: 9s
10:     learn: 0.4665157      total: 522ms     remaining: 8.96s
11:     learn: 0.4607754      total: 570ms     remaining: 8.93s
12:     learn: 0.4581583      total: 613ms     remaining: 8.82s
13:     learn: 0.4546894      total: 685ms     remaining: 9.09s
14:     learn: 0.4525492      total: 737ms     remaining: 9.09s
15:     learn: 0.4506398      total: 785ms     remaining: 9.03s
16:     learn: 0.4492562      total: 867ms     remaining: 9.33s
17:     learn: 0.4480076      total: 927ms     remaining: 9.37s
18:     learn: 0.4456462      total: 980ms     remaining: 9.34s
19:     learn: 0.4444335      total: 1.05s     remaining: 9.46s
20:     learn: 0.4427813      total: 1.1s      remaining: 9.38s
21:     learn: 0.4415591      total: 1.16s     remaining: 9.38s
22:     learn: 0.4409245      total: 1.2s      remaining: 9.26s
23:     learn: 0.4394480      total: 1.25s     remaining: 9.18s
24:     learn: 0.4388050      total: 1.3s      remaining: 9.14s
25:     learn: 0.4377811      total: 1.36s     remaining: 9.09s
26:     learn: 0.4371614      total: 1.4s      remaining: 8.99s
27:     learn: 0.4365153      total: 1.45s     remaining: 8.93s
28:     learn: 0.4359570      total: 1.51s     remaining: 8.91s
29:     learn: 0.4354198      total: 1.56s     remaining: 8.87s
30:     learn: 0.4350343      total: 1.63s     remaining: 8.9s
31:     learn: 0.4341611      total: 1.7s      remaining: 8.9s
32:     learn: 0.4329232      total: 1.78s     remaining: 8.99s
33:     learn: 0.4325318      total: 1.83s     remaining: 8.92s
34:     learn: 0.4319893      total: 1.89s     remaining: 8.92s
35:     learn: 0.4312357      total: 1.95s     remaining: 8.89s
36:     learn: 0.4309768      total: 2s        remaining: 8.82s
37:     learn: 0.4308833      total: 2.06s     remaining: 8.79s
38:     learn: 0.4305870      total: 2.11s     remaining: 8.71s
39:     learn: 0.4298168      total: 2.15s     remaining: 8.62s
40:     learn: 0.4286864      total: 2.2s      remaining: 8.55s
41:     learn: 0.4284398      total: 2.27s     remaining: 8.55s
42:     learn: 0.4273140      total: 2.33s     remaining: 8.53s
43:     learn: 0.4269165      total: 2.39s     remaining: 8.48s
44:     learn: 0.4266496      total: 2.45s     remaining: 8.43s
45:     learn: 0.4265114      total: 2.49s     remaining: 8.34s
46:     learn: 0.4265065      total: 2.51s     remaining: 8.17s
47:     learn: 0.4263713      total: 2.55s     remaining: 8.09s
```

```
48:     learn: 0.4258920      total: 2.6s      remaining: 8.01s
49:     learn: 0.4256868      total: 2.67s     remaining: 8.03s
50:     learn: 0.4253889      total: 2.72s     remaining: 7.95s
51:     learn: 0.4252353      total: 2.8s      remaining: 7.97s
52:     learn: 0.4248075      total: 2.84s     remaining: 7.89s
53:     learn: 0.4244997      total: 2.91s     remaining: 7.87s
54:     learn: 0.4243554      total: 2.96s     remaining: 7.8s
55:     learn: 0.4241373      total: 3s        remaining: 7.72s
56:     learn: 0.4240317      total: 3.06s     remaining: 7.69s
57:     learn: 0.4238938      total: 3.11s     remaining: 7.62s
58:     learn: 0.4234815      total: 3.16s     remaining: 7.56s
59:     learn: 0.4232000      total: 3.22s     remaining: 7.52s
60:     learn: 0.4220921      total: 3.27s     remaining: 7.45s
61:     learn: 0.4213526      total: 3.32s     remaining: 7.38s
62:     learn: 0.4211977      total: 3.38s     remaining: 7.34s
63:     learn: 0.4208990      total: 3.43s     remaining: 7.29s
64:     learn: 0.4205226      total: 3.5s      remaining: 7.26s
65:     learn: 0.4201008      total: 3.56s     remaining: 7.22s
66:     learn: 0.4200626      total: 3.59s     remaining: 7.13s
67:     learn: 0.4198319      total: 3.65s     remaining: 7.08s
68:     learn: 0.4197888      total: 3.69s     remaining: 7.01s
69:     learn: 0.4196936      total: 3.75s     remaining: 6.97s
70:     learn: 0.4193817      total: 3.82s     remaining: 6.95s
71:     learn: 0.4193016      total: 3.88s     remaining: 6.9s
72:     learn: 0.4191668      total: 3.92s     remaining: 6.83s
73:     learn: 0.4189554      total: 3.97s     remaining: 6.76s
74:     learn: 0.4186851      total: 4.01s     remaining: 6.69s
75:     learn: 0.4184713      total: 4.06s     remaining: 6.62s
76:     learn: 0.4182993      total: 4.11s     remaining: 6.56s
77:     learn: 0.4179121      total: 4.17s     remaining: 6.52s
78:     learn: 0.4178122      total: 4.22s     remaining: 6.46s
79:     learn: 0.4175501      total: 4.29s     remaining: 6.44s
80:     learn: 0.4172547      total: 4.34s     remaining: 6.38s
81:     learn: 0.4171548      total: 4.41s     remaining: 6.34s
82:     learn: 0.4171098      total: 4.47s     remaining: 6.31s
83:     learn: 0.4167361      total: 4.53s     remaining: 6.26s
84:     learn: 0.4166289      total: 4.6s      remaining: 6.23s
85:     learn: 0.4163709      total: 4.66s     remaining: 6.18s
86:     learn: 0.4162485      total: 4.71s     remaining: 6.12s
87:     learn: 0.4160886      total: 4.77s     remaining: 6.07s
88:     learn: 0.4157112      total: 4.82s     remaining: 6.01s
89:     learn: 0.4156651      total: 4.86s     remaining: 5.94s
90:     learn: 0.4153816      total: 4.92s     remaining: 5.89s
91:     learn: 0.4152969      total: 4.98s     remaining: 5.85s
92:     learn: 0.4152505      total: 5.02s     remaining: 5.78s
93:     learn: 0.4151874      total: 5.06s     remaining: 5.71s
94:     learn: 0.4146076      total: 5.11s     remaining: 5.65s
95:     learn: 0.4139361      total: 5.17s     remaining: 5.61s
```

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96:     learn: 0.4137032     total: 5.23s     remaining: 5.55s
97:     learn: 0.4134206     total: 5.28s     remaining: 5.5s
98:     learn: 0.4132942     total: 5.35s     remaining: 5.46s
99:     learn: 0.4126052     total: 5.41s     remaining: 5.41s
100:    learn: 0.4123202     total: 5.49s     remaining: 5.38s
101:    learn: 0.4120045     total: 5.55s     remaining: 5.33s
102:    learn: 0.4118722     total: 5.61s     remaining: 5.28s
103:    learn: 0.4118416     total: 5.66s     remaining: 5.22s
104:    learn: 0.4112032     total: 5.73s     remaining: 5.19s
105:    learn: 0.4110816     total: 5.8s      remaining: 5.14s
106:    learn: 0.4105729     total: 5.85s     remaining: 5.09s
107:    learn: 0.4104603     total: 5.91s     remaining: 5.03s
108:    learn: 0.4101281     total: 5.99s     remaining: 5s
109:    learn: 0.4100549     total: 6.04s     remaining: 4.94s
110:    learn: 0.4097252     total: 6.1s      remaining: 4.89s
111:    learn: 0.4095754     total: 6.15s     remaining: 4.83s
112:    learn: 0.4095366     total: 6.23s     remaining: 4.79s
113:    learn: 0.4093778     total: 6.29s     remaining: 4.74s
114:    learn: 0.4093777     total: 6.31s     remaining: 4.66s
115:    learn: 0.4091564     total: 6.37s     remaining: 4.61s
116:    learn: 0.4086207     total: 6.43s     remaining: 4.56s
117:    learn: 0.4084767     total: 6.49s     remaining: 4.51s
118:    learn: 0.4081071     total: 6.57s     remaining: 4.47s
119:    learn: 0.4079010     total: 6.63s     remaining: 4.42s
120:    learn: 0.4078661     total: 6.68s     remaining: 4.36s
121:    learn: 0.4072944     total: 6.74s     remaining: 4.31s
122:    learn: 0.4071221     total: 6.82s     remaining: 4.27s
123:    learn: 0.4070061     total: 6.89s     remaining: 4.22s
124:    learn: 0.4069396     total: 6.94s     remaining: 4.16s
125:    learn: 0.4068201     total: 7s        remaining: 4.11s
126:    learn: 0.4064999     total: 7.07s     remaining: 4.06s
127:    learn: 0.4061909     total: 7.13s     remaining: 4.01s
128:    learn: 0.4060247     total: 7.2s      remaining: 3.96s
129:    learn: 0.4060051     total: 7.25s     remaining: 3.9s
130:    learn: 0.4059824     total: 7.32s     remaining: 3.86s
131:    learn: 0.4056408     total: 7.38s     remaining: 3.8s
132:    learn: 0.4055172     total: 7.43s     remaining: 3.75s
133:    learn: 0.4054099     total: 7.49s     remaining: 3.69s
134:    learn: 0.4053853     total: 7.55s     remaining: 3.63s
135:    learn: 0.4050129     total: 7.61s     remaining: 3.58s
136:    learn: 0.4048670     total: 7.67s     remaining: 3.53s
137:    learn: 0.4046836     total: 7.72s     remaining: 3.47s
138:    learn: 0.4045848     total: 7.77s     remaining: 3.41s
139:    learn: 0.4044134     total: 7.82s     remaining: 3.35s
140:    learn: 0.4044019     total: 7.9s      remaining: 3.31s
141:    learn: 0.4041910     total: 7.97s     remaining: 3.25s
142:    learn: 0.4040402     total: 8.04s     remaining: 3.2s
143:    learn: 0.4037930     total: 8.1s      remaining: 3.15s
```

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144:    learn: 0.4035615    total: 8.15s    remaining: 3.09s
145:    learn: 0.4034182    total: 8.21s    remaining: 3.04s
146:    learn: 0.4032826    total: 8.27s    remaining: 2.98s
147:    learn: 0.4031423    total: 8.35s    remaining: 2.93s
148:    learn: 0.4030862    total: 8.4s     remaining: 2.88s
149:    learn: 0.4029929    total: 8.45s    remaining: 2.82s
150:    learn: 0.4029211    total: 8.5s     remaining: 2.76s
151:    learn: 0.4027570    total: 8.55s    remaining: 2.7s
152:    learn: 0.4025076    total: 8.63s    remaining: 2.65s
153:    learn: 0.4023282    total: 8.69s    remaining: 2.59s
154:    learn: 0.4023092    total: 8.73s    remaining: 2.53s
155:    learn: 0.4020758    total: 8.77s    remaining: 2.47s
156:    learn: 0.4016773    total: 8.84s    remaining: 2.42s
157:    learn: 0.4015633    total: 8.91s    remaining: 2.37s
158:    learn: 0.4014688    total: 8.96s    remaining: 2.31s
159:    learn: 0.4013685    total: 9.03s    remaining: 2.26s
160:    learn: 0.4012958    total: 9.08s    remaining: 2.2s
161:    learn: 0.4008749    total: 9.14s    remaining: 2.14s
162:    learn: 0.4008196    total: 9.21s    remaining: 2.09s
163:    learn: 0.4006337    total: 9.27s    remaining: 2.04s
164:    learn: 0.4004767    total: 9.32s    remaining: 1.98s
165:    learn: 0.4002636    total: 9.38s    remaining: 1.92s
166:    learn: 0.4001179    total: 9.43s    remaining: 1.86s
167:    learn: 0.3998827    total: 9.48s    remaining: 1.81s
168:    learn: 0.3997958    total: 9.55s    remaining: 1.75s
169:    learn: 0.3996954    total: 9.61s    remaining: 1.7s
170:    learn: 0.3996881    total: 9.66s    remaining: 1.64s
171:    learn: 0.3994627    total: 9.71s    remaining: 1.58s
172:    learn: 0.3991289    total: 9.78s    remaining: 1.53s
173:    learn: 0.3990590    total: 9.85s    remaining: 1.47s
174:    learn: 0.3989498    total: 9.91s    remaining: 1.42s
175:    learn: 0.3988073    total: 9.96s    remaining: 1.36s
176:    learn: 0.3985720    total: 10s      remaining: 1.3s
177:    learn: 0.3983365    total: 10.1s    remaining: 1.25s
178:    learn: 0.3980945    total: 10.2s    remaining: 1.19s
179:    learn: 0.3979402    total: 10.2s    remaining: 1.14s
180:    learn: 0.3977909    total: 10.3s    remaining: 1.08s
181:    learn: 0.3974953    total: 10.3s    remaining: 1.02s
182:    learn: 0.3974489    total: 10.4s    remaining: 963ms
183:    learn: 0.3972201    total: 10.4s    remaining: 906ms
184:    learn: 0.3971949    total: 10.5s    remaining: 849ms
185:    learn: 0.3970130    total: 10.5s    remaining: 792ms
186:    learn: 0.3969342    total: 10.6s    remaining: 735ms
187:    learn: 0.3968643    total: 10.6s    remaining: 677ms
188:    learn: 0.3968579    total: 10.7s    remaining: 621ms
189:    learn: 0.3967326    total: 10.7s    remaining: 564ms
190:    learn: 0.3966583    total: 10.8s    remaining: 507ms
191:    learn: 0.3964758    total: 10.8s    remaining: 450ms
```

```
192:    learn: 0.3963164      total: 10.9s    remaining: 394ms
193:    learn: 0.3961220      total: 10.9s    remaining: 338ms
194:    learn: 0.3959655      total: 11s      remaining: 282ms
195:    learn: 0.3957381      total: 11s      remaining: 225ms
196:    learn: 0.3955473      total: 11.1s    remaining: 169ms
197:    learn: 0.3954685      total: 11.1s    remaining: 113ms
198:    learn: 0.3950546      total: 11.2s    remaining: 56.2ms
199:    learn: 0.3948939      total: 11.2s    remaining: 0us
```
Mean train f1-score of data (CV) 20 is : 0.8177625411084418
Mean test f1-score of data (CV) 20 is : 0.8064018452299228

Shape of data 21 is :
(27303, 10)
Distribution of 21 is :
Yes   14102
No   13201
Name: TIMELY_RESPONSE, dtype: int64

<IPython.core.display.HTML object>

MetricVisualizer(layout=Layout(align_self='stretch', height='500px'))
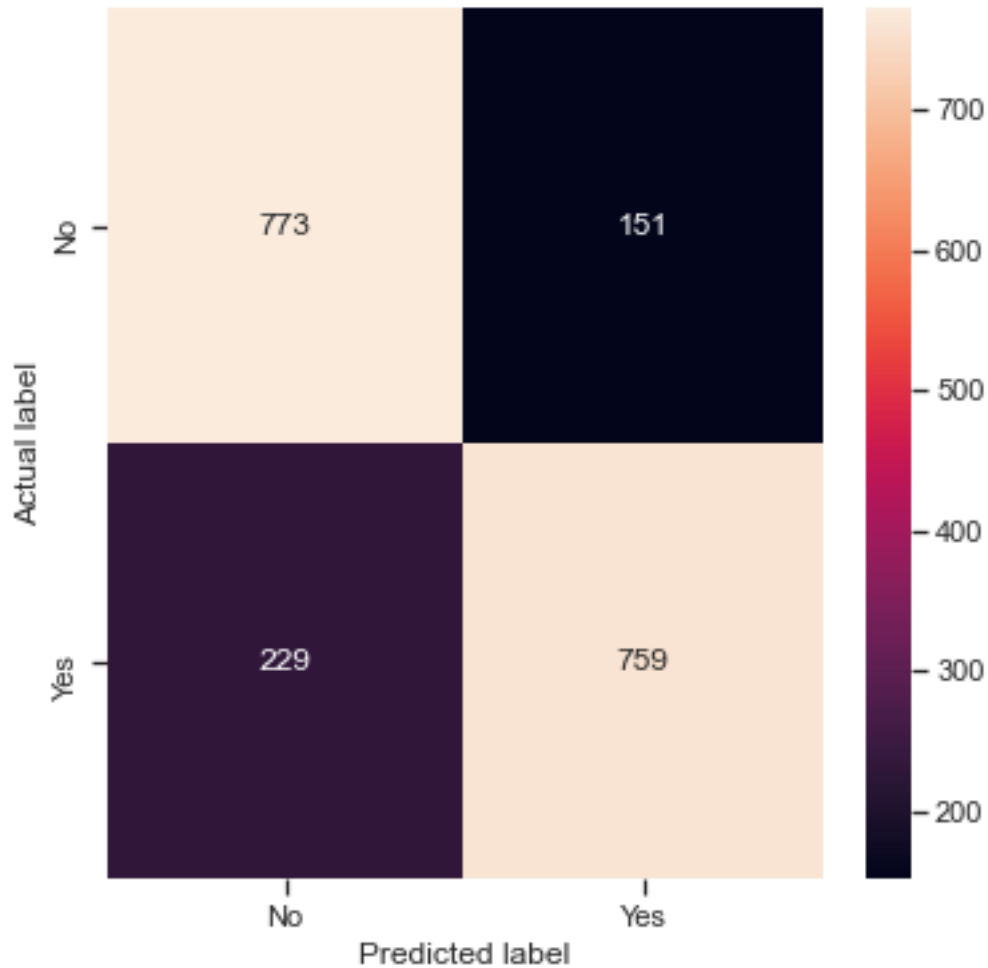
Train f1_score [Yes]: for data 21 is : 0.8066174108576935
Train f1_score [No]: for data 21 is : 0.8138959734137106

	precision	recall	f1-score	support
No	0.77	0.84	0.80	924
Yes	0.83	0.77	0.80	988
accuracy			0.80	1912
macro avg	0.80	0.80	0.80	1912
weighted avg	0.80	0.80	0.80	1912
```
```

```
Cross validation result for data 21 is :
0:      learn: 0.6372850      total: 49.1ms    remaining: 9.77s
1:      learn: 0.6028661      total: 94ms      remaining: 9.3s
2:      learn: 0.5675498      total: 144ms     remaining: 9.47s
3:      learn: 0.5465776      total: 203ms     remaining: 9.94s
4:      learn: 0.5313832      total: 246ms     remaining: 9.6s
5:      learn: 0.5132109      total: 292ms     remaining: 9.44s
6:      learn: 0.5016946      total: 338ms     remaining: 9.31s
7:      learn: 0.4940921      total: 386ms     remaining: 9.26s
8:      learn: 0.4871399      total: 446ms     remaining: 9.46s
9:      learn: 0.4825138      total: 496ms     remaining: 9.41s
10:     learn: 0.4776284      total: 544ms     remaining: 9.34s
11:     learn: 0.4742271      total: 595ms     remaining: 9.33s
12:     learn: 0.4704802      total: 642ms     remaining: 9.23s
13:     learn: 0.4674713      total: 697ms     remaining: 9.26s
14:     learn: 0.4645347      total: 746ms     remaining: 9.2s
15:     learn: 0.4622758      total: 798ms     remaining: 9.17s
```

```
16:     learn: 0.4610264     total: 861ms     remaining: 9.27s
17:     learn: 0.4598269     total: 931ms     remaining: 9.41s
18:     learn: 0.4589011     total: 958ms     remaining: 9.12s
19:     learn: 0.4573711     total: 1.01s     remaining: 9.12s
20:     learn: 0.4558848     total: 1.06s     remaining: 9.02s
21:     learn: 0.4545481     total: 1.11s     remaining: 8.99s
22:     learn: 0.4531289     total: 1.18s     remaining: 9.1s
23:     learn: 0.4521094     total: 1.23s     remaining: 9.05s
24:     learn: 0.4509581     total: 1.28s     remaining: 8.95s
25:     learn: 0.4505180     total: 1.32s     remaining: 8.84s
26:     learn: 0.4492996     total: 1.37s     remaining: 8.76s
27:     learn: 0.4477601     total: 1.42s     remaining: 8.74s
28:     learn: 0.4471445     total: 1.49s     remaining: 8.78s
29:     learn: 0.4468555     total: 1.55s     remaining: 8.78s
30:     learn: 0.4462049     total: 1.61s     remaining: 8.77s
31:     learn: 0.4458079     total: 1.65s     remaining: 8.68s
32:     learn: 0.4454928     total: 1.71s     remaining: 8.63s
33:     learn: 0.4445147     total: 1.76s     remaining: 8.61s
34:     learn: 0.4438914     total: 1.81s     remaining: 8.52s
35:     learn: 0.4431209     total: 1.88s     remaining: 8.58s
36:     learn: 0.4420959     total: 1.93s     remaining: 8.49s
37:     learn: 0.4418132     total: 1.99s     remaining: 8.46s
38:     learn: 0.4415583     total: 2.05s     remaining: 8.48s
39:     learn: 0.4411909     total: 2.12s     remaining: 8.47s
40:     learn: 0.4409734     total: 2.17s     remaining: 8.43s
41:     learn: 0.4405143     total: 2.24s     remaining: 8.44s
42:     learn: 0.4402049     total: 2.29s     remaining: 8.35s
43:     learn: 0.4396399     total: 2.36s     remaining: 8.38s
44:     learn: 0.4392861     total: 2.44s     remaining: 8.42s
45:     learn: 0.4391177     total: 2.49s     remaining: 8.33s
46:     learn: 0.4386025     total: 2.54s     remaining: 8.28s
47:     learn: 0.4381917     total: 2.62s     remaining: 8.28s
48:     learn: 0.4380263     total: 2.67s     remaining: 8.24s
49:     learn: 0.4376118     total: 2.73s     remaining: 8.19s
50:     learn: 0.4375477     total: 2.78s     remaining: 8.11s
51:     learn: 0.4372113     total: 2.86s     remaining: 8.14s
52:     learn: 0.4369823     total: 2.9s      remaining: 8.05s
53:     learn: 0.4365727     total: 2.96s     remaining: 8s
54:     learn: 0.4364820     total: 3.01s     remaining: 7.93s
55:     learn: 0.4361178     total: 3.09s     remaining: 7.94s
56:     learn: 0.4355543     total: 3.15s     remaining: 7.89s
57:     learn: 0.4353625     total: 3.21s     remaining: 7.86s
58:     learn: 0.4349998     total: 3.25s     remaining: 7.78s
59:     learn: 0.4346682     total: 3.32s     remaining: 7.75s
60:     learn: 0.4346677     total: 3.36s     remaining: 7.65s
61:     learn: 0.4344775     total: 3.41s     remaining: 7.58s
62:     learn: 0.4341245     total: 3.45s     remaining: 7.51s
63:     learn: 0.4338788     total: 3.5s      remaining: 7.43s
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64:     learn: 0.4337276     total: 3.54s     remaining: 7.35s
65:     learn: 0.4334912     total: 3.6s      remaining: 7.32s
66:     learn: 0.4328482     total: 3.67s     remaining: 7.29s
67:     learn: 0.4324919     total: 3.74s     remaining: 7.26s
68:     learn: 0.4324383     total: 3.79s     remaining: 7.19s
69:     learn: 0.4323368     total: 3.85s     remaining: 7.14s
70:     learn: 0.4321258     total: 3.91s     remaining: 7.1s
71:     learn: 0.4319325     total: 3.95s     remaining: 7.02s
72:     learn: 0.4317657     total: 4s        remaining: 6.96s
73:     learn: 0.4313044     total: 4.09s     remaining: 6.97s
74:     learn: 0.4310754     total: 4.17s     remaining: 6.95s
75:     learn: 0.4306160     total: 4.23s     remaining: 6.91s
76:     learn: 0.4303252     total: 4.29s     remaining: 6.86s
77:     learn: 0.4300117     total: 4.36s     remaining: 6.82s
78:     learn: 0.4299506     total: 4.4s      remaining: 6.74s
79:     learn: 0.4296299     total: 4.46s     remaining: 6.69s
80:     learn: 0.4294696     total: 4.52s     remaining: 6.64s
81:     learn: 0.4292570     total: 4.57s     remaining: 6.58s
82:     learn: 0.4288401     total: 4.63s     remaining: 6.52s
83:     learn: 0.4286764     total: 4.7s      remaining: 6.48s
84:     learn: 0.4285150     total: 4.75s     remaining: 6.42s
85:     learn: 0.4281805     total: 4.79s     remaining: 6.36s
86:     learn: 0.4277605     total: 4.86s     remaining: 6.31s
87:     learn: 0.4275124     total: 4.92s     remaining: 6.26s
88:     learn: 0.4271382     total: 4.97s     remaining: 6.2s
89:     learn: 0.4265610     total: 5.03s     remaining: 6.14s
90:     learn: 0.4263425     total: 5.07s     remaining: 6.07s
91:     learn: 0.4261948     total: 5.13s     remaining: 6.03s
92:     learn: 0.4258581     total: 5.19s     remaining: 5.97s
93:     learn: 0.4257535     total: 5.24s     remaining: 5.91s
94:     learn: 0.4255402     total: 5.29s     remaining: 5.84s
95:     learn: 0.4254448     total: 5.35s     remaining: 5.8s
96:     learn: 0.4253379     total: 5.4s      remaining: 5.74s
97:     learn: 0.4250349     total: 5.45s     remaining: 5.68s
98:     learn: 0.4245081     total: 5.54s     remaining: 5.65s
99:     learn: 0.4243079     total: 5.59s     remaining: 5.59s
100:    learn: 0.4239460     total: 5.67s     remaining: 5.56s
101:    learn: 0.4237508     total: 5.72s     remaining: 5.5s
102:    learn: 0.4237283     total: 5.78s     remaining: 5.44s
103:    learn: 0.4234081     total: 5.83s     remaining: 5.38s
104:    learn: 0.4234081     total: 5.88s     remaining: 5.32s
105:    learn: 0.4230335     total: 5.93s     remaining: 5.26s
106:    learn: 0.4229173     total: 5.98s     remaining: 5.2s
107:    learn: 0.4229037     total: 6.02s     remaining: 5.13s
108:    learn: 0.4223693     total: 6.08s     remaining: 5.08s
109:    learn: 0.4222648     total: 6.13s     remaining: 5.02s
110:    learn: 0.4221236     total: 6.19s     remaining: 4.96s
111:    learn: 0.4217027     total: 6.25s     remaining: 4.91s
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112:    learn: 0.4214745    total: 6.3s     remaining: 4.85s
113:    learn: 0.4211897    total: 6.36s    remaining: 4.8s
114:    learn: 0.4211800    total: 6.42s    remaining: 4.75s
115:    learn: 0.4211315    total: 6.47s    remaining: 4.69s
116:    learn: 0.4204514    total: 6.55s    remaining: 4.64s
117:    learn: 0.4202210    total: 6.6s     remaining: 4.59s
118:    learn: 0.4200944    total: 6.66s    remaining: 4.53s
119:    learn: 0.4194695    total: 6.71s    remaining: 4.47s
120:    learn: 0.4194695    total: 6.76s    remaining: 4.41s
121:    learn: 0.4193493    total: 6.81s    remaining: 4.36s
122:    learn: 0.4190646    total: 6.86s    remaining: 4.3s
123:    learn: 0.4186997    total: 6.93s    remaining: 4.25s
124:    learn: 0.4186115    total: 6.98s    remaining: 4.19s
125:    learn: 0.4181676    total: 7.05s    remaining: 4.14s
126:    learn: 0.4180058    total: 7.1s     remaining: 4.08s
127:    learn: 0.4179143    total: 7.15s    remaining: 4.02s
128:    learn: 0.4175305    total: 7.22s    remaining: 3.97s
129:    learn: 0.4174889    total: 7.27s    remaining: 3.91s
130:    learn: 0.4173473    total: 7.32s    remaining: 3.86s
131:    learn: 0.4173340    total: 7.36s    remaining: 3.79s
132:    learn: 0.4172532    total: 7.44s    remaining: 3.75s
133:    learn: 0.4170819    total: 7.51s    remaining: 3.7s
134:    learn: 0.4169266    total: 7.56s    remaining: 3.64s
135:    learn: 0.4168338    total: 7.61s    remaining: 3.58s
136:    learn: 0.4167149    total: 7.66s    remaining: 3.52s
137:    learn: 0.4164061    total: 7.71s    remaining: 3.46s
138:    learn: 0.4159166    total: 7.76s    remaining: 3.4s
139:    learn: 0.4159091    total: 7.8s     remaining: 3.34s
140:    learn: 0.4156675    total: 7.86s    remaining: 3.29s
141:    learn: 0.4155631    total: 7.9s     remaining: 3.23s
142:    learn: 0.4154397    total: 7.97s    remaining: 3.18s
143:    learn: 0.4152291    total: 8.02s    remaining: 3.12s
144:    learn: 0.4147767    total: 8.07s    remaining: 3.06s
145:    learn: 0.4145393    total: 8.13s    remaining: 3.01s
146:    learn: 0.4141388    total: 8.21s    remaining: 2.96s
147:    learn: 0.4139871    total: 8.26s    remaining: 2.9s
148:    learn: 0.4139240    total: 8.34s    remaining: 2.85s
149:    learn: 0.4137613    total: 8.41s    remaining: 2.8s
150:    learn: 0.4135771    total: 8.46s    remaining: 2.75s
151:    learn: 0.4130668    total: 8.51s    remaining: 2.69s
152:    learn: 0.4125489    total: 8.56s    remaining: 2.63s
153:    learn: 0.4124635    total: 8.62s    remaining: 2.58s
154:    learn: 0.4124635    total: 8.69s    remaining: 2.52s
155:    learn: 0.4122954    total: 8.75s    remaining: 2.47s
156:    learn: 0.4121274    total: 8.8s     remaining: 2.41s
157:    learn: 0.4119534    total: 8.85s    remaining: 2.35s
158:    learn: 0.4117603    total: 8.91s    remaining: 2.3s
159:    learn: 0.4114998    total: 8.96s    remaining: 2.24s
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160:    learn: 0.4114004    total: 9.03s    remaining: 2.19s
161:    learn: 0.4111946    total: 9.08s    remaining: 2.13s
162:    learn: 0.4110962    total: 9.28s    remaining: 2.11s
163:    learn: 0.4109903    total: 9.36s    remaining: 2.05s
164:    learn: 0.4107463    total: 9.5s     remaining: 2.02s
165:    learn: 0.4106270    total: 9.6s     remaining: 1.97s
166:    learn: 0.4103833    total: 9.67s    remaining: 1.91s
167:    learn: 0.4102480    total: 9.74s    remaining: 1.85s
168:    learn: 0.4097496    total: 9.81s    remaining: 1.8s
169:    learn: 0.4095233    total: 9.87s    remaining: 1.74s
170:    learn: 0.4090836    total: 9.95s    remaining: 1.69s
171:    learn: 0.4088046    total: 10s      remaining: 1.63s
172:    learn: 0.4085971    total: 10.2s    remaining: 1.58s
173:    learn: 0.4085414    total: 10.3s    remaining: 1.54s
174:    learn: 0.4083861    total: 10.3s    remaining: 1.48s
175:    learn: 0.4082478    total: 10.4s    remaining: 1.42s
176:    learn: 0.4079942    total: 10.4s    remaining: 1.36s
177:    learn: 0.4079019    total: 10.5s    remaining: 1.29s
178:    learn: 0.4078395    total: 10.5s    remaining: 1.24s
179:    learn: 0.4077114    total: 10.6s    remaining: 1.18s
180:    learn: 0.4075521    total: 10.6s    remaining: 1.12s
181:    learn: 0.4073105    total: 10.7s    remaining: 1.06s
182:    learn: 0.4071669    total: 10.7s    remaining: 998ms
183:    learn: 0.4070381    total: 10.8s    remaining: 938ms
184:    learn: 0.4070326    total: 10.8s    remaining: 879ms
185:    learn: 0.4069517    total: 11s      remaining: 825ms
186:    learn: 0.4067026    total: 11.1s    remaining: 769ms
187:    learn: 0.4065682    total: 11.1s    remaining: 710ms
188:    learn: 0.4064890    total: 11.2s    remaining: 651ms
189:    learn: 0.4064460    total: 11.2s    remaining: 591ms
190:    learn: 0.4063071    total: 11.3s    remaining: 532ms
191:    learn: 0.4061401    total: 11.3s    remaining: 473ms
192:    learn: 0.4060811    total: 11.4s    remaining: 414ms
193:    learn: 0.4059936    total: 11.5s    remaining: 355ms
194:    learn: 0.4057204    total: 11.5s    remaining: 296ms
195:    learn: 0.4055831    total: 11.6s    remaining: 236ms
196:    learn: 0.4052725    total: 11.6s    remaining: 177ms
197:    learn: 0.4050159    total: 11.7s    remaining: 118ms
198:    learn: 0.4047808    total: 11.7s    remaining: 59ms
199:    learn: 0.4045987    total: 11.8s    remaining: 0us
0:      learn: 0.6332775    total: 52.9ms   remaining: 10.5s
1:      learn: 0.5941073    total: 102ms    remaining: 10.1s
2:      learn: 0.5701533    total: 157ms    remaining: 10.3s
3:      learn: 0.5498099    total: 243ms    remaining: 11.9s
4:      learn: 0.5328229    total: 296ms    remaining: 11.5s
5:      learn: 0.5146379    total: 357ms    remaining: 11.5s
6:      learn: 0.5032860    total: 410ms    remaining: 11.3s
7:      learn: 0.4945967    total: 459ms    remaining: 11s
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8:       learn: 0.4877889      total: 510ms      remaining: 10.8s
9:       learn: 0.4828934      total: 538ms      remaining: 10.2s
10:      learn: 0.4770257      total: 600ms      remaining: 10.3s
11:      learn: 0.4721432      total: 654ms      remaining: 10.3s
12:      learn: 0.4686522      total: 703ms      remaining: 10.1s
13:      learn: 0.4659792      total: 745ms      remaining: 9.9s
14:      learn: 0.4637416      total: 813ms      remaining: 10s
15:      learn: 0.4618807      total: 865ms      remaining: 9.94s
16:      learn: 0.4595729      total: 921ms      remaining: 9.91s
17:      learn: 0.4581946      total: 970ms      remaining: 9.81s
18:      learn: 0.4564849      total: 1.02s      remaining: 9.76s
19:      learn: 0.4545642      total: 1.08s      remaining: 9.69s
20:      learn: 0.4529774      total: 1.13s      remaining: 9.62s
21:      learn: 0.4516196      total: 1.19s      remaining: 9.59s
22:      learn: 0.4507835      total: 1.24s      remaining: 9.53s
23:      learn: 0.4496691      total: 1.29s      remaining: 9.45s
24:      learn: 0.4488381      total: 1.35s      remaining: 9.43s
25:      learn: 0.4482570      total: 1.4s       remaining: 9.36s
26:      learn: 0.4478230      total: 1.45s      remaining: 9.31s
27:      learn: 0.4472076      total: 1.54s      remaining: 9.46s
28:      learn: 0.4466360      total: 1.59s      remaining: 9.4s
29:      learn: 0.4461102      total: 1.67s      remaining: 9.44s
30:      learn: 0.4456471      total: 1.71s      remaining: 9.32s
31:      learn: 0.4450744      total: 1.8s       remaining: 9.44s
32:      learn: 0.4442219      total: 1.86s      remaining: 9.39s
33:      learn: 0.4438123      total: 1.9s       remaining: 9.28s
34:      learn: 0.4430811      total: 1.95s      remaining: 9.2s
35:      learn: 0.4428872      total: 2.01s      remaining: 9.15s
36:      learn: 0.4426603      total: 2.06s      remaining: 9.06s
37:      learn: 0.4422789      total: 2.1s       remaining: 8.96s
38:      learn: 0.4420052      total: 2.15s      remaining: 8.86s
39:      learn: 0.4417966      total: 2.23s      remaining: 8.9s
40:      learn: 0.4417000      total: 2.27s      remaining: 8.81s
41:      learn: 0.4410021      total: 2.33s      remaining: 8.77s
42:      learn: 0.4402946      total: 2.38s      remaining: 8.68s
43:      learn: 0.4399097      total: 2.42s      remaining: 8.57s
44:      learn: 0.4391548      total: 2.47s      remaining: 8.51s
45:      learn: 0.4389732      total: 2.52s      remaining: 8.43s
46:      learn: 0.4385376      total: 2.57s      remaining: 8.36s
47:      learn: 0.4382149      total: 2.64s      remaining: 8.35s
48:      learn: 0.4377857      total: 2.69s      remaining: 8.29s
49:      learn: 0.4369414      total: 2.75s      remaining: 8.24s
50:      learn: 0.4369362      total: 2.76s      remaining: 8.07s
51:      learn: 0.4359879      total: 2.83s      remaining: 8.04s
52:      learn: 0.4357832      total: 2.87s      remaining: 7.96s
53:      learn: 0.4354043      total: 2.92s      remaining: 7.88s
54:      learn: 0.4352487      total: 2.98s      remaining: 7.85s
55:      learn: 0.4349086      total: 3.04s      remaining: 7.81s
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56:      learn: 0.4347958      total: 3.11s      remaining: 7.8s
57:      learn: 0.4347229      total: 3.16s      remaining: 7.75s
58:      learn: 0.4341886      total: 3.22s      remaining: 7.71s
59:      learn: 0.4338819      total: 3.27s      remaining: 7.64s
60:      learn: 0.4336252      total: 3.33s      remaining: 7.59s
61:      learn: 0.4335393      total: 3.38s      remaining: 7.53s
62:      learn: 0.4333438      total: 3.42s      remaining: 7.45s
63:      learn: 0.4326077      total: 3.47s      remaining: 7.38s
64:      learn: 0.4323636      total: 3.52s      remaining: 7.31s
65:      learn: 0.4318264      total: 3.59s      remaining: 7.29s
66:      learn: 0.4313000      total: 3.65s      remaining: 7.25s
67:      learn: 0.4309849      total: 3.71s      remaining: 7.2s
68:      learn: 0.4309438      total: 3.75s      remaining: 7.12s
69:      learn: 0.4309412      total: 3.76s      remaining: 6.99s
70:      learn: 0.4308188      total: 3.82s      remaining: 6.95s
71:      learn: 0.4303104      total: 3.9s       remaining: 6.94s
72:      learn: 0.4300805      total: 3.94s      remaining: 6.86s
73:      learn: 0.4299787      total: 4s         remaining: 6.81s
74:      learn: 0.4298895      total: 4.04s      remaining: 6.73s
75:      learn: 0.4294352      total: 4.1s       remaining: 6.69s
76:      learn: 0.4286374      total: 4.16s      remaining: 6.64s
77:      learn: 0.4282721      total: 4.22s      remaining: 6.6s
78:      learn: 0.4278728      total: 4.28s      remaining: 6.55s
79:      learn: 0.4275588      total: 4.35s      remaining: 6.52s
80:      learn: 0.4273346      total: 4.4s       remaining: 6.46s
81:      learn: 0.4265502      total: 4.45s      remaining: 6.4s
82:      learn: 0.4263951      total: 4.51s      remaining: 6.35s
83:      learn: 0.4262966      total: 4.56s      remaining: 6.29s
84:      learn: 0.4260126      total: 4.61s      remaining: 6.23s
85:      learn: 0.4259532      total: 4.65s      remaining: 6.17s
86:      learn: 0.4258959      total: 4.72s      remaining: 6.13s
87:      learn: 0.4257964      total: 4.77s      remaining: 6.07s
88:      learn: 0.4256657      total: 4.84s      remaining: 6.04s
89:      learn: 0.4253768      total: 4.9s       remaining: 5.99s
90:      learn: 0.4252621      total: 4.97s      remaining: 5.95s
91:      learn: 0.4251625      total: 5.04s      remaining: 5.91s
92:      learn: 0.4250244      total: 5.09s      remaining: 5.85s
93:      learn: 0.4247948      total: 5.13s      remaining: 5.78s
94:      learn: 0.4246147      total: 5.19s      remaining: 5.73s
95:      learn: 0.4241641      total: 5.23s      remaining: 5.67s
96:      learn: 0.4240046      total: 5.29s      remaining: 5.62s
97:      learn: 0.4239001      total: 5.34s      remaining: 5.56s
98:      learn: 0.4234060      total: 5.4s       remaining: 5.51s
99:      learn: 0.4231951      total: 5.45s      remaining: 5.45s
100:     learn: 0.4229034      total: 5.49s      remaining: 5.38s
101:     learn: 0.4226327      total: 5.54s      remaining: 5.32s
102:     learn: 0.4224720      total: 5.59s      remaining: 5.26s
103:     learn: 0.4221986      total: 5.64s      remaining: 5.21s
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104:    learn: 0.4221262    total: 5.68s    remaining: 5.14s
105:    learn: 0.4218817    total: 5.73s    remaining: 5.08s
106:    learn: 0.4216742    total: 5.77s    remaining: 5.02s
107:    learn: 0.4215685    total: 5.82s    remaining: 4.95s
108:    learn: 0.4213898    total: 5.85s    remaining: 4.89s
109:    learn: 0.4210242    total: 5.92s    remaining: 4.84s
110:    learn: 0.4209084    total: 5.97s    remaining: 4.78s
111:    learn: 0.4208094    total: 6.02s    remaining: 4.73s
112:    learn: 0.4203565    total: 6.08s    remaining: 4.68s
113:    learn: 0.4202579    total: 6.13s    remaining: 4.63s
114:    learn: 0.4202412    total: 6.17s    remaining: 4.56s
115:    learn: 0.4201536    total: 6.22s    remaining: 4.5s
116:    learn: 0.4197412    total: 6.27s    remaining: 4.45s
117:    learn: 0.4191793    total: 6.32s    remaining: 4.39s
118:    learn: 0.4191789    total: 6.36s    remaining: 4.33s
119:    learn: 0.4190208    total: 6.42s    remaining: 4.28s
120:    learn: 0.4188061    total: 6.47s    remaining: 4.22s
121:    learn: 0.4187076    total: 6.54s    remaining: 4.18s
122:    learn: 0.4183623    total: 6.59s    remaining: 4.13s
123:    learn: 0.4182450    total: 6.66s    remaining: 4.08s
124:    learn: 0.4174871    total: 6.72s    remaining: 4.03s
125:    learn: 0.4173315    total: 6.76s    remaining: 3.97s
126:    learn: 0.4168856    total: 6.81s    remaining: 3.91s
127:    learn: 0.4168607    total: 6.87s    remaining: 3.86s
128:    learn: 0.4163886    total: 6.92s    remaining: 3.81s
129:    learn: 0.4162592    total: 6.97s    remaining: 3.75s
130:    learn: 0.4160873    total: 7.01s    remaining: 3.69s
131:    learn: 0.4160251    total: 7.06s    remaining: 3.64s
132:    learn: 0.4156575    total: 7.11s    remaining: 3.58s
133:    learn: 0.4155624    total: 7.16s    remaining: 3.53s
134:    learn: 0.4153558    total: 7.21s    remaining: 3.47s
135:    learn: 0.4151836    total: 7.26s    remaining: 3.42s
136:    learn: 0.4146036    total: 7.31s    remaining: 3.36s
137:    learn: 0.4144913    total: 7.36s    remaining: 3.31s
138:    learn: 0.4144763    total: 7.43s    remaining: 3.26s
139:    learn: 0.4142904    total: 7.49s    remaining: 3.21s
140:    learn: 0.4142356    total: 7.53s    remaining: 3.15s
141:    learn: 0.4139840    total: 7.58s    remaining: 3.1s
142:    learn: 0.4137536    total: 7.64s    remaining: 3.04s
143:    learn: 0.4135367    total: 7.69s    remaining: 2.99s
144:    learn: 0.4132027    total: 7.74s    remaining: 2.93s
145:    learn: 0.4130710    total: 7.78s    remaining: 2.88s
146:    learn: 0.4128643    total: 7.83s    remaining: 2.82s
147:    learn: 0.4126229    total: 7.88s    remaining: 2.77s
148:    learn: 0.4125508    total: 7.92s    remaining: 2.71s
149:    learn: 0.4122760    total: 7.97s    remaining: 2.66s
150:    learn: 0.4122452    total: 8.03s    remaining: 2.61s
151:    learn: 0.4119247    total: 8.07s    remaining: 2.55s
```

```
152:    learn: 0.4117595    total: 8.13s    remaining: 2.5s
153:    learn: 0.4116391    total: 8.19s    remaining: 2.44s
154:    learn: 0.4115357    total: 8.24s    remaining: 2.39s
155:    learn: 0.4114663    total: 8.28s    remaining: 2.33s
156:    learn: 0.4113017    total: 8.33s    remaining: 2.28s
157:    learn: 0.4112962    total: 8.37s    remaining: 2.22s
158:    learn: 0.4112230    total: 8.41s    remaining: 2.17s
159:    learn: 0.4111646    total: 8.5s     remaining: 2.13s
160:    learn: 0.4110986    total: 8.56s    remaining: 2.07s
161:    learn: 0.4107752    total: 8.61s    remaining: 2.02s
162:    learn: 0.4103971    total: 8.65s    remaining: 1.96s
163:    learn: 0.4101976    total: 8.72s    remaining: 1.91s
164:    learn: 0.4101765    total: 8.79s    remaining: 1.86s
165:    learn: 0.4100021    total: 8.84s    remaining: 1.81s
166:    learn: 0.4097987    total: 8.88s    remaining: 1.75s
167:    learn: 0.4096726    total: 8.94s    remaining: 1.7s
168:    learn: 0.4095961    total: 9.01s    remaining: 1.65s
169:    learn: 0.4089712    total: 9.06s    remaining: 1.6s
170:    learn: 0.4088919    total: 9.11s    remaining: 1.54s
171:    learn: 0.4085555    total: 9.15s    remaining: 1.49s
172:    learn: 0.4083380    total: 9.22s    remaining: 1.44s
173:    learn: 0.4082148    total: 9.28s    remaining: 1.39s
174:    learn: 0.4080800    total: 9.32s    remaining: 1.33s
175:    learn: 0.4078752    total: 9.37s    remaining: 1.28s
176:    learn: 0.4076555    total: 9.43s    remaining: 1.23s
177:    learn: 0.4076310    total: 9.5s     remaining: 1.17s
178:    learn: 0.4074916    total: 9.56s    remaining: 1.12s
179:    learn: 0.4071844    total: 9.61s    remaining: 1.07s
180:    learn: 0.4069844    total: 9.65s    remaining: 1.01s
181:    learn: 0.4069107    total: 9.73s    remaining: 962ms
182:    learn: 0.4067314    total: 9.78s    remaining: 909ms
183:    learn: 0.4065996    total: 9.83s    remaining: 855ms
184:    learn: 0.4065348    total: 9.88s    remaining: 801ms
185:    learn: 0.4064316    total: 9.96s    remaining: 750ms
186:    learn: 0.4062717    total: 10s      remaining: 696ms
187:    learn: 0.4061165    total: 10.1s    remaining: 643ms
188:    learn: 0.4060121    total: 10.1s    remaining: 589ms
189:    learn: 0.4058387    total: 10.2s    remaining: 535ms
190:    learn: 0.4056034    total: 10.2s    remaining: 481ms
191:    learn: 0.4054916    total: 10.3s    remaining: 428ms
192:    learn: 0.4053116    total: 10.3s    remaining: 375ms
193:    learn: 0.4051033    total: 10.4s    remaining: 322ms
194:    learn: 0.4049474    total: 10.5s    remaining: 268ms
195:    learn: 0.4047260    total: 10.5s    remaining: 215ms
196:    learn: 0.4043647    total: 10.6s    remaining: 161ms
197:    learn: 0.4042274    total: 10.6s    remaining: 107ms
198:    learn: 0.4040217    total: 10.8s    remaining: 54.1ms
199:    learn: 0.4038482    total: 10.9s    remaining: 0us
```

```
0:      learn: 0.6403883      total: 54.9ms    remaining: 10.9s
1:      learn: 0.6013069      total: 119ms     remaining: 11.8s
2:      learn: 0.5738910      total: 171ms     remaining: 11.2s
3:      learn: 0.5501203      total: 229ms     remaining: 11.2s
4:      learn: 0.5286289      total: 274ms     remaining: 10.7s
5:      learn: 0.5161799      total: 322ms     remaining: 10.4s
6:      learn: 0.5050735      total: 366ms     remaining: 10.1s
7:      learn: 0.4953692      total: 434ms     remaining: 10.4s
8:      learn: 0.4865562      total: 487ms     remaining: 10.3s
9:      learn: 0.4824306      total: 548ms     remaining: 10.4s
10:     learn: 0.4776147      total: 599ms     remaining: 10.3s
11:     learn: 0.4734211      total: 649ms     remaining: 10.2s
12:     learn: 0.4688876      total: 697ms     remaining: 10s
13:     learn: 0.4655216      total: 752ms     remaining: 9.99s
14:     learn: 0.4624413      total: 826ms     remaining: 10.2s
15:     learn: 0.4601199      total: 885ms     remaining: 10.2s
16:     learn: 0.4578311      total: 937ms     remaining: 10.1s
17:     learn: 0.4559659      total: 999ms     remaining: 10.1s
18:     learn: 0.4544230      total: 1.04s     remaining: 9.94s
19:     learn: 0.4533158      total: 1.11s     remaining: 10s
20:     learn: 0.4522461      total: 1.18s     remaining: 10.1s
21:     learn: 0.4500121      total: 1.25s     remaining: 10.1s
22:     learn: 0.4491180      total: 1.3s      remaining: 10s
23:     learn: 0.4481283      total: 1.36s     remaining: 9.97s
24:     learn: 0.4474222      total: 1.41s     remaining: 9.84s
25:     learn: 0.4461481      total: 1.45s     remaining: 9.7s
26:     learn: 0.4450795      total: 1.5s      remaining: 9.58s
27:     learn: 0.4445697      total: 1.54s     remaining: 9.48s
28:     learn: 0.4438424      total: 1.59s     remaining: 9.38s
29:     learn: 0.4433804      total: 1.64s     remaining: 9.28s
30:     learn: 0.4428236      total: 1.7s      remaining: 9.29s
31:     learn: 0.4423697      total: 1.75s     remaining: 9.21s
32:     learn: 0.4415315      total: 1.8s      remaining: 9.12s
33:     learn: 0.4412315      total: 1.87s     remaining: 9.11s
34:     learn: 0.4404476      total: 1.93s     remaining: 9.08s
35:     learn: 0.4400463      total: 1.98s     remaining: 9.02s
36:     learn: 0.4398178      total: 2.05s     remaining: 9.03s
37:     learn: 0.4393393      total: 2.09s     remaining: 8.92s
38:     learn: 0.4388863      total: 2.16s     remaining: 8.91s
39:     learn: 0.4383803      total: 2.2s      remaining: 8.79s
40:     learn: 0.4379820      total: 2.24s     remaining: 8.7s
41:     learn: 0.4376884      total: 2.3s      remaining: 8.64s
42:     learn: 0.4374515      total: 2.34s     remaining: 8.55s
43:     learn: 0.4371837      total: 2.4s      remaining: 8.5s
44:     learn: 0.4369088      total: 2.45s     remaining: 8.45s
45:     learn: 0.4367498      total: 2.5s      remaining: 8.36s
46:     learn: 0.4363174      total: 2.56s     remaining: 8.34s
47:     learn: 0.4358583      total: 2.61s     remaining: 8.28s
```

```
48:     learn: 0.4351997     total: 2.69s     remaining: 8.29s
49:     learn: 0.4348598     total: 2.74s     remaining: 8.23s
50:     learn: 0.4346007     total: 2.8s      remaining: 8.19s
51:     learn: 0.4344221     total: 2.85s     remaining: 8.11s
52:     learn: 0.4337169     total: 2.91s     remaining: 8.08s
53:     learn: 0.4337169     total: 2.93s     remaining: 7.91s
54:     learn: 0.4333667     total: 2.98s     remaining: 7.85s
55:     learn: 0.4332394     total: 3.04s     remaining: 7.8s
56:     learn: 0.4328353     total: 3.09s     remaining: 7.74s
57:     learn: 0.4327439     total: 3.14s     remaining: 7.68s
58:     learn: 0.4321184     total: 3.18s     remaining: 7.61s
59:     learn: 0.4318887     total: 3.23s     remaining: 7.53s
60:     learn: 0.4317627     total: 3.29s     remaining: 7.49s
61:     learn: 0.4316667     total: 3.34s     remaining: 7.43s
62:     learn: 0.4310611     total: 3.38s     remaining: 7.36s
63:     learn: 0.4307407     total: 3.43s     remaining: 7.3s
64:     learn: 0.4306827     total: 3.48s     remaining: 7.22s
65:     learn: 0.4305091     total: 3.52s     remaining: 7.14s
66:     learn: 0.4303875     total: 3.58s     remaining: 7.1s
67:     learn: 0.4301291     total: 3.65s     remaining: 7.09s
68:     learn: 0.4299227     total: 3.71s     remaining: 7.05s
69:     learn: 0.4296757     total: 3.77s     remaining: 7s
70:     learn: 0.4295712     total: 3.82s     remaining: 6.95s
71:     learn: 0.4292045     total: 3.87s     remaining: 6.87s
72:     learn: 0.4288985     total: 3.92s     remaining: 6.81s
73:     learn: 0.4286506     total: 3.98s     remaining: 6.78s
74:     learn: 0.4285036     total: 4.08s     remaining: 6.8s
75:     learn: 0.4284033     total: 4.13s     remaining: 6.74s
76:     learn: 0.4281861     total: 4.18s     remaining: 6.67s
77:     learn: 0.4279686     total: 4.22s     remaining: 6.61s
78:     learn: 0.4276195     total: 4.27s     remaining: 6.54s
79:     learn: 0.4273895     total: 4.33s     remaining: 6.49s
80:     learn: 0.4271430     total: 4.38s     remaining: 6.43s
81:     learn: 0.4269556     total: 4.43s     remaining: 6.37s
82:     learn: 0.4262696     total: 4.5s      remaining: 6.34s
83:     learn: 0.4261256     total: 4.54s     remaining: 6.28s
84:     learn: 0.4257429     total: 4.59s     remaining: 6.21s
85:     learn: 0.4252978     total: 4.65s     remaining: 6.16s
86:     learn: 0.4247176     total: 4.73s     remaining: 6.14s
87:     learn: 0.4242939     total: 4.77s     remaining: 6.08s
88:     learn: 0.4239422     total: 4.83s     remaining: 6.02s
89:     learn: 0.4238028     total: 4.88s     remaining: 5.97s
90:     learn: 0.4234700     total: 4.93s     remaining: 5.91s
91:     learn: 0.4233366     total: 4.99s     remaining: 5.85s
92:     learn: 0.4230675     total: 5.05s     remaining: 5.81s
93:     learn: 0.4228489     total: 5.12s     remaining: 5.77s
94:     learn: 0.4226864     total: 5.17s     remaining: 5.71s
95:     learn: 0.4225573     total: 5.22s     remaining: 5.65s
```

```
96:     learn: 0.4223821     total: 5.27s     remaining: 5.6s
97:     learn: 0.4219086     total: 5.33s     remaining: 5.54s
98:     learn: 0.4215501     total: 5.38s     remaining: 5.49s
99:     learn: 0.4204771     total: 5.47s     remaining: 5.47s
100:    learn: 0.4202973     total: 5.53s     remaining: 5.42s
101:    learn: 0.4201454     total: 5.59s     remaining: 5.37s
102:    learn: 0.4198831     total: 5.63s     remaining: 5.3s
103:    learn: 0.4198134     total: 5.68s     remaining: 5.25s
104:    learn: 0.4196793     total: 5.74s     remaining: 5.2s
105:    learn: 0.4195261     total: 5.8s      remaining: 5.14s
106:    learn: 0.4193235     total: 5.85s     remaining: 5.09s
107:    learn: 0.4187072     total: 5.93s     remaining: 5.05s
108:    learn: 0.4180902     total: 5.97s     remaining: 4.98s
109:    learn: 0.4175101     total: 6.03s     remaining: 4.93s
110:    learn: 0.4172825     total: 6.08s     remaining: 4.87s
111:    learn: 0.4171049     total: 6.13s     remaining: 4.81s
112:    learn: 0.4168446     total: 6.18s     remaining: 4.76s
113:    learn: 0.4164493     total: 6.25s     remaining: 4.71s
114:    learn: 0.4162263     total: 6.31s     remaining: 4.67s
115:    learn: 0.4156766     total: 6.37s     remaining: 4.61s
116:    learn: 0.4155199     total: 6.41s     remaining: 4.55s
117:    learn: 0.4150776     total: 6.47s     remaining: 4.5s
118:    learn: 0.4144500     total: 6.52s     remaining: 4.44s
119:    learn: 0.4143048     total: 6.56s     remaining: 4.38s
120:    learn: 0.4139721     total: 6.61s     remaining: 4.31s
121:    learn: 0.4139503     total: 6.68s     remaining: 4.27s
122:    learn: 0.4138469     total: 6.74s     remaining: 4.22s
123:    learn: 0.4136561     total: 6.8s      remaining: 4.17s
124:    learn: 0.4135478     total: 6.86s     remaining: 4.11s
125:    learn: 0.4133506     total: 6.91s     remaining: 4.06s
126:    learn: 0.4130077     total: 6.97s     remaining: 4s
127:    learn: 0.4128371     total: 7.04s     remaining: 3.96s
128:    learn: 0.4125719     total: 7.11s     remaining: 3.91s
129:    learn: 0.4122238     total: 7.16s     remaining: 3.85s
130:    learn: 0.4116271     total: 7.22s     remaining: 3.8s
131:    learn: 0.4115129     total: 7.27s     remaining: 3.74s
132:    learn: 0.4110863     total: 7.33s     remaining: 3.69s
133:    learn: 0.4110062     total: 7.4s      remaining: 3.65s
134:    learn: 0.4110001     total: 7.45s     remaining: 3.59s
135:    learn: 0.4107035     total: 7.5s      remaining: 3.53s
136:    learn: 0.4105649     total: 7.54s     remaining: 3.47s
137:    learn: 0.4105112     total: 7.61s     remaining: 3.42s
138:    learn: 0.4102165     total: 7.66s     remaining: 3.36s
139:    learn: 0.4099908     total: 7.7s      remaining: 3.3s
140:    learn: 0.4097589     total: 7.74s     remaining: 3.24s
141:    learn: 0.4095396     total: 7.8s      remaining: 3.19s
142:    learn: 0.4095199     total: 7.85s     remaining: 3.13s
143:    learn: 0.4094981     total: 7.92s     remaining: 3.08s
```

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144:    learn: 0.4093736    total: 7.96s    remaining: 3.02s
145:    learn: 0.4087859    total: 8.02s    remaining: 2.97s
146:    learn: 0.4085658    total: 8.09s    remaining: 2.92s
147:    learn: 0.4084087    total: 8.13s    remaining: 2.86s
148:    learn: 0.4081254    total: 8.2s     remaining: 2.81s
149:    learn: 0.4080726    total: 8.25s    remaining: 2.75s
150:    learn: 0.4079565    total: 8.3s     remaining: 2.69s
151:    learn: 0.4079079    total: 8.35s    remaining: 2.64s
152:    learn: 0.4076226    total: 8.41s    remaining: 2.58s
153:    learn: 0.4075399    total: 8.46s    remaining: 2.53s
154:    learn: 0.4073240    total: 8.52s    remaining: 2.47s
155:    learn: 0.4072720    total: 8.57s    remaining: 2.42s
156:    learn: 0.4069679    total: 8.63s    remaining: 2.36s
157:    learn: 0.4064243    total: 8.68s    remaining: 2.31s
158:    learn: 0.4063319    total: 8.74s    remaining: 2.25s
159:    learn: 0.4062515    total: 8.81s    remaining: 2.2s
160:    learn: 0.4060446    total: 8.88s    remaining: 2.15s
161:    learn: 0.4060229    total: 8.93s    remaining: 2.09s
162:    learn: 0.4058268    total: 8.97s    remaining: 2.04s
163:    learn: 0.4055231    total: 9.03s    remaining: 1.98s
164:    learn: 0.4054184    total: 9.11s    remaining: 1.93s
165:    learn: 0.4053147    total: 9.16s    remaining: 1.88s
166:    learn: 0.4051715    total: 9.21s    remaining: 1.82s
167:    learn: 0.4049517    total: 9.26s    remaining: 1.76s
168:    learn: 0.4049284    total: 9.31s    remaining: 1.71s
169:    learn: 0.4047900    total: 9.35s    remaining: 1.65s
170:    learn: 0.4046007    total: 9.4s     remaining: 1.59s
171:    learn: 0.4045190    total: 9.45s    remaining: 1.54s
172:    learn: 0.4043610    total: 9.51s    remaining: 1.48s
173:    learn: 0.4042060    total: 9.57s    remaining: 1.43s
174:    learn: 0.4040603    total: 9.62s    remaining: 1.37s
175:    learn: 0.4035607    total: 9.7s     remaining: 1.32s
176:    learn: 0.4033538    total: 9.75s    remaining: 1.27s
177:    learn: 0.4031112    total: 9.79s    remaining: 1.21s
178:    learn: 0.4029488    total: 9.87s    remaining: 1.16s
179:    learn: 0.4028427    total: 9.95s    remaining: 1.1s
180:    learn: 0.4027014    total: 10s      remaining: 1.05s
181:    learn: 0.4025856    total: 10.1s    remaining: 999ms
182:    learn: 0.4024708    total: 10.2s    remaining: 945ms
183:    learn: 0.4023379    total: 10.3s    remaining: 892ms
184:    learn: 0.4021544    total: 10.3s    remaining: 837ms
185:    learn: 0.4020333    total: 10.4s    remaining: 782ms
186:    learn: 0.4018972    total: 10.5s    remaining: 728ms
187:    learn: 0.4018006    total: 10.6s    remaining: 674ms
188:    learn: 0.4017766    total: 10.6s    remaining: 619ms
189:    learn: 0.4015861    total: 10.7s    remaining: 563ms
190:    learn: 0.4014265    total: 10.8s    remaining: 507ms
191:    learn: 0.4011189    total: 10.8s    remaining: 450ms
```

```
192:    learn: 0.4009136         total: 10.9s    remaining: 394ms
193:    learn: 0.4007538         total: 10.9s    remaining: 337ms
194:    learn: 0.4005839         total: 10.9s    remaining: 281ms
195:    learn: 0.4004280         total: 11s      remaining: 225ms
196:    learn: 0.4002136         total: 11.1s    remaining: 169ms
197:    learn: 0.3999675         total: 11.1s    remaining: 112ms
198:    learn: 0.3998686         total: 11.2s    remaining: 56.2ms
199:    learn: 0.3997456         total: 11.2s    remaining: 0us
```
Mean train f1-score of data (CV) 21 is : 0.8130823044575844
Mean test f1-score of data (CV) 21 is : 0.7988064058667518

Shape of data 22 is :
(27303, 10)
Distribution of 22 is :
Yes   14102
No   13201
Name: TIMELY_RESPONSE, dtype: int64

<IPython.core.display.HTML object>

MetricVisualizer(layout=Layout(align_self='stretch', height='500px'))

Train f1_score [Yes]: for data 22 is : 0.8100491182864966
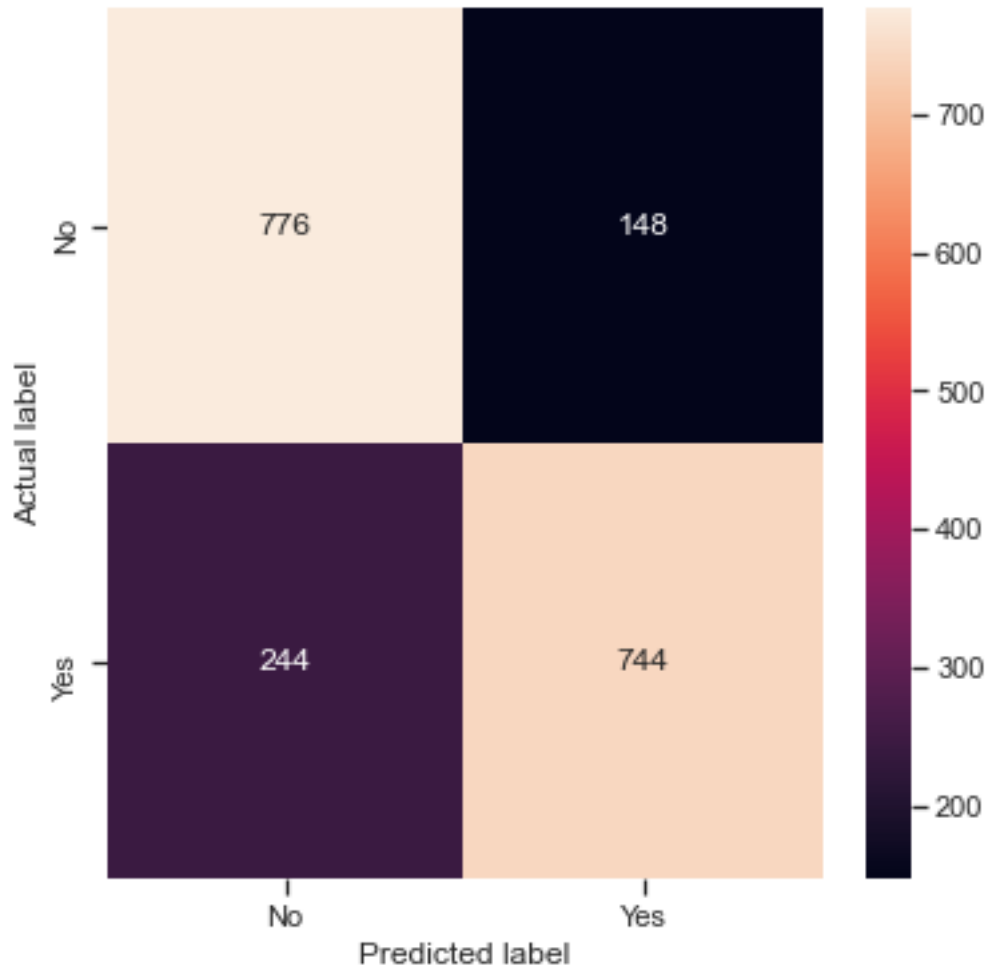Train f1_score [No]: for data 22 is : 0.8181467776749923

	precision	recall	f1-score	support
No	0.76	0.84	0.80	924
Yes	0.83	0.75	0.79	988
accuracy			0.79	1912
macro avg	0.80	0.80	0.79	1912
weighted avg	0.80	0.79	0.79	1912

Cross validation result for data 22 is :

```
0:      learn: 0.6356882      total: 45ms      remaining: 8.96s
1:      learn: 0.5919519      total: 94.3ms    remaining: 9.34s
2:      learn: 0.5626590      total: 134ms     remaining: 8.83s
3:      learn: 0.5484770      total: 156ms     remaining: 7.64s
4:      learn: 0.5280543      total: 211ms     remaining: 8.24s
5:      learn: 0.5123858      total: 261ms     remaining: 8.45s
6:      learn: 0.5017781      total: 306ms     remaining: 8.42s
7:      learn: 0.4908892      total: 388ms     remaining: 9.32s
8:      learn: 0.4833792      total: 445ms     remaining: 9.45s
9:      learn: 0.4772203      total: 536ms     remaining: 10.2s
10:     learn: 0.4729327      total: 582ms     remaining: 10s
11:     learn: 0.4684572      total: 632ms     remaining: 9.91s
12:     learn: 0.4649576      total: 710ms     remaining: 10.2s
13:     learn: 0.4619687      total: 780ms     remaining: 10.4s
14:     learn: 0.4600280      total: 829ms     remaining: 10.2s
15:     learn: 0.4577388      total: 879ms     remaining: 10.1s
```

```
16:     learn: 0.4556227      total: 930ms    remaining: 10s
17:     learn: 0.4540061      total: 973ms    remaining: 9.84s
18:     learn: 0.4524117      total: 1.02s    remaining: 9.76s
19:     learn: 0.4510065      total: 1.07s    remaining: 9.67s
20:     learn: 0.4499300      total: 1.14s    remaining: 9.68s
21:     learn: 0.4486873      total: 1.2s     remaining: 9.71s
22:     learn: 0.4476623      total: 1.26s    remaining: 9.74s
23:     learn: 0.4463610      total: 1.31s    remaining: 9.63s
24:     learn: 0.4450494      total: 1.36s    remaining: 9.53s
25:     learn: 0.4440128      total: 1.43s    remaining: 9.58s
26:     learn: 0.4434208      total: 1.48s    remaining: 9.49s
27:     learn: 0.4428349      total: 1.52s    remaining: 9.34s
28:     learn: 0.4425350      total: 1.56s    remaining: 9.21s
29:     learn: 0.4414037      total: 1.6s     remaining: 9.09s
30:     learn: 0.4407782      total: 1.65s    remaining: 9.01s
31:     learn: 0.4400049      total: 1.71s    remaining: 8.97s
32:     learn: 0.4393745      total: 1.76s    remaining: 8.92s
33:     learn: 0.4389716      total: 1.8s     remaining: 8.81s
34:     learn: 0.4378625      total: 1.86s    remaining: 8.77s
35:     learn: 0.4366750      total: 1.91s    remaining: 8.71s
36:     learn: 0.4364759      total: 1.97s    remaining: 8.67s
37:     learn: 0.4360443      total: 2.03s    remaining: 8.65s
38:     learn: 0.4354941      total: 2.07s    remaining: 8.55s
39:     learn: 0.4352450      total: 2.11s    remaining: 8.45s
40:     learn: 0.4349895      total: 2.17s    remaining: 8.41s
41:     learn: 0.4347109      total: 2.22s    remaining: 8.35s
42:     learn: 0.4343335      total: 2.29s    remaining: 8.36s
43:     learn: 0.4340256      total: 2.34s    remaining: 8.29s
44:     learn: 0.4337770      total: 2.39s    remaining: 8.22s
45:     learn: 0.4333973      total: 2.43s    remaining: 8.14s
46:     learn: 0.4332478      total: 2.49s    remaining: 8.09s
47:     learn: 0.4329477      total: 2.54s    remaining: 8.05s
48:     learn: 0.4326337      total: 2.59s    remaining: 7.97s
49:     learn: 0.4326294      total: 2.6s     remaining: 7.81s
50:     learn: 0.4324964      total: 2.65s    remaining: 7.74s
51:     learn: 0.4321776      total: 2.7s     remaining: 7.7s
52:     learn: 0.4314701      total: 2.77s    remaining: 7.7s
53:     learn: 0.4313118      total: 2.83s    remaining: 7.65s
54:     learn: 0.4305615      total: 2.9s     remaining: 7.64s
55:     learn: 0.4303287      total: 2.95s    remaining: 7.58s
56:     learn: 0.4298966      total: 3s       remaining: 7.53s
57:     learn: 0.4297172      total: 3.07s    remaining: 7.52s
58:     learn: 0.4291934      total: 3.13s    remaining: 7.49s
59:     learn: 0.4287960      total: 3.2s     remaining: 7.46s
60:     learn: 0.4287157      total: 3.25s    remaining: 7.42s
61:     learn: 0.4284753      total: 3.31s    remaining: 7.36s
62:     learn: 0.4282132      total: 3.36s    remaining: 7.3s
63:     learn: 0.4278110      total: 3.41s    remaining: 7.24s
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64:    learn: 0.4275316    total: 3.45s    remaining: 7.17s
65:    learn: 0.4272240    total: 3.52s    remaining: 7.14s
66:    learn: 0.4270972    total: 3.57s    remaining: 7.08s
67:    learn: 0.4269647    total: 3.65s    remaining: 7.08s
68:    learn: 0.4266901    total: 3.71s    remaining: 7.04s
69:    learn: 0.4265730    total: 3.77s    remaining: 7s
70:    learn: 0.4263784    total: 3.83s    remaining: 6.96s
71:    learn: 0.4262082    total: 3.87s    remaining: 6.89s
72:    learn: 0.4260025    total: 3.92s    remaining: 6.82s
73:    learn: 0.4254720    total: 3.97s    remaining: 6.76s
74:    learn: 0.4253269    total: 4.02s    remaining: 6.7s
75:    learn: 0.4251020    total: 4.11s    remaining: 6.7s
76:    learn: 0.4250459    total: 4.15s    remaining: 6.62s
77:    learn: 0.4242515    total: 4.21s    remaining: 6.58s
78:    learn: 0.4239883    total: 4.28s    remaining: 6.56s
79:    learn: 0.4238500    total: 4.35s    remaining: 6.52s
80:    learn: 0.4233442    total: 4.4s     remaining: 6.46s
81:    learn: 0.4232237    total: 4.47s    remaining: 6.43s
82:    learn: 0.4231109    total: 4.53s    remaining: 6.39s
83:    learn: 0.4229070    total: 4.58s    remaining: 6.32s
84:    learn: 0.4226362    total: 4.63s    remaining: 6.26s
85:    learn: 0.4223318    total: 4.67s    remaining: 6.2s
86:    learn: 0.4219517    total: 4.72s    remaining: 6.13s
87:    learn: 0.4218566    total: 4.77s    remaining: 6.07s
88:    learn: 0.4214087    total: 4.82s    remaining: 6.01s
89:    learn: 0.4210807    total: 4.9s     remaining: 5.99s
90:    learn: 0.4208684    total: 4.95s    remaining: 5.93s
91:    learn: 0.4203508    total: 5.01s    remaining: 5.88s
92:    learn: 0.4201813    total: 5.06s    remaining: 5.82s
93:    learn: 0.4201668    total: 5.09s    remaining: 5.74s
94:    learn: 0.4200493    total: 5.14s    remaining: 5.68s
95:    learn: 0.4198366    total: 5.2s     remaining: 5.63s
96:    learn: 0.4196637    total: 5.25s    remaining: 5.58s
97:    learn: 0.4194152    total: 5.32s    remaining: 5.54s
98:    learn: 0.4193033    total: 5.37s    remaining: 5.48s
99:    learn: 0.4188640    total: 5.42s    remaining: 5.42s
100:   learn: 0.4186199    total: 5.49s    remaining: 5.38s
101:   learn: 0.4184821    total: 5.53s    remaining: 5.31s
102:   learn: 0.4179402    total: 5.58s    remaining: 5.26s
103:   learn: 0.4178371    total: 5.63s    remaining: 5.2s
104:   learn: 0.4177862    total: 5.7s     remaining: 5.16s
105:   learn: 0.4176603    total: 5.75s    remaining: 5.1s
106:   learn: 0.4169844    total: 5.81s    remaining: 5.05s
107:   learn: 0.4168523    total: 5.86s    remaining: 4.99s
108:   learn: 0.4166365    total: 5.91s    remaining: 4.93s
109:   learn: 0.4165553    total: 5.97s    remaining: 4.88s
110:   learn: 0.4163415    total: 6.02s    remaining: 4.83s
111:   learn: 0.4157584    total: 6.07s    remaining: 4.77s
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112:    learn: 0.4155468    total: 6.14s    remaining: 4.73s
113:    learn: 0.4149126    total: 6.23s    remaining: 4.7s
114:    learn: 0.4147791    total: 6.28s    remaining: 4.64s
115:    learn: 0.4146763    total: 6.33s    remaining: 4.58s
116:    learn: 0.4145384    total: 6.41s    remaining: 4.55s
117:    learn: 0.4139190    total: 6.46s    remaining: 4.49s
118:    learn: 0.4138534    total: 6.51s    remaining: 4.43s
119:    learn: 0.4136376    total: 6.57s    remaining: 4.38s
120:    learn: 0.4131404    total: 6.63s    remaining: 4.33s
121:    learn: 0.4129925    total: 6.7s     remaining: 4.29s
122:    learn: 0.4128575    total: 6.74s    remaining: 4.22s
123:    learn: 0.4121127    total: 6.79s    remaining: 4.16s
124:    learn: 0.4120758    total: 6.84s    remaining: 4.11s
125:    learn: 0.4116703    total: 6.89s    remaining: 4.04s
126:    learn: 0.4111569    total: 6.93s    remaining: 3.98s
127:    learn: 0.4110430    total: 6.99s    remaining: 3.93s
128:    learn: 0.4108620    total: 7.03s    remaining: 3.87s
129:    learn: 0.4106784    total: 7.08s    remaining: 3.81s
130:    learn: 0.4105026    total: 7.14s    remaining: 3.76s
131:    learn: 0.4103846    total: 7.19s    remaining: 3.7s
132:    learn: 0.4101962    total: 7.24s    remaining: 3.65s
133:    learn: 0.4100170    total: 7.29s    remaining: 3.59s
134:    learn: 0.4098094    total: 7.34s    remaining: 3.53s
135:    learn: 0.4095990    total: 7.39s    remaining: 3.48s
136:    learn: 0.4091569    total: 7.45s    remaining: 3.42s
137:    learn: 0.4090264    total: 7.49s    remaining: 3.37s
138:    learn: 0.4087947    total: 7.54s    remaining: 3.31s
139:    learn: 0.4086222    total: 7.6s     remaining: 3.26s
140:    learn: 0.4084075    total: 7.67s    remaining: 3.21s
141:    learn: 0.4080159    total: 7.72s    remaining: 3.15s
142:    learn: 0.4078357    total: 7.77s    remaining: 3.1s
143:    learn: 0.4077162    total: 7.83s    remaining: 3.05s
144:    learn: 0.4076080    total: 7.88s    remaining: 2.99s
145:    learn: 0.4074965    total: 7.92s    remaining: 2.93s
146:    learn: 0.4073487    total: 7.97s    remaining: 2.87s
147:    learn: 0.4072091    total: 8.02s    remaining: 2.82s
148:    learn: 0.4069949    total: 8.06s    remaining: 2.76s
149:    learn: 0.4065148    total: 8.11s    remaining: 2.7s
150:    learn: 0.4063659    total: 8.15s    remaining: 2.65s
151:    learn: 0.4062508    total: 8.21s    remaining: 2.59s
152:    learn: 0.4060732    total: 8.27s    remaining: 2.54s
153:    learn: 0.4059912    total: 8.34s    remaining: 2.49s
154:    learn: 0.4058683    total: 8.39s    remaining: 2.44s
155:    learn: 0.4053831    total: 8.44s    remaining: 2.38s
156:    learn: 0.4052340    total: 8.5s     remaining: 2.33s
157:    learn: 0.4049659    total: 8.57s    remaining: 2.28s
158:    learn: 0.4046715    total: 8.63s    remaining: 2.23s
159:    learn: 0.4044194    total: 8.68s    remaining: 2.17s
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160:     learn: 0.4043065     total: 8.73s     remaining: 2.11s
161:     learn: 0.4042507     total: 8.77s     remaining: 2.06s
162:     learn: 0.4041772     total: 8.81s     remaining: 2s
163:     learn: 0.4039196     total: 8.86s     remaining: 1.95s
164:     learn: 0.4037629     total: 8.9s      remaining: 1.89s
165:     learn: 0.4037028     total: 8.96s     remaining: 1.84s
166:     learn: 0.4033462     total: 9.03s     remaining: 1.78s
167:     learn: 0.4032219     total: 9.09s     remaining: 1.73s
168:     learn: 0.4030835     total: 9.14s     remaining: 1.68s
169:     learn: 0.4028153     total: 9.2s      remaining: 1.62s
170:     learn: 0.4027805     total: 9.25s     remaining: 1.57s
171:     learn: 0.4026966     total: 9.31s     remaining: 1.52s
172:     learn: 0.4024884     total: 9.37s     remaining: 1.46s
173:     learn: 0.4023543     total: 9.41s     remaining: 1.41s
174:     learn: 0.4022908     total: 9.46s     remaining: 1.35s
175:     learn: 0.4021079     total: 9.51s     remaining: 1.3s
176:     learn: 0.4019281     total: 9.56s     remaining: 1.24s
177:     learn: 0.4017551     total: 9.61s     remaining: 1.19s
178:     learn: 0.4016582     total: 9.67s     remaining: 1.13s
179:     learn: 0.4014487     total: 9.74s     remaining: 1.08s
180:     learn: 0.4013730     total: 9.83s     remaining: 1.03s
181:     learn: 0.4012291     total: 9.88s     remaining: 977ms
182:     learn: 0.4010957     total: 9.92s     remaining: 922ms
183:     learn: 0.4010114     total: 9.97s     remaining: 867ms
184:     learn: 0.4009080     total: 10s       remaining: 812ms
185:     learn: 0.4008356     total: 10.1s     remaining: 757ms
186:     learn: 0.4006675     total: 10.1s     remaining: 703ms
187:     learn: 0.4003959     total: 10.2s     remaining: 649ms
188:     learn: 0.4003240     total: 10.2s     remaining: 595ms
189:     learn: 0.4002118     total: 10.3s     remaining: 540ms
190:     learn: 0.4001175     total: 10.3s     remaining: 485ms
191:     learn: 0.3999951     total: 10.3s     remaining: 431ms
192:     learn: 0.3997817     total: 10.4s     remaining: 378ms
193:     learn: 0.3996869     total: 10.5s     remaining: 324ms
194:     learn: 0.3993883     total: 10.5s     remaining: 269ms
195:     learn: 0.3991824     total: 10.6s     remaining: 216ms
196:     learn: 0.3990841     total: 10.6s     remaining: 162ms
197:     learn: 0.3989341     total: 10.7s     remaining: 108ms
198:     learn: 0.3988983     total: 10.7s     remaining: 53.9ms
199:     learn: 0.3987419     total: 10.8s     remaining: 0us
0:       learn: 0.6393373     total: 42.9ms    remaining: 8.53s
1:       learn: 0.5989341     total: 95.1ms    remaining: 9.41s
2:       learn: 0.5700206     total: 150ms     remaining: 9.88s
3:       learn: 0.5456543     total: 205ms     remaining: 10s
4:       learn: 0.5273296     total: 252ms     remaining: 9.84s
5:       learn: 0.5146782     total: 305ms     remaining: 9.85s
6:       learn: 0.5014431     total: 357ms     remaining: 9.83s
7:       learn: 0.4912618     total: 418ms     remaining: 10s
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8:       learn: 0.4835712       total: 474ms    remaining: 10.1s
9:       learn: 0.4779316       total: 518ms    remaining: 9.84s
10:      learn: 0.4747626       total: 546ms    remaining: 9.38s
11:      learn: 0.4702826       total: 603ms    remaining: 9.44s
12:      learn: 0.4655970       total: 672ms    remaining: 9.66s
13:      learn: 0.4629376       total: 733ms    remaining: 9.73s
14:      learn: 0.4601627       total: 789ms    remaining: 9.73s
15:      learn: 0.4576016       total: 844ms    remaining: 9.71s
16:      learn: 0.4560169       total: 889ms    remaining: 9.57s
17:      learn: 0.4532162       total: 950ms    remaining: 9.6s
18:      learn: 0.4519177       total: 1s       remaining: 9.57s
19:      learn: 0.4508864       total: 1.07s    remaining: 9.62s
20:      learn: 0.4506869       total: 1.08s    remaining: 9.23s
21:      learn: 0.4489308       total: 1.13s    remaining: 9.12s
22:      learn: 0.4475648       total: 1.18s    remaining: 9.11s
23:      learn: 0.4465891       total: 1.24s    remaining: 9.1s
24:      learn: 0.4455921       total: 1.28s    remaining: 8.97s
25:      learn: 0.4450045       total: 1.34s    remaining: 8.99s
26:      learn: 0.4444153       total: 1.41s    remaining: 9.02s
27:      learn: 0.4437870       total: 1.46s    remaining: 8.96s
28:      learn: 0.4431398       total: 1.51s    remaining: 8.89s
29:      learn: 0.4420886       total: 1.61s    remaining: 9.15s
30:      learn: 0.4414343       total: 1.66s    remaining: 9.07s
31:      learn: 0.4405604       total: 1.73s    remaining: 9.07s
32:      learn: 0.4400842       total: 1.78s    remaining: 9s
33:      learn: 0.4396523       total: 1.83s    remaining: 8.94s
34:      learn: 0.4391427       total: 1.88s    remaining: 8.86s
35:      learn: 0.4387882       total: 1.98s    remaining: 9s
36:      learn: 0.4381705       total: 2.03s    remaining: 8.93s
37:      learn: 0.4379343       total: 2.08s    remaining: 8.85s
38:      learn: 0.4373769       total: 2.13s    remaining: 8.78s
39:      learn: 0.4370112       total: 2.17s    remaining: 8.69s
40:      learn: 0.4364268       total: 2.23s    remaining: 8.64s
41:      learn: 0.4359140       total: 2.29s    remaining: 8.61s
42:      learn: 0.4357139       total: 2.34s    remaining: 8.54s
43:      learn: 0.4353579       total: 2.4s     remaining: 8.52s
44:      learn: 0.4350462       total: 2.46s    remaining: 8.47s
45:      learn: 0.4349165       total: 2.52s    remaining: 8.45s
46:      learn: 0.4346478       total: 2.59s    remaining: 8.44s
47:      learn: 0.4342375       total: 2.66s    remaining: 8.42s
48:      learn: 0.4339514       total: 2.71s    remaining: 8.36s
49:      learn: 0.4333409       total: 2.77s    remaining: 8.3s
50:      learn: 0.4331438       total: 2.81s    remaining: 8.22s
51:      learn: 0.4327168       total: 2.86s    remaining: 8.14s
52:      learn: 0.4324156       total: 2.9s     remaining: 8.06s
53:      learn: 0.4321714       total: 2.95s    remaining: 7.97s
54:      learn: 0.4317134       total: 3.01s    remaining: 7.92s
55:      learn: 0.4313855       total: 3.06s    remaining: 7.87s
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56:      learn: 0.4311663      total: 3.1s     remaining: 7.78s
57:      learn: 0.4309616      total: 3.18s    remaining: 7.79s
58:      learn: 0.4307615      total: 3.23s    remaining: 7.73s
59:      learn: 0.4304104      total: 3.32s    remaining: 7.74s
60:      learn: 0.4300216      total: 3.38s    remaining: 7.7s
61:      learn: 0.4297989      total: 3.44s    remaining: 7.66s
62:      learn: 0.4295315      total: 3.51s    remaining: 7.63s
63:      learn: 0.4289879      total: 3.57s    remaining: 7.59s
64:      learn: 0.4287078      total: 3.64s    remaining: 7.55s
65:      learn: 0.4285624      total: 3.7s     remaining: 7.51s
66:      learn: 0.4282454      total: 3.76s    remaining: 7.46s
67:      learn: 0.4276634      total: 3.83s    remaining: 7.43s
68:      learn: 0.4271006      total: 3.89s    remaining: 7.39s
69:      learn: 0.4267725      total: 3.94s    remaining: 7.33s
70:      learn: 0.4265158      total: 4.03s    remaining: 7.32s
71:      learn: 0.4263364      total: 4.08s    remaining: 7.26s
72:      learn: 0.4262483      total: 4.17s    remaining: 7.26s
73:      learn: 0.4261077      total: 4.23s    remaining: 7.21s
74:      learn: 0.4258936      total: 4.29s    remaining: 7.15s
75:      learn: 0.4257519      total: 4.34s    remaining: 7.08s
76:      learn: 0.4254229      total: 4.4s     remaining: 7.03s
77:      learn: 0.4252925      total: 4.46s    remaining: 6.97s
78:      learn: 0.4249981      total: 4.52s    remaining: 6.93s
79:      learn: 0.4245947      total: 4.57s    remaining: 6.86s
80:      learn: 0.4244356      total: 4.63s    remaining: 6.8s
81:      learn: 0.4244329      total: 4.65s    remaining: 6.7s
82:      learn: 0.4244173      total: 4.69s    remaining: 6.61s
83:      learn: 0.4241670      total: 4.75s    remaining: 6.56s
84:      learn: 0.4240337      total: 4.83s    remaining: 6.53s
85:      learn: 0.4239381      total: 4.89s    remaining: 6.48s
86:      learn: 0.4237211      total: 4.96s    remaining: 6.44s
87:      learn: 0.4234147      total: 5.04s    remaining: 6.41s
88:      learn: 0.4229031      total: 5.12s    remaining: 6.39s
89:      learn: 0.4226391      total: 5.18s    remaining: 6.33s
90:      learn: 0.4225845      total: 5.23s    remaining: 6.26s
91:      learn: 0.4224034      total: 5.28s    remaining: 6.2s
92:      learn: 0.4220668      total: 5.33s    remaining: 6.13s
93:      learn: 0.4219601      total: 5.38s    remaining: 6.07s
94:      learn: 0.4215948      total: 5.44s    remaining: 6.01s
95:      learn: 0.4214515      total: 5.5s     remaining: 5.96s
96:      learn: 0.4213761      total: 5.55s    remaining: 5.89s
97:      learn: 0.4212704      total: 5.59s    remaining: 5.82s
98:      learn: 0.4211742      total: 5.64s    remaining: 5.75s
99:      learn: 0.4208991      total: 5.69s    remaining: 5.69s
100:     learn: 0.4208396      total: 5.73s    remaining: 5.62s
101:     learn: 0.4202122      total: 5.78s    remaining: 5.55s
102:     learn: 0.4200122      total: 5.82s    remaining: 5.48s
103:     learn: 0.4193273      total: 5.87s    remaining: 5.42s
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104:     learn: 0.4190494       total: 5.93s     remaining: 5.36s
105:     learn: 0.4186567       total: 5.99s     remaining: 5.31s
106:     learn: 0.4184216       total: 6.04s     remaining: 5.25s
107:     learn: 0.4180853       total: 6.1s      remaining: 5.19s
108:     learn: 0.4178603       total: 6.18s     remaining: 5.16s
109:     learn: 0.4177869       total: 6.24s     remaining: 5.1s
110:     learn: 0.4176126       total: 6.3s      remaining: 5.05s
111:     learn: 0.4173223       total: 6.37s     remaining: 5s
112:     learn: 0.4171676       total: 6.43s     remaining: 4.95s
113:     learn: 0.4170768       total: 6.49s     remaining: 4.89s
114:     learn: 0.4169741       total: 6.55s     remaining: 4.84s
115:     learn: 0.4168033       total: 6.62s     remaining: 4.79s
116:     learn: 0.4164042       total: 6.68s     remaining: 4.74s
117:     learn: 0.4156920       total: 6.74s     remaining: 4.68s
118:     learn: 0.4153170       total: 6.8s      remaining: 4.63s
119:     learn: 0.4150166       total: 6.86s     remaining: 4.58s
120:     learn: 0.4143243       total: 6.92s     remaining: 4.52s
121:     learn: 0.4140629       total: 6.98s     remaining: 4.46s
122:     learn: 0.4138065       total: 7.05s     remaining: 4.41s
123:     learn: 0.4135838       total: 7.11s     remaining: 4.36s
124:     learn: 0.4134326       total: 7.18s     remaining: 4.31s
125:     learn: 0.4133009       total: 7.23s     remaining: 4.25s
126:     learn: 0.4131102       total: 7.3s      remaining: 4.19s
127:     learn: 0.4128730       total: 7.36s     remaining: 4.14s
128:     learn: 0.4126944       total: 7.45s     remaining: 4.1s
129:     learn: 0.4122785       total: 7.5s      remaining: 4.04s
130:     learn: 0.4118637       total: 7.57s     remaining: 3.99s
131:     learn: 0.4115742       total: 7.62s     remaining: 3.92s
132:     learn: 0.4113541       total: 7.67s     remaining: 3.86s
133:     learn: 0.4111176       total: 7.72s     remaining: 3.8s
134:     learn: 0.4109206       total: 7.81s     remaining: 3.76s
135:     learn: 0.4106157       total: 7.86s     remaining: 3.7s
136:     learn: 0.4104848       total: 7.92s     remaining: 3.64s
137:     learn: 0.4102716       total: 7.97s     remaining: 3.58s
138:     learn: 0.4101801       total: 8.03s     remaining: 3.52s
139:     learn: 0.4099110       total: 8.09s     remaining: 3.46s
140:     learn: 0.4097871       total: 8.16s     remaining: 3.41s
141:     learn: 0.4096803       total: 8.22s     remaining: 3.36s
142:     learn: 0.4095943       total: 8.26s     remaining: 3.29s
143:     learn: 0.4095207       total: 8.31s     remaining: 3.23s
144:     learn: 0.4094379       total: 8.38s     remaining: 3.18s
145:     learn: 0.4091018       total: 8.45s     remaining: 3.13s
146:     learn: 0.4089770       total: 8.51s     remaining: 3.07s
147:     learn: 0.4088078       total: 8.56s     remaining: 3.01s
148:     learn: 0.4087279       total: 8.61s     remaining: 2.95s
149:     learn: 0.4086300       total: 8.66s     remaining: 2.89s
150:     learn: 0.4085321       total: 8.7s      remaining: 2.82s
151:     learn: 0.4083800       total: 8.77s     remaining: 2.77s
```

```
152:     learn: 0.4083330     total: 8.81s     remaining: 2.71s
153:     learn: 0.4081551     total: 8.87s     remaining: 2.65s
154:     learn: 0.4080168     total: 8.94s     remaining: 2.6s
155:     learn: 0.4079248     total: 9.01s     remaining: 2.54s
156:     learn: 0.4077988     total: 9.06s     remaining: 2.48s
157:     learn: 0.4076399     total: 9.12s     remaining: 2.42s
158:     learn: 0.4073188     total: 9.18s     remaining: 2.37s
159:     learn: 0.4071430     total: 9.25s     remaining: 2.31s
160:     learn: 0.4067628     total: 9.31s     remaining: 2.26s
161:     learn: 0.4066325     total: 9.38s     remaining: 2.2s
162:     learn: 0.4064935     total: 9.44s     remaining: 2.14s
163:     learn: 0.4063846     total: 9.51s     remaining: 2.09s
164:     learn: 0.4061564     total: 9.59s     remaining: 2.03s
165:     learn: 0.4061559     total: 9.65s     remaining: 1.98s
166:     learn: 0.4060527     total: 9.71s     remaining: 1.92s
167:     learn: 0.4059130     total: 9.78s     remaining: 1.86s
168:     learn: 0.4056790     total: 9.85s     remaining: 1.81s
169:     learn: 0.4056274     total: 9.9s      remaining: 1.75s
170:     learn: 0.4055160     total: 9.96s     remaining: 1.69s
171:     learn: 0.4052845     total: 10s       remaining: 1.63s
172:     learn: 0.4050096     total: 10.1s     remaining: 1.57s
173:     learn: 0.4047438     total: 10.2s     remaining: 1.52s
174:     learn: 0.4045316     total: 10.2s     remaining: 1.46s
175:     learn: 0.4041309     total: 10.3s     remaining: 1.4s
176:     learn: 0.4039356     total: 10.3s     remaining: 1.34s
177:     learn: 0.4037315     total: 10.4s     remaining: 1.28s
178:     learn: 0.4034940     total: 10.4s     remaining: 1.23s
179:     learn: 0.4031712     total: 10.5s     remaining: 1.17s
180:     learn: 0.4030663     total: 10.6s     remaining: 1.11s
181:     learn: 0.4029660     total: 10.6s     remaining: 1.05s
182:     learn: 0.4027156     total: 10.7s     remaining: 994ms
183:     learn: 0.4025799     total: 10.8s     remaining: 936ms
184:     learn: 0.4022431     total: 10.8s     remaining: 878ms
185:     learn: 0.4020585     total: 10.9s     remaining: 818ms
186:     learn: 0.4017831     total: 10.9s     remaining: 760ms
187:     learn: 0.4016457     total: 11s       remaining: 701ms
188:     learn: 0.4015340     total: 11s       remaining: 642ms
189:     learn: 0.4014381     total: 11.1s     remaining: 583ms
190:     learn: 0.4013944     total: 11.1s     remaining: 524ms
191:     learn: 0.4011143     total: 11.2s     remaining: 466ms
192:     learn: 0.4010023     total: 11.2s     remaining: 408ms
193:     learn: 0.4009063     total: 11.3s     remaining: 350ms
194:     learn: 0.4008590     total: 11.4s     remaining: 291ms
195:     learn: 0.4007393     total: 11.4s     remaining: 233ms
196:     learn: 0.4005639     total: 11.5s     remaining: 174ms
197:     learn: 0.4004509     total: 11.5s     remaining: 116ms
198:     learn: 0.4002413     total: 11.6s     remaining: 58.1ms
199:     learn: 0.4002218     total: 11.6s     remaining: 0us
```

```
0:      learn: 0.6364780      total: 47.4ms     remaining: 9.42s
1:      learn: 0.5923777      total: 105ms      remaining: 10.4s
2:      learn: 0.5607970      total: 144ms      remaining: 9.47s
3:      learn: 0.5429591      total: 189ms      remaining: 9.25s
4:      learn: 0.5244358      total: 283ms      remaining: 11s
5:      learn: 0.5128016      total: 325ms      remaining: 10.5s
6:      learn: 0.5009928      total: 396ms      remaining: 10.9s
7:      learn: 0.4919843      total: 442ms      remaining: 10.6s
8:      learn: 0.4847473      total: 506ms      remaining: 10.7s
9:      learn: 0.4785620      total: 544ms      remaining: 10.3s
10:     learn: 0.4732509      total: 614ms      remaining: 10.5s
11:     learn: 0.4679692      total: 676ms      remaining: 10.6s
12:     learn: 0.4645533      total: 738ms      remaining: 10.6s
13:     learn: 0.4614109      total: 813ms      remaining: 10.8s
14:     learn: 0.4588923      total: 857ms      remaining: 10.6s
15:     learn: 0.4569020      total: 901ms      remaining: 10.4s
16:     learn: 0.4550949      total: 954ms      remaining: 10.3s
17:     learn: 0.4530263      total: 1.01s      remaining: 10.2s
18:     learn: 0.4515021      total: 1.07s      remaining: 10.2s
19:     learn: 0.4498437      total: 1.13s      remaining: 10.1s
20:     learn: 0.4488363      total: 1.18s      remaining: 10.1s
21:     learn: 0.4477676      total: 1.22s      remaining: 9.89s
22:     learn: 0.4466406      total: 1.27s      remaining: 9.8s
23:     learn: 0.4459978      total: 1.32s      remaining: 9.71s
24:     learn: 0.4456432      total: 1.37s      remaining: 9.58s
25:     learn: 0.4438613      total: 1.44s      remaining: 9.61s
26:     learn: 0.4425073      total: 1.48s      remaining: 9.5s
27:     learn: 0.4419382      total: 1.55s      remaining: 9.54s
28:     learn: 0.4412972      total: 1.61s      remaining: 9.48s
29:     learn: 0.4407902      total: 1.68s      remaining: 9.51s
30:     learn: 0.4398281      total: 1.74s      remaining: 9.46s
31:     learn: 0.4386878      total: 1.78s      remaining: 9.37s
32:     learn: 0.4381394      total: 1.85s      remaining: 9.36s
33:     learn: 0.4375702      total: 1.9s       remaining: 9.27s
34:     learn: 0.4370363      total: 1.96s      remaining: 9.24s
35:     learn: 0.4367415      total: 2.01s      remaining: 9.18s
36:     learn: 0.4361881      total: 2.08s      remaining: 9.17s
37:     learn: 0.4354484      total: 2.13s      remaining: 9.07s
38:     learn: 0.4343673      total: 2.17s      remaining: 8.96s
39:     learn: 0.4342472      total: 2.22s      remaining: 8.88s
40:     learn: 0.4339503      total: 2.27s      remaining: 8.79s
41:     learn: 0.4336875      total: 2.31s      remaining: 8.68s
42:     learn: 0.4333281      total: 2.36s      remaining: 8.62s
43:     learn: 0.4331463      total: 2.43s      remaining: 8.63s
44:     learn: 0.4330709      total: 2.48s      remaining: 8.55s
45:     learn: 0.4329210      total: 2.55s      remaining: 8.53s
46:     learn: 0.4326524      total: 2.6s       remaining: 8.45s
47:     learn: 0.4319857      total: 2.66s      remaining: 8.42s
```

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48:     learn: 0.4318318     total: 2.75s     remaining: 8.47s
49:     learn: 0.4317881     total: 2.78s     remaining: 8.34s
50:     learn: 0.4314819     total: 2.82s     remaining: 8.25s
51:     learn: 0.4310785     total: 2.88s     remaining: 8.19s
52:     learn: 0.4307728     total: 2.93s     remaining: 8.13s
53:     learn: 0.4306275     total: 2.99s     remaining: 8.1s
54:     learn: 0.4304147     total: 3.05s     remaining: 8.04s
55:     learn: 0.4302237     total: 3.1s      remaining: 7.96s
56:     learn: 0.4299709     total: 3.16s     remaining: 7.93s
57:     learn: 0.4297032     total: 3.22s     remaining: 7.88s
58:     learn: 0.4296016     total: 3.26s     remaining: 7.8s
59:     learn: 0.4295468     total: 3.31s     remaining: 7.71s
60:     learn: 0.4288512     total: 3.37s     remaining: 7.67s
61:     learn: 0.4282962     total: 3.43s     remaining: 7.63s
62:     learn: 0.4281689     total: 3.49s     remaining: 7.59s
63:     learn: 0.4280179     total: 3.56s     remaining: 7.56s
64:     learn: 0.4277008     total: 3.61s     remaining: 7.49s
65:     learn: 0.4276717     total: 3.63s     remaining: 7.37s
66:     learn: 0.4276717     total: 3.64s     remaining: 7.23s
67:     learn: 0.4273750     total: 3.71s     remaining: 7.19s
68:     learn: 0.4271838     total: 3.79s     remaining: 7.2s
69:     learn: 0.4270996     total: 3.85s     remaining: 7.15s
70:     learn: 0.4270230     total: 3.91s     remaining: 7.11s
71:     learn: 0.4267558     total: 3.96s     remaining: 7.03s
72:     learn: 0.4265015     total: 4.03s     remaining: 7.02s
73:     learn: 0.4262852     total: 4.1s      remaining: 6.98s
74:     learn: 0.4260681     total: 4.15s     remaining: 6.92s
75:     learn: 0.4255083     total: 4.22s     remaining: 6.89s
76:     learn: 0.4250870     total: 4.28s     remaining: 6.83s
77:     learn: 0.4249918     total: 4.33s     remaining: 6.77s
78:     learn: 0.4249912     total: 4.34s     remaining: 6.66s
79:     learn: 0.4248431     total: 4.39s     remaining: 6.59s
80:     learn: 0.4246523     total: 4.43s     remaining: 6.51s
81:     learn: 0.4245568     total: 4.48s     remaining: 6.45s
82:     learn: 0.4245000     total: 4.53s     remaining: 6.39s
83:     learn: 0.4240978     total: 4.61s     remaining: 6.36s
84:     learn: 0.4240106     total: 4.65s     remaining: 6.29s
85:     learn: 0.4239164     total: 4.69s     remaining: 6.22s
86:     learn: 0.4230720     total: 4.75s     remaining: 6.17s
87:     learn: 0.4226653     total: 4.81s     remaining: 6.12s
88:     learn: 0.4224612     total: 4.86s     remaining: 6.07s
89:     learn: 0.4221762     total: 4.92s     remaining: 6.01s
90:     learn: 0.4221707     total: 4.95s     remaining: 5.92s
91:     learn: 0.4221707     total: 4.96s     remaining: 5.83s
92:     learn: 0.4216516     total: 5.01s     remaining: 5.76s
93:     learn: 0.4216445     total: 5.05s     remaining: 5.69s
94:     learn: 0.4215384     total: 5.1s      remaining: 5.63s
95:     learn: 0.4212591     total: 5.16s     remaining: 5.58s
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96:     learn: 0.4211636     total: 5.22s     remaining: 5.54s
97:     learn: 0.4207392     total: 5.32s     remaining: 5.54s
98:     learn: 0.4204642     total: 5.37s     remaining: 5.48s
99:     learn: 0.4204642     total: 5.39s     remaining: 5.39s
100:    learn: 0.4200808     total: 5.43s     remaining: 5.33s
101:    learn: 0.4193336     total: 5.51s     remaining: 5.3s
102:    learn: 0.4192434     total: 5.58s     remaining: 5.25s
103:    learn: 0.4187706     total: 5.64s     remaining: 5.21s
104:    learn: 0.4186595     total: 5.71s     remaining: 5.16s
105:    learn: 0.4185506     total: 5.75s     remaining: 5.1s
106:    learn: 0.4181710     total: 5.8s      remaining: 5.04s
107:    learn: 0.4180549     total: 5.86s     remaining: 4.99s
108:    learn: 0.4174986     total: 5.91s     remaining: 4.93s
109:    learn: 0.4173773     total: 5.95s     remaining: 4.87s
110:    learn: 0.4173122     total: 6s        remaining: 4.81s
111:    learn: 0.4172031     total: 6.06s     remaining: 4.76s
112:    learn: 0.4168609     total: 6.11s     remaining: 4.7s
113:    learn: 0.4162793     total: 6.16s     remaining: 4.65s
114:    learn: 0.4161448     total: 6.21s     remaining: 4.59s
115:    learn: 0.4155696     total: 6.27s     remaining: 4.54s
116:    learn: 0.4154917     total: 6.31s     remaining: 4.47s
117:    learn: 0.4153422     total: 6.35s     remaining: 4.41s
118:    learn: 0.4150915     total: 6.39s     remaining: 4.35s
119:    learn: 0.4148553     total: 6.45s     remaining: 4.3s
120:    learn: 0.4146686     total: 6.5s      remaining: 4.25s
121:    learn: 0.4145585     total: 6.56s     remaining: 4.2s
122:    learn: 0.4145104     total: 6.61s     remaining: 4.14s
123:    learn: 0.4142140     total: 6.66s     remaining: 4.08s
124:    learn: 0.4140281     total: 6.71s     remaining: 4.03s
125:    learn: 0.4135105     total: 6.77s     remaining: 3.98s
126:    learn: 0.4133126     total: 6.82s     remaining: 3.92s
127:    learn: 0.4130600     total: 6.86s     remaining: 3.86s
128:    learn: 0.4128293     total: 6.91s     remaining: 3.8s
129:    learn: 0.4128127     total: 6.95s     remaining: 3.74s
130:    learn: 0.4121921     total: 7s        remaining: 3.69s
131:    learn: 0.4120231     total: 7.05s     remaining: 3.63s
132:    learn: 0.4120006     total: 7.1s      remaining: 3.58s
133:    learn: 0.4116345     total: 7.15s     remaining: 3.52s
134:    learn: 0.4115898     total: 7.2s      remaining: 3.47s
135:    learn: 0.4115812     total: 7.24s     remaining: 3.41s
136:    learn: 0.4111351     total: 7.29s     remaining: 3.35s
137:    learn: 0.4111282     total: 7.32s     remaining: 3.29s
138:    learn: 0.4107487     total: 7.37s     remaining: 3.23s
139:    learn: 0.4105447     total: 7.42s     remaining: 3.18s
140:    learn: 0.4103525     total: 7.48s     remaining: 3.13s
141:    learn: 0.4101477     total: 7.53s     remaining: 3.08s
142:    learn: 0.4099683     total: 7.6s      remaining: 3.03s
143:    learn: 0.4094899     total: 7.65s     remaining: 2.98s
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144:    learn: 0.4091497    total: 7.72s    remaining: 2.93s
145:    learn: 0.4089275    total: 7.78s    remaining: 2.88s
146:    learn: 0.4086260    total: 7.83s    remaining: 2.82s
147:    learn: 0.4085111    total: 7.89s    remaining: 2.77s
148:    learn: 0.4079205    total: 7.95s    remaining: 2.72s
149:    learn: 0.4077958    total: 8.01s    remaining: 2.67s
150:    learn: 0.4076488    total: 8.06s    remaining: 2.62s
151:    learn: 0.4074455    total: 8.12s    remaining: 2.56s
152:    learn: 0.4071959    total: 8.19s    remaining: 2.52s
153:    learn: 0.4070655    total: 8.27s    remaining: 2.47s
154:    learn: 0.4066850    total: 8.32s    remaining: 2.42s
155:    learn: 0.4064589    total: 8.38s    remaining: 2.36s
156:    learn: 0.4062534    total: 8.47s    remaining: 2.32s
157:    learn: 0.4058810    total: 8.52s    remaining: 2.27s
158:    learn: 0.4056081    total: 8.57s    remaining: 2.21s
159:    learn: 0.4054801    total: 8.64s    remaining: 2.16s
160:    learn: 0.4053642    total: 8.69s    remaining: 2.1s
161:    learn: 0.4052328    total: 8.73s    remaining: 2.05s
162:    learn: 0.4047482    total: 8.79s    remaining: 2s
163:    learn: 0.4046602    total: 8.85s    remaining: 1.94s
164:    learn: 0.4043201    total: 8.91s    remaining: 1.89s
165:    learn: 0.4040222    total: 8.96s    remaining: 1.84s
166:    learn: 0.4039246    total: 9.02s    remaining: 1.78s
167:    learn: 0.4038007    total: 9.07s    remaining: 1.73s
168:    learn: 0.4037050    total: 9.13s    remaining: 1.68s
169:    learn: 0.4035419    total: 9.2s     remaining: 1.62s
170:    learn: 0.4034590    total: 9.24s    remaining: 1.57s
171:    learn: 0.4034149    total: 9.29s    remaining: 1.51s
172:    learn: 0.4032905    total: 9.33s    remaining: 1.46s
173:    learn: 0.4031777    total: 9.38s    remaining: 1.4s
174:    learn: 0.4029328    total: 9.46s    remaining: 1.35s
175:    learn: 0.4027451    total: 9.52s    remaining: 1.3s
176:    learn: 0.4027127    total: 9.57s    remaining: 1.24s
177:    learn: 0.4027007    total: 9.62s    remaining: 1.19s
178:    learn: 0.4025896    total: 9.66s    remaining: 1.13s
179:    learn: 0.4024482    total: 9.71s    remaining: 1.08s
180:    learn: 0.4024422    total: 9.75s    remaining: 1.02s
181:    learn: 0.4023334    total: 9.79s    remaining: 968ms
182:    learn: 0.4022493    total: 9.85s    remaining: 915ms
183:    learn: 0.4021477    total: 9.91s    remaining: 862ms
184:    learn: 0.4020466    total: 9.97s    remaining: 809ms
185:    learn: 0.4016828    total: 10s      remaining: 755ms
186:    learn: 0.4015161    total: 10.1s    remaining: 701ms
187:    learn: 0.4013430    total: 10.1s    remaining: 647ms
188:    learn: 0.4011809    total: 10.2s    remaining: 594ms
189:    learn: 0.4010315    total: 10.3s    remaining: 540ms
190:    learn: 0.4008264    total: 10.3s    remaining: 487ms
191:    learn: 0.4005485    total: 10.4s    remaining: 432ms
```

```
192:     learn: 0.4003713      total: 10.4s    remaining: 378ms
193:     learn: 0.4002561      total: 10.5s    remaining: 324ms
194:     learn: 0.4002106      total: 10.5s    remaining: 270ms
195:     learn: 0.4000462      total: 10.6s    remaining: 215ms
196:     learn: 0.3999608      total: 10.6s    remaining: 162ms
197:     learn: 0.3999017      total: 10.7s    remaining: 108ms
198:     learn: 0.3997518      total: 10.8s    remaining: 54.1ms
199:     learn: 0.3996062      total: 10.8s    remaining: 0us
```
Mean train f1-score of data (CV) 22 is : 0.8147912686237445
Mean test f1-score of data (CV) 22 is : 0.803457409955489

Shape of data 23 is :
(27302, 10)
Distribution of 23 is :
Yes   14101
No   13201
Name: TIMELY_RESPONSE, dtype: int64

<IPython.core.display.HTML object>

MetricVisualizer(layout=Layout(align_self='stretch', height='500px'))
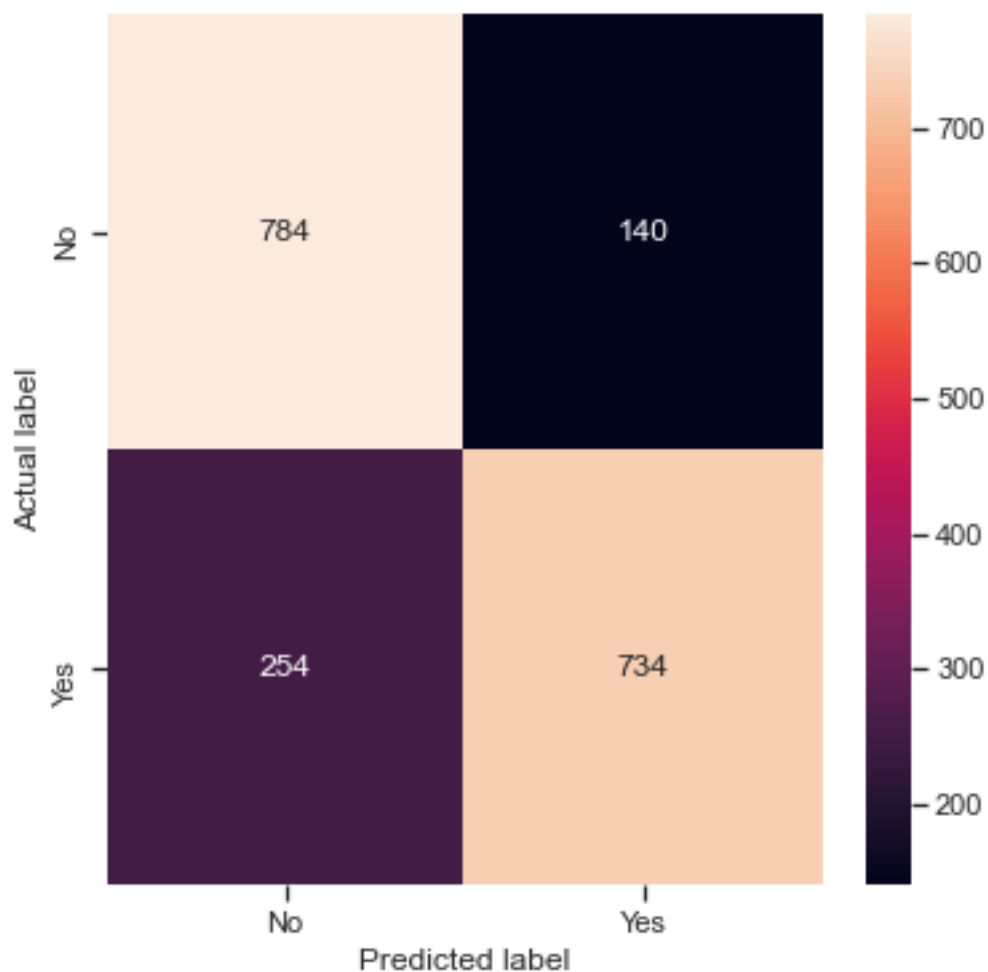
Train f1_score [Yes]: for data 23 is : 0.8065959762931902
Train f1_score [No]: for data 23 is : 0.8153366439542672

	precision	recall	f1-score	support
No	0.76	0.85	0.80	924
Yes	0.84	0.74	0.79	988
accuracy			0.79	1912
macro avg	0.80	0.80	0.79	1912
weighted avg	0.80	0.79	0.79	1912

```
Cross validation result for data 23 is :
0:      learn: 0.6322199      total: 45.9ms    remaining: 9.14s
1:      learn: 0.6003250      total: 86.4ms    remaining: 8.56s
2:      learn: 0.5737306      total: 129ms     remaining: 8.45s
3:      learn: 0.5456601      total: 176ms     remaining: 8.61s
4:      learn: 0.5257689      total: 217ms     remaining: 8.48s
5:      learn: 0.5136626      total: 277ms     remaining: 8.95s
6:      learn: 0.5047101      total: 324ms     remaining: 8.93s
7:      learn: 0.4947246      total: 379ms     remaining: 9.1s
8:      learn: 0.4869990      total: 445ms     remaining: 9.44s
9:      learn: 0.4799909      total: 505ms     remaining: 9.6s
10:     learn: 0.4755602      total: 584ms     remaining: 10s
11:     learn: 0.4715611      total: 637ms     remaining: 9.97s
12:     learn: 0.4686222      total: 709ms     remaining: 10.2s
13:     learn: 0.4653039      total: 758ms     remaining: 10.1s
14:     learn: 0.4629648      total: 815ms     remaining: 10.1s
15:     learn: 0.4601489      total: 885ms     remaining: 10.2s
```

```
16:     learn: 0.4587641     total: 929ms     remaining: 10s
17:     learn: 0.4576621     total: 983ms     remaining: 9.94s
18:     learn: 0.4560659     total: 1.05s     remaining: 10s
19:     learn: 0.4546896     total: 1.09s     remaining: 9.84s
20:     learn: 0.4537972     total: 1.17s     remaining: 10s
21:     learn: 0.4526049     total: 1.22s     remaining: 9.89s
22:     learn: 0.4514301     total: 1.28s     remaining: 9.89s
23:     learn: 0.4496248     total: 1.35s     remaining: 9.91s
24:     learn: 0.4487349     total: 1.41s     remaining: 9.87s
25:     learn: 0.4478869     total: 1.47s     remaining: 9.82s
26:     learn: 0.4473137     total: 1.52s     remaining: 9.72s
27:     learn: 0.4466534     total: 1.57s     remaining: 9.65s
28:     learn: 0.4461669     total: 1.63s     remaining: 9.58s
29:     learn: 0.4457464     total: 1.67s     remaining: 9.47s
30:     learn: 0.4446434     total: 1.73s     remaining: 9.43s
31:     learn: 0.4435183     total: 1.79s     remaining: 9.41s
32:     learn: 0.4429783     total: 1.85s     remaining: 9.37s
33:     learn: 0.4426469     total: 1.9s      remaining: 9.3s
34:     learn: 0.4420226     total: 1.95s     remaining: 9.2s
35:     learn: 0.4413103     total: 2s        remaining: 9.14s
36:     learn: 0.4410001     total: 2.07s     remaining: 9.11s
37:     learn: 0.4406158     total: 2.13s     remaining: 9.08s
38:     learn: 0.4400458     total: 2.19s     remaining: 9.05s
39:     learn: 0.4396110     total: 2.26s     remaining: 9.03s
40:     learn: 0.4390867     total: 2.31s     remaining: 8.95s
41:     learn: 0.4389019     total: 2.36s     remaining: 8.88s
42:     learn: 0.4386256     total: 2.42s     remaining: 8.85s
43:     learn: 0.4377275     total: 2.49s     remaining: 8.83s
44:     learn: 0.4374848     total: 2.54s     remaining: 8.75s
45:     learn: 0.4373412     total: 2.57s     remaining: 8.59s
46:     learn: 0.4372352     total: 2.62s     remaining: 8.54s
47:     learn: 0.4370618     total: 2.69s     remaining: 8.51s
48:     learn: 0.4369282     total: 2.73s     remaining: 8.42s
49:     learn: 0.4365500     total: 2.79s     remaining: 8.36s
50:     learn: 0.4365049     total: 2.83s     remaining: 8.28s
51:     learn: 0.4357158     total: 2.89s     remaining: 8.21s
52:     learn: 0.4355759     total: 2.93s     remaining: 8.14s
53:     learn: 0.4351961     total: 3s        remaining: 8.1s
54:     learn: 0.4349032     total: 3.04s     remaining: 8.03s
55:     learn: 0.4348155     total: 3.09s     remaining: 7.94s
56:     learn: 0.4347146     total: 3.13s     remaining: 7.86s
57:     learn: 0.4347113     total: 3.15s     remaining: 7.72s
58:     learn: 0.4342739     total: 3.21s     remaining: 7.67s
59:     learn: 0.4341220     total: 3.25s     remaining: 7.59s
60:     learn: 0.4340452     total: 3.29s     remaining: 7.51s
61:     learn: 0.4338658     total: 3.35s     remaining: 7.45s
62:     learn: 0.4337553     total: 3.4s      remaining: 7.4s
63:     learn: 0.4332216     total: 3.47s     remaining: 7.37s
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64:     learn: 0.4331595      total: 3.52s     remaining: 7.32s
65:     learn: 0.4327349      total: 3.59s     remaining: 7.29s
66:     learn: 0.4324531      total: 3.64s     remaining: 7.22s
67:     learn: 0.4321744      total: 3.7s      remaining: 7.18s
68:     learn: 0.4317757      total: 3.74s     remaining: 7.11s
69:     learn: 0.4315605      total: 3.8s      remaining: 7.05s
70:     learn: 0.4311581      total: 3.84s     remaining: 6.98s
71:     learn: 0.4309219      total: 3.9s      remaining: 6.94s
72:     learn: 0.4302118      total: 3.95s     remaining: 6.87s
73:     learn: 0.4296886      total: 4s        remaining: 6.81s
74:     learn: 0.4294643      total: 4.04s     remaining: 6.74s
75:     learn: 0.4291935      total: 4.09s     remaining: 6.67s
76:     learn: 0.4288965      total: 4.13s     remaining: 6.6s
77:     learn: 0.4287945      total: 4.2s      remaining: 6.57s
78:     learn: 0.4286390      total: 4.26s     remaining: 6.52s
79:     learn: 0.4285260      total: 4.31s     remaining: 6.46s
80:     learn: 0.4278168      total: 4.37s     remaining: 6.42s
81:     learn: 0.4275058      total: 4.44s     remaining: 6.38s
82:     learn: 0.4273199      total: 4.48s     remaining: 6.32s
83:     learn: 0.4272509      total: 4.54s     remaining: 6.26s
84:     learn: 0.4271269      total: 4.59s     remaining: 6.21s
85:     learn: 0.4270521      total: 4.66s     remaining: 6.17s
86:     learn: 0.4269950      total: 4.71s     remaining: 6.11s
87:     learn: 0.4266899      total: 4.75s     remaining: 6.05s
88:     learn: 0.4265766      total: 4.8s      remaining: 5.99s
89:     learn: 0.4263712      total: 4.85s     remaining: 5.93s
90:     learn: 0.4258326      total: 4.92s     remaining: 5.9s
91:     learn: 0.4257536      total: 4.97s     remaining: 5.83s
92:     learn: 0.4256682      total: 5.02s     remaining: 5.78s
93:     learn: 0.4254872      total: 5.09s     remaining: 5.74s
94:     learn: 0.4253561      total: 5.13s     remaining: 5.68s
95:     learn: 0.4252533      total: 5.18s     remaining: 5.61s
96:     learn: 0.4251159      total: 5.23s     remaining: 5.55s
97:     learn: 0.4250247      total: 5.27s     remaining: 5.49s
98:     learn: 0.4249182      total: 5.34s     remaining: 5.45s
99:     learn: 0.4246102      total: 5.4s      remaining: 5.4s
100:    learn: 0.4244879      total: 5.46s     remaining: 5.36s
101:    learn: 0.4243771      total: 5.5s      remaining: 5.29s
102:    learn: 0.4238241      total: 5.55s     remaining: 5.23s
103:    learn: 0.4236074      total: 5.61s     remaining: 5.18s
104:    learn: 0.4233749      total: 5.67s     remaining: 5.13s
105:    learn: 0.4232269      total: 5.71s     remaining: 5.07s
106:    learn: 0.4232048      total: 5.77s     remaining: 5.01s
107:    learn: 0.4229884      total: 5.82s     remaining: 4.95s
108:    learn: 0.4229086      total: 5.86s     remaining: 4.89s
109:    learn: 0.4227755      total: 5.91s     remaining: 4.83s
110:    learn: 0.4224674      total: 5.96s     remaining: 4.78s
111:    learn: 0.4224570      total: 6.02s     remaining: 4.73s
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112:    learn: 0.4224485    total: 6.07s    remaining: 4.67s
113:    learn: 0.4219493    total: 6.12s    remaining: 4.61s
114:    learn: 0.4215786    total: 6.16s    remaining: 4.55s
115:    learn: 0.4215154    total: 6.21s    remaining: 4.5s
116:    learn: 0.4215020    total: 6.24s    remaining: 4.43s
117:    learn: 0.4212323    total: 6.31s    remaining: 4.38s
118:    learn: 0.4210193    total: 6.37s    remaining: 4.34s
119:    learn: 0.4208519    total: 6.42s    remaining: 4.28s
120:    learn: 0.4206562    total: 6.48s    remaining: 4.23s
121:    learn: 0.4206545    total: 6.52s    remaining: 4.17s
122:    learn: 0.4198708    total: 6.56s    remaining: 4.11s
123:    learn: 0.4198372    total: 6.64s    remaining: 4.07s
124:    learn: 0.4190594    total: 6.71s    remaining: 4.02s
125:    learn: 0.4188069    total: 6.78s    remaining: 3.98s
126:    learn: 0.4185681    total: 6.82s    remaining: 3.92s
127:    learn: 0.4184125    total: 6.87s    remaining: 3.87s
128:    learn: 0.4180111    total: 6.94s    remaining: 3.82s
129:    learn: 0.4180026    total: 7s       remaining: 3.77s
130:    learn: 0.4177875    total: 7.05s    remaining: 3.71s
131:    learn: 0.4175931    total: 7.09s    remaining: 3.65s
132:    learn: 0.4175069    total: 7.14s    remaining: 3.6s
133:    learn: 0.4172157    total: 7.19s    remaining: 3.54s
134:    learn: 0.4166504    total: 7.24s    remaining: 3.49s
135:    learn: 0.4163975    total: 7.29s    remaining: 3.43s
136:    learn: 0.4160567    total: 7.34s    remaining: 3.38s
137:    learn: 0.4159954    total: 7.41s    remaining: 3.33s
138:    learn: 0.4159696    total: 7.46s    remaining: 3.27s
139:    learn: 0.4157110    total: 7.5s     remaining: 3.21s
140:    learn: 0.4157046    total: 7.54s    remaining: 3.16s
141:    learn: 0.4154505    total: 7.59s    remaining: 3.1s
142:    learn: 0.4153512    total: 7.66s    remaining: 3.05s
143:    learn: 0.4150787    total: 7.71s    remaining: 3s
144:    learn: 0.4146370    total: 7.76s    remaining: 2.94s
145:    learn: 0.4144086    total: 7.81s    remaining: 2.89s
146:    learn: 0.4141609    total: 7.86s    remaining: 2.83s
147:    learn: 0.4140853    total: 7.9s     remaining: 2.78s
148:    learn: 0.4136377    total: 7.99s    remaining: 2.73s
149:    learn: 0.4136338    total: 8.04s    remaining: 2.68s
150:    learn: 0.4135714    total: 8.09s    remaining: 2.63s
151:    learn: 0.4131656    total: 8.13s    remaining: 2.57s
152:    learn: 0.4130914    total: 8.18s    remaining: 2.51s
153:    learn: 0.4129075    total: 8.25s    remaining: 2.46s
154:    learn: 0.4126583    total: 8.31s    remaining: 2.41s
155:    learn: 0.4125177    total: 8.37s    remaining: 2.36s
156:    learn: 0.4123620    total: 8.41s    remaining: 2.3s
157:    learn: 0.4122524    total: 8.47s    remaining: 2.25s
158:    learn: 0.4121075    total: 8.51s    remaining: 2.19s
159:    learn: 0.4119479    total: 8.56s    remaining: 2.14s
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160:    learn: 0.4117491    total: 8.6s     remaining: 2.08s
161:    learn: 0.4116659    total: 8.66s    remaining: 2.03s
162:    learn: 0.4115441    total: 8.73s    remaining: 1.98s
163:    learn: 0.4115409    total: 8.77s    remaining: 1.93s
164:    learn: 0.4112603    total: 8.84s    remaining: 1.88s
165:    learn: 0.4110552    total: 8.9s     remaining: 1.82s
166:    learn: 0.4108728    total: 8.95s    remaining: 1.77s
167:    learn: 0.4106070    total: 9.01s    remaining: 1.72s
168:    learn: 0.4105414    total: 9.06s    remaining: 1.66s
169:    learn: 0.4102638    total: 9.12s    remaining: 1.61s
170:    learn: 0.4100647    total: 9.16s    remaining: 1.55s
171:    learn: 0.4099877    total: 9.23s    remaining: 1.5s
172:    learn: 0.4099535    total: 9.29s    remaining: 1.45s
173:    learn: 0.4097836    total: 9.35s    remaining: 1.4s
174:    learn: 0.4096261    total: 9.4s     remaining: 1.34s
175:    learn: 0.4092773    total: 9.46s    remaining: 1.29s
176:    learn: 0.4092183    total: 9.52s    remaining: 1.24s
177:    learn: 0.4088311    total: 9.6s     remaining: 1.19s
178:    learn: 0.4087040    total: 9.66s    remaining: 1.13s
179:    learn: 0.4083615    total: 9.72s    remaining: 1.08s
180:    learn: 0.4081225    total: 9.77s    remaining: 1.02s
181:    learn: 0.4080364    total: 9.84s    remaining: 973ms
182:    learn: 0.4077147    total: 9.91s    remaining: 921ms
183:    learn: 0.4077069    total: 9.97s    remaining: 867ms
184:    learn: 0.4075782    total: 10s      remaining: 812ms
185:    learn: 0.4075001    total: 10.1s    remaining: 757ms
186:    learn: 0.4071166    total: 10.1s    remaining: 703ms
187:    learn: 0.4068830    total: 10.2s    remaining: 649ms
188:    learn: 0.4067241    total: 10.2s    remaining: 595ms
189:    learn: 0.4066961    total: 10.3s    remaining: 540ms
190:    learn: 0.4064733    total: 10.3s    remaining: 486ms
191:    learn: 0.4063243    total: 10.4s    remaining: 432ms
192:    learn: 0.4062182    total: 10.4s    remaining: 378ms
193:    learn: 0.4060437    total: 10.5s    remaining: 324ms
194:    learn: 0.4059696    total: 10.5s    remaining: 270ms
195:    learn: 0.4057388    total: 10.6s    remaining: 216ms
196:    learn: 0.4054853    total: 10.6s    remaining: 162ms
197:    learn: 0.4054823    total: 10.7s    remaining: 108ms
198:    learn: 0.4053362    total: 10.7s    remaining: 53.9ms
199:    learn: 0.4052517    total: 10.8s    remaining: 0us
0:      learn: 0.6358827    total: 42.9ms   remaining: 8.53s
1:      learn: 0.6029574    total: 101ms    remaining: 10s
2:      learn: 0.5750766    total: 150ms    remaining: 9.85s
3:      learn: 0.5462336    total: 198ms    remaining: 9.72s
4:      learn: 0.5299120    total: 262ms    remaining: 10.2s
5:      learn: 0.5181659    total: 298ms    remaining: 9.64s
6:      learn: 0.5055938    total: 341ms    remaining: 9.41s
7:      learn: 0.4977076    total: 382ms    remaining: 9.17s
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8:      learn: 0.4902494      total: 433ms    remaining: 9.19s
9:      learn: 0.4849476      total: 491ms    remaining: 9.33s
10:     learn: 0.4798450      total: 546ms    remaining: 9.38s
11:     learn: 0.4750009      total: 611ms    remaining: 9.57s
12:     learn: 0.4696487      total: 662ms    remaining: 9.52s
13:     learn: 0.4672235      total: 716ms    remaining: 9.51s
14:     learn: 0.4648822      total: 777ms    remaining: 9.58s
15:     learn: 0.4633697      total: 824ms    remaining: 9.48s
16:     learn: 0.4611356      total: 871ms    remaining: 9.38s
17:     learn: 0.4591843      total: 937ms    remaining: 9.47s
18:     learn: 0.4569948      total: 998ms    remaining: 9.51s
19:     learn: 0.4565393      total: 1.03s    remaining: 9.25s
20:     learn: 0.4547793      total: 1.07s    remaining: 9.11s
21:     learn: 0.4532895      total: 1.13s    remaining: 9.13s
22:     learn: 0.4521147      total: 1.17s    remaining: 9.04s
23:     learn: 0.4503333      total: 1.22s    remaining: 8.94s
24:     learn: 0.4492808      total: 1.27s    remaining: 8.89s
25:     learn: 0.4484720      total: 1.31s    remaining: 8.77s
26:     learn: 0.4475168      total: 1.35s    remaining: 8.69s
27:     learn: 0.4469930      total: 1.39s    remaining: 8.56s
28:     learn: 0.4463322      total: 1.45s    remaining: 8.57s
29:     learn: 0.4456676      total: 1.51s    remaining: 8.54s
30:     learn: 0.4450830      total: 1.56s    remaining: 8.5s
31:     learn: 0.4441784      total: 1.61s    remaining: 8.44s
32:     learn: 0.4437404      total: 1.66s    remaining: 8.4s
33:     learn: 0.4428755      total: 1.73s    remaining: 8.43s
34:     learn: 0.4419659      total: 1.79s    remaining: 8.44s
35:     learn: 0.4413927      total: 1.84s    remaining: 8.4s
36:     learn: 0.4409619      total: 1.89s    remaining: 8.35s
37:     learn: 0.4406860      total: 1.94s    remaining: 8.26s
38:     learn: 0.4402133      total: 1.98s    remaining: 8.17s
39:     learn: 0.4395738      total: 2.03s    remaining: 8.13s
40:     learn: 0.4390488      total: 2.1s     remaining: 8.14s
41:     learn: 0.4387641      total: 2.14s    remaining: 8.05s
42:     learn: 0.4384726      total: 2.18s    remaining: 7.96s
43:     learn: 0.4379838      total: 2.23s    remaining: 7.91s
44:     learn: 0.4377990      total: 2.28s    remaining: 7.86s
45:     learn: 0.4372826      total: 2.34s    remaining: 7.83s
46:     learn: 0.4372761      total: 2.39s    remaining: 7.77s
47:     learn: 0.4365023      total: 2.43s    remaining: 7.71s
48:     learn: 0.4359602      total: 2.48s    remaining: 7.65s
49:     learn: 0.4359473      total: 2.51s    remaining: 7.52s
50:     learn: 0.4358445      total: 2.58s    remaining: 7.53s
51:     learn: 0.4356890      total: 2.63s    remaining: 7.47s
52:     learn: 0.4353674      total: 2.69s    remaining: 7.46s
53:     learn: 0.4350039      total: 2.74s    remaining: 7.4s
54:     learn: 0.4347483      total: 2.8s     remaining: 7.38s
55:     learn: 0.4337884      total: 2.87s    remaining: 7.37s
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56:      learn: 0.4334738      total: 2.92s      remaining: 7.33s
57:      learn: 0.4330441      total: 2.96s      remaining: 7.25s
58:      learn: 0.4328907      total: 3s         remaining: 7.18s
59:      learn: 0.4328833      total: 3.07s      remaining: 7.16s
60:      learn: 0.4323228      total: 3.13s      remaining: 7.14s
61:      learn: 0.4322433      total: 3.19s      remaining: 7.1s
62:      learn: 0.4321479      total: 3.25s      remaining: 7.07s
63:      learn: 0.4320655      total: 3.3s       remaining: 7.01s
64:      learn: 0.4318725      total: 3.35s      remaining: 6.95s
65:      learn: 0.4314398      total: 3.4s       remaining: 6.9s
66:      learn: 0.4307162      total: 3.48s      remaining: 6.91s
67:      learn: 0.4304160      total: 3.52s      remaining: 6.83s
68:      learn: 0.4302183      total: 3.58s      remaining: 6.79s
69:      learn: 0.4300652      total: 3.64s      remaining: 6.76s
70:      learn: 0.4298333      total: 3.68s      remaining: 6.69s
71:      learn: 0.4293842      total: 3.73s      remaining: 6.64s
72:      learn: 0.4291930      total: 3.79s      remaining: 6.59s
73:      learn: 0.4288007      total: 3.83s      remaining: 6.53s
74:      learn: 0.4286482      total: 3.87s      remaining: 6.46s
75:      learn: 0.4284299      total: 3.92s      remaining: 6.39s
76:      learn: 0.4274886      total: 3.98s      remaining: 6.36s
77:      learn: 0.4273285      total: 4.04s      remaining: 6.32s
78:      learn: 0.4271247      total: 4.1s       remaining: 6.29s
79:      learn: 0.4266826      total: 4.17s      remaining: 6.25s
80:      learn: 0.4265058      total: 4.22s      remaining: 6.2s
81:      learn: 0.4263087      total: 4.27s      remaining: 6.14s
82:      learn: 0.4261631      total: 4.31s      remaining: 6.08s
83:      learn: 0.4255347      total: 4.36s      remaining: 6.02s
84:      learn: 0.4253088      total: 4.41s      remaining: 5.97s
85:      learn: 0.4250607      total: 4.46s      remaining: 5.91s
86:      learn: 0.4248149      total: 4.53s      remaining: 5.88s
87:      learn: 0.4246927      total: 4.58s      remaining: 5.83s
88:      learn: 0.4245596      total: 4.64s      remaining: 5.78s
89:      learn: 0.4245055      total: 4.68s      remaining: 5.72s
90:      learn: 0.4243197      total: 4.74s      remaining: 5.67s
91:      learn: 0.4240497      total: 4.81s      remaining: 5.65s
92:      learn: 0.4239139      total: 4.87s      remaining: 5.6s
93:      learn: 0.4238481      total: 4.93s      remaining: 5.56s
94:      learn: 0.4236894      total: 4.99s      remaining: 5.52s
95:      learn: 0.4234030      total: 5.04s      remaining: 5.46s
96:      learn: 0.4231631      total: 5.09s      remaining: 5.4s
97:      learn: 0.4229189      total: 5.15s      remaining: 5.36s
98:      learn: 0.4227302      total: 5.2s       remaining: 5.3s
99:      learn: 0.4224138      total: 5.25s      remaining: 5.25s
100:     learn: 0.4220390      total: 5.29s      remaining: 5.18s
101:     learn: 0.4220323      total: 5.34s      remaining: 5.13s
102:     learn: 0.4219098      total: 5.39s      remaining: 5.07s
103:     learn: 0.4217145      total: 5.43s      remaining: 5.01s
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104:    learn: 0.4216521    total: 5.47s    remaining: 4.95s
105:    learn: 0.4214480    total: 5.51s    remaining: 4.89s
106:    learn: 0.4209756    total: 5.56s    remaining: 4.83s
107:    learn: 0.4209736    total: 5.62s    remaining: 4.79s
108:    learn: 0.4206351    total: 5.67s    remaining: 4.73s
109:    learn: 0.4197816    total: 5.71s    remaining: 4.67s
110:    learn: 0.4192054    total: 5.76s    remaining: 4.62s
111:    learn: 0.4190375    total: 5.81s    remaining: 4.57s
112:    learn: 0.4186875    total: 5.86s    remaining: 4.51s
113:    learn: 0.4180818    total: 5.91s    remaining: 4.46s
114:    learn: 0.4179473    total: 5.97s    remaining: 4.41s
115:    learn: 0.4176062    total: 6.01s    remaining: 4.35s
116:    learn: 0.4174468    total: 6.06s    remaining: 4.3s
117:    learn: 0.4173521    total: 6.1s     remaining: 4.24s
118:    learn: 0.4170114    total: 6.15s    remaining: 4.18s
119:    learn: 0.4169163    total: 6.21s    remaining: 4.14s
120:    learn: 0.4165767    total: 6.28s    remaining: 4.1s
121:    learn: 0.4160284    total: 6.33s    remaining: 4.04s
122:    learn: 0.4157628    total: 6.37s    remaining: 3.99s
123:    learn: 0.4155854    total: 6.42s    remaining: 3.94s
124:    learn: 0.4153414    total: 6.47s    remaining: 3.88s
125:    learn: 0.4153363    total: 6.53s    remaining: 3.84s
126:    learn: 0.4149029    total: 6.6s     remaining: 3.8s
127:    learn: 0.4143509    total: 6.66s    remaining: 3.74s
128:    learn: 0.4141291    total: 6.72s    remaining: 3.7s
129:    learn: 0.4135181    total: 6.77s    remaining: 3.64s
130:    learn: 0.4130972    total: 6.84s    remaining: 3.6s
131:    learn: 0.4129170    total: 6.89s    remaining: 3.55s
132:    learn: 0.4129169    total: 6.95s    remaining: 3.5s
133:    learn: 0.4127859    total: 7s       remaining: 3.44s
134:    learn: 0.4126970    total: 7.04s    remaining: 3.39s
135:    learn: 0.4124989    total: 7.09s    remaining: 3.34s
136:    learn: 0.4123669    total: 7.15s    remaining: 3.29s
137:    learn: 0.4123657    total: 7.2s     remaining: 3.23s
138:    learn: 0.4122957    total: 7.25s    remaining: 3.18s
139:    learn: 0.4120011    total: 7.29s    remaining: 3.13s
140:    learn: 0.4118622    total: 7.36s    remaining: 3.08s
141:    learn: 0.4117078    total: 7.4s     remaining: 3.02s
142:    learn: 0.4113660    total: 7.45s    remaining: 2.97s
143:    learn: 0.4111527    total: 7.5s     remaining: 2.92s
144:    learn: 0.4106904    total: 7.55s    remaining: 2.86s
145:    learn: 0.4105060    total: 7.62s    remaining: 2.82s
146:    learn: 0.4104588    total: 7.66s    remaining: 2.76s
147:    learn: 0.4103663    total: 7.71s    remaining: 2.71s
148:    learn: 0.4101539    total: 7.76s    remaining: 2.65s
149:    learn: 0.4098190    total: 7.81s    remaining: 2.6s
150:    learn: 0.4097059    total: 7.86s    remaining: 2.55s
151:    learn: 0.4095708    total: 7.91s    remaining: 2.5s
```

```
152:	learn: 0.4093878	total: 7.96s	remaining: 2.45s
153:	learn: 0.4091306	total: 8.02s	remaining: 2.4s
154:	learn: 0.4090391	total: 8.09s	remaining: 2.35s
155:	learn: 0.4089519	total: 8.16s	remaining: 2.3s
156:	learn: 0.4089210	total: 8.22s	remaining: 2.25s
157:	learn: 0.4086255	total: 8.27s	remaining: 2.2s
158:	learn: 0.4081460	total: 8.33s	remaining: 2.15s
159:	learn: 0.4081356	total: 8.38s	remaining: 2.09s
160:	learn: 0.4079965	total: 8.42s	remaining: 2.04s
161:	learn: 0.4079937	total: 8.46s	remaining: 1.99s
162:	learn: 0.4078060	total: 8.51s	remaining: 1.93s
163:	learn: 0.4077888	total: 8.56s	remaining: 1.88s
164:	learn: 0.4076931	total: 8.61s	remaining: 1.83s
165:	learn: 0.4075206	total: 8.66s	remaining: 1.77s
166:	learn: 0.4072990	total: 8.71s	remaining: 1.72s
167:	learn: 0.4072277	total: 8.77s	remaining: 1.67s
168:	learn: 0.4071200	total: 8.81s	remaining: 1.61s
169:	learn: 0.4071004	total: 8.84s	remaining: 1.56s
170:	learn: 0.4070279	total: 8.89s	remaining: 1.51s
171:	learn: 0.4068319	total: 8.96s	remaining: 1.46s
172:	learn: 0.4067369	total: 9.02s	remaining: 1.41s
173:	learn: 0.4066748	total: 9.09s	remaining: 1.36s
174:	learn: 0.4064582	total: 9.15s	remaining: 1.31s
175:	learn: 0.4063540	total: 9.21s	remaining: 1.25s
176:	learn: 0.4061161	total: 9.26s	remaining: 1.2s
177:	learn: 0.4060296	total: 9.31s	remaining: 1.15s
178:	learn: 0.4059357	total: 9.36s	remaining: 1.1s
179:	learn: 0.4057250	total: 9.42s	remaining: 1.05s
180:	learn: 0.4056317	total: 9.47s	remaining: 994ms
181:	learn: 0.4054848	total: 9.51s	remaining: 941ms
182:	learn: 0.4053024	total: 9.58s	remaining: 890ms
183:	learn: 0.4052353	total: 9.62s	remaining: 836ms
184:	learn: 0.4051261	total: 9.67s	remaining: 784ms
185:	learn: 0.4048974	total: 9.72s	remaining: 732ms
186:	learn: 0.4046927	total: 9.78s	remaining: 680ms
187:	learn: 0.4044464	total: 9.83s	remaining: 627ms
188:	learn: 0.4042705	total: 9.91s	remaining: 577ms
189:	learn: 0.4042307	total: 9.95s	remaining: 524ms
190:	learn: 0.4041581	total: 10s	remaining: 472ms
191:	learn: 0.4039225	total: 10.1s	remaining: 420ms
192:	learn: 0.4038170	total: 10.1s	remaining: 368ms
193:	learn: 0.4036566	total: 10.2s	remaining: 315ms
194:	learn: 0.4036280	total: 10.2s	remaining: 263ms
195:	learn: 0.4035906	total: 10.3s	remaining: 210ms
196:	learn: 0.4033721	total: 10.3s	remaining: 157ms
197:	learn: 0.4033035	total: 10.4s	remaining: 105ms
198:	learn: 0.4028508	total: 10.5s	remaining: 52.6ms
199:	learn: 0.4026744	total: 10.5s	remaining: 0us
```

```
0:      learn: 0.6346230      total: 54.1ms    remaining: 10.8s
1:      learn: 0.6026597      total: 99.1ms    remaining: 9.81s
2:      learn: 0.5702739      total: 141ms     remaining: 9.25s
3:      learn: 0.5452037      total: 186ms     remaining: 9.11s
4:      learn: 0.5300375      total: 229ms     remaining: 8.94s
5:      learn: 0.5183466      total: 284ms     remaining: 9.17s
6:      learn: 0.5075816      total: 336ms     remaining: 9.26s
7:      learn: 0.4970951      total: 391ms     remaining: 9.38s
8:      learn: 0.4901204      total: 439ms     remaining: 9.31s
9:      learn: 0.4842269      total: 493ms     remaining: 9.36s
10:     learn: 0.4789861      total: 582ms     remaining: 10s
11:     learn: 0.4755504      total: 628ms     remaining: 9.83s
12:     learn: 0.4706708      total: 678ms     remaining: 9.75s
13:     learn: 0.4679403      total: 719ms     remaining: 9.56s
14:     learn: 0.4653868      total: 765ms     remaining: 9.44s
15:     learn: 0.4623787      total: 812ms     remaining: 9.34s
16:     learn: 0.4610027      total: 858ms     remaining: 9.23s
17:     learn: 0.4598571      total: 902ms     remaining: 9.12s
18:     learn: 0.4573943      total: 956ms     remaining: 9.1s
19:     learn: 0.4551033      total: 1s        remaining: 9.03s
20:     learn: 0.4534262      total: 1.06s     remaining: 9.06s
21:     learn: 0.4522542      total: 1.11s     remaining: 9s
22:     learn: 0.4516941      total: 1.16s     remaining: 8.92s
23:     learn: 0.4508788      total: 1.2s      remaining: 8.83s
24:     learn: 0.4504748      total: 1.25s     remaining: 8.78s
25:     learn: 0.4498320      total: 1.3s      remaining: 8.71s
26:     learn: 0.4488432      total: 1.35s     remaining: 8.66s
27:     learn: 0.4483479      total: 1.4s      remaining: 8.63s
28:     learn: 0.4478657      total: 1.46s     remaining: 8.59s
29:     learn: 0.4471833      total: 1.51s     remaining: 8.54s
30:     learn: 0.4463917      total: 1.56s     remaining: 8.49s
31:     learn: 0.4460576      total: 1.61s     remaining: 8.44s
32:     learn: 0.4450965      total: 1.66s     remaining: 8.41s
33:     learn: 0.4444269      total: 1.71s     remaining: 8.34s
34:     learn: 0.4440605      total: 1.75s     remaining: 8.27s
35:     learn: 0.4435339      total: 1.8s      remaining: 8.21s
36:     learn: 0.4433111      total: 1.85s     remaining: 8.15s
37:     learn: 0.4429733      total: 1.9s      remaining: 8.12s
38:     learn: 0.4426514      total: 1.95s     remaining: 8.05s
39:     learn: 0.4422726      total: 2.02s     remaining: 8.09s
40:     learn: 0.4418625      total: 2.08s     remaining: 8.09s
41:     learn: 0.4416244      total: 2.13s     remaining: 8.03s
42:     learn: 0.4413474      total: 2.18s     remaining: 7.96s
43:     learn: 0.4408738      total: 2.23s     remaining: 7.9s
44:     learn: 0.4405197      total: 2.29s     remaining: 7.88s
45:     learn: 0.4403683      total: 2.33s     remaining: 7.81s
46:     learn: 0.4397468      total: 2.38s     remaining: 7.76s
47:     learn: 0.4393965      total: 2.43s     remaining: 7.7s
```

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48:     learn: 0.4391982     total: 2.48s     remaining: 7.63s
49:     learn: 0.4390445     total: 2.54s     remaining: 7.61s
50:     learn: 0.4387403     total: 2.6s      remaining: 7.59s
51:     learn: 0.4385801     total: 2.64s     remaining: 7.52s
52:     learn: 0.4384588     total: 2.71s     remaining: 7.51s
53:     learn: 0.4381128     total: 2.78s     remaining: 7.51s
54:     learn: 0.4379989     total: 2.83s     remaining: 7.46s
55:     learn: 0.4372015     total: 2.91s     remaining: 7.49s
56:     learn: 0.4371069     total: 2.96s     remaining: 7.42s
57:     learn: 0.4369275     total: 3.04s     remaining: 7.44s
58:     learn: 0.4367341     total: 3.08s     remaining: 7.37s
59:     learn: 0.4364763     total: 3.13s     remaining: 7.31s
60:     learn: 0.4363609     total: 3.19s     remaining: 7.26s
61:     learn: 0.4360803     total: 3.25s     remaining: 7.22s
62:     learn: 0.4356823     total: 3.29s     remaining: 7.17s
63:     learn: 0.4354221     total: 3.35s     remaining: 7.12s
64:     learn: 0.4352498     total: 3.41s     remaining: 7.09s
65:     learn: 0.4348802     total: 3.48s     remaining: 7.06s
66:     learn: 0.4347497     total: 3.53s     remaining: 7.01s
67:     learn: 0.4341720     total: 3.58s     remaining: 6.96s
68:     learn: 0.4340157     total: 3.65s     remaining: 6.92s
69:     learn: 0.4338236     total: 3.69s     remaining: 6.85s
70:     learn: 0.4335487     total: 3.76s     remaining: 6.83s
71:     learn: 0.4334347     total: 3.82s     remaining: 6.79s
72:     learn: 0.4328258     total: 3.88s     remaining: 6.75s
73:     learn: 0.4323301     total: 3.93s     remaining: 6.69s
74:     learn: 0.4319968     total: 3.97s     remaining: 6.62s
75:     learn: 0.4317617     total: 4.04s     remaining: 6.59s
76:     learn: 0.4315879     total: 4.08s     remaining: 6.51s
77:     learn: 0.4309950     total: 4.13s     remaining: 6.46s
78:     learn: 0.4308163     total: 4.2s      remaining: 6.43s
79:     learn: 0.4307139     total: 4.26s     remaining: 6.39s
80:     learn: 0.4304341     total: 4.32s     remaining: 6.35s
81:     learn: 0.4302875     total: 4.37s     remaining: 6.29s
82:     learn: 0.4300973     total: 4.43s     remaining: 6.25s
83:     learn: 0.4299372     total: 4.49s     remaining: 6.2s
84:     learn: 0.4298223     total: 4.55s     remaining: 6.16s
85:     learn: 0.4297397     total: 4.6s      remaining: 6.09s
86:     learn: 0.4295411     total: 4.64s     remaining: 6.03s
87:     learn: 0.4289754     total: 4.69s     remaining: 5.97s
88:     learn: 0.4288079     total: 4.73s     remaining: 5.9s
89:     learn: 0.4283151     total: 4.78s     remaining: 5.84s
90:     learn: 0.4277179     total: 4.83s     remaining: 5.79s
91:     learn: 0.4275225     total: 4.89s     remaining: 5.75s
92:     learn: 0.4272165     total: 4.94s     remaining: 5.69s
93:     learn: 0.4267097     total: 5.01s     remaining: 5.65s
94:     learn: 0.4265591     total: 5.06s     remaining: 5.59s
95:     learn: 0.4261232     total: 5.13s     remaining: 5.56s
```

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96:     learn: 0.4257390     total: 5.18s     remaining: 5.5s
97:     learn: 0.4251551     total: 5.23s     remaining: 5.44s
98:     learn: 0.4249640     total: 5.29s     remaining: 5.4s
99:     learn: 0.4249158     total: 5.35s     remaining: 5.35s
100:    learn: 0.4247138     total: 5.42s     remaining: 5.31s
101:    learn: 0.4244729     total: 5.48s     remaining: 5.26s
102:    learn: 0.4242733     total: 5.54s     remaining: 5.21s
103:    learn: 0.4242405     total: 5.59s     remaining: 5.17s
104:    learn: 0.4240043     total: 5.64s     remaining: 5.11s
105:    learn: 0.4238034     total: 5.69s     remaining: 5.04s
106:    learn: 0.4238034     total: 5.71s     remaining: 4.97s
107:    learn: 0.4237237     total: 5.77s     remaining: 4.92s
108:    learn: 0.4235292     total: 5.82s     remaining: 4.86s
109:    learn: 0.4230940     total: 5.88s     remaining: 4.81s
110:    learn: 0.4226369     total: 5.93s     remaining: 4.76s
111:    learn: 0.4225030     total: 6.01s     remaining: 4.72s
112:    learn: 0.4222889     total: 6.08s     remaining: 4.68s
113:    learn: 0.4220097     total: 6.13s     remaining: 4.63s
114:    learn: 0.4218991     total: 6.19s     remaining: 4.58s
115:    learn: 0.4217790     total: 6.25s     remaining: 4.53s
116:    learn: 0.4213348     total: 6.32s     remaining: 4.48s
117:    learn: 0.4211455     total: 6.38s     remaining: 4.43s
118:    learn: 0.4209116     total: 6.43s     remaining: 4.38s
119:    learn: 0.4205540     total: 6.48s     remaining: 4.32s
120:    learn: 0.4199272     total: 6.55s     remaining: 4.28s
121:    learn: 0.4196858     total: 6.62s     remaining: 4.23s
122:    learn: 0.4193753     total: 6.69s     remaining: 4.18s
123:    learn: 0.4191740     total: 6.74s     remaining: 4.13s
124:    learn: 0.4189897     total: 6.79s     remaining: 4.07s
125:    learn: 0.4187778     total: 6.84s     remaining: 4.01s
126:    learn: 0.4185311     total: 6.91s     remaining: 3.97s
127:    learn: 0.4182347     total: 6.97s     remaining: 3.92s
128:    learn: 0.4179767     total: 7.01s     remaining: 3.86s
129:    learn: 0.4177952     total: 7.06s     remaining: 3.8s
130:    learn: 0.4173176     total: 7.12s     remaining: 3.75s
131:    learn: 0.4170073     total: 7.18s     remaining: 3.7s
132:    learn: 0.4168556     total: 7.25s     remaining: 3.65s
133:    learn: 0.4167214     total: 7.3s      remaining: 3.6s
134:    learn: 0.4164764     total: 7.37s     remaining: 3.55s
135:    learn: 0.4162188     total: 7.42s     remaining: 3.49s
136:    learn: 0.4160892     total: 7.47s     remaining: 3.44s
137:    learn: 0.4159678     total: 7.54s     remaining: 3.39s
138:    learn: 0.4157500     total: 7.61s     remaining: 3.34s
139:    learn: 0.4156074     total: 7.68s     remaining: 3.29s
140:    learn: 0.4153097     total: 7.74s     remaining: 3.24s
141:    learn: 0.4150355     total: 7.81s     remaining: 3.19s
142:    learn: 0.4146967     total: 7.88s     remaining: 3.14s
143:    learn: 0.4145356     total: 7.94s     remaining: 3.09s
```

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144:    learn: 0.4142201      total: 7.99s    remaining: 3.03s
145:    learn: 0.4139211      total: 8.04s    remaining: 2.97s
146:    learn: 0.4135143      total: 8.1s     remaining: 2.92s
147:    learn: 0.4132259      total: 8.15s    remaining: 2.87s
148:    learn: 0.4130912      total: 8.21s    remaining: 2.81s
149:    learn: 0.4128379      total: 8.25s    remaining: 2.75s
150:    learn: 0.4126768      total: 8.3s     remaining: 2.69s
151:    learn: 0.4123181      total: 8.37s    remaining: 2.64s
152:    learn: 0.4121607      total: 8.43s    remaining: 2.59s
153:    learn: 0.4120541      total: 8.48s    remaining: 2.53s
154:    learn: 0.4120301      total: 8.53s    remaining: 2.48s
155:    learn: 0.4118775      total: 8.59s    remaining: 2.42s
156:    learn: 0.4117140      total: 8.65s    remaining: 2.37s
157:    learn: 0.4116244      total: 8.7s     remaining: 2.31s
158:    learn: 0.4114774      total: 8.74s    remaining: 2.25s
159:    learn: 0.4112969      total: 8.81s    remaining: 2.2s
160:    learn: 0.4112565      total: 8.86s    remaining: 2.15s
161:    learn: 0.4110621      total: 8.92s    remaining: 2.09s
162:    learn: 0.4107863      total: 8.97s    remaining: 2.04s
163:    learn: 0.4105172      total: 9.02s    remaining: 1.98s
164:    learn: 0.4104526      total: 9.07s    remaining: 1.92s
165:    learn: 0.4102551      total: 9.12s    remaining: 1.87s
166:    learn: 0.4101094      total: 9.17s    remaining: 1.81s
167:    learn: 0.4097884      total: 9.23s    remaining: 1.76s
168:    learn: 0.4097488      total: 9.3s     remaining: 1.71s
169:    learn: 0.4095501      total: 9.36s    remaining: 1.65s
170:    learn: 0.4094123      total: 9.41s    remaining: 1.6s
171:    learn: 0.4093866      total: 9.48s    remaining: 1.54s
172:    learn: 0.4093420      total: 9.53s    remaining: 1.49s
173:    learn: 0.4091315      total: 9.6s     remaining: 1.43s
174:    learn: 0.4089235      total: 9.65s    remaining: 1.38s
175:    learn: 0.4085913      total: 9.72s    remaining: 1.32s
176:    learn: 0.4084476      total: 9.77s    remaining: 1.27s
177:    learn: 0.4081573      total: 9.83s    remaining: 1.22s
178:    learn: 0.4080637      total: 9.89s    remaining: 1.16s
179:    learn: 0.4078891      total: 9.94s    remaining: 1.1s
180:    learn: 0.4076699      total: 9.99s    remaining: 1.05s
181:    learn: 0.4073831      total: 10s      remaining: 993ms
182:    learn: 0.4073823      total: 10.1s    remaining: 938ms
183:    learn: 0.4072148      total: 10.1s    remaining: 882ms
184:    learn: 0.4070626      total: 10.2s    remaining: 826ms
185:    learn: 0.4069081      total: 10.2s    remaining: 771ms
186:    learn: 0.4067964      total: 10.3s    remaining: 716ms
187:    learn: 0.4066555      total: 10.4s    remaining: 661ms
188:    learn: 0.4065040      total: 10.4s    remaining: 607ms
189:    learn: 0.4063091      total: 10.5s    remaining: 551ms
190:    learn: 0.4061505      total: 10.5s    remaining: 496ms
191:    learn: 0.4060275      total: 10.6s    remaining: 442ms
```

```
192:    learn: 0.4059002    total: 10.7s    remaining: 386ms
193:    learn: 0.4058989    total: 10.7s    remaining: 331ms
194:    learn: 0.4058514    total: 10.8s    remaining: 276ms
195:    learn: 0.4054411    total: 10.8s    remaining: 221ms
196:    learn: 0.4052409    total: 10.9s    remaining: 166ms
197:    learn: 0.4049228    total: 10.9s    remaining: 110ms
198:    learn: 0.4048464    total: 11s      remaining: 55.2ms
199:    learn: 0.4047920    total: 11s      remaining: 0us
```
Mean train f1-score of data (CV) 23 is : 0.8111408945797972
Mean test f1-score of data (CV) 23 is : 0.801025953351664

Shape of data 24 is :
(27302, 10)
Distribution of 24 is :
Yes   14101
No   13201
Name: TIMELY_RESPONSE, dtype: int64

<IPython.core.display.HTML object>

MetricVisualizer(layout=Layout(align_self='stretch', height='500px'))

Train f1_score [Yes]: for data 24 is : 0.8176615531356808
Train f1_score [No]: for data 24 is : 0.8209071746428294

	precision	recall	f1-score	support
No	0.77	0.83	0.80	924
Yes	0.83	0.77	0.80	988
accuracy			0.80	1912
macro avg	0.80	0.80	0.80	1912
weighted avg	0.80	0.80	0.80	1912
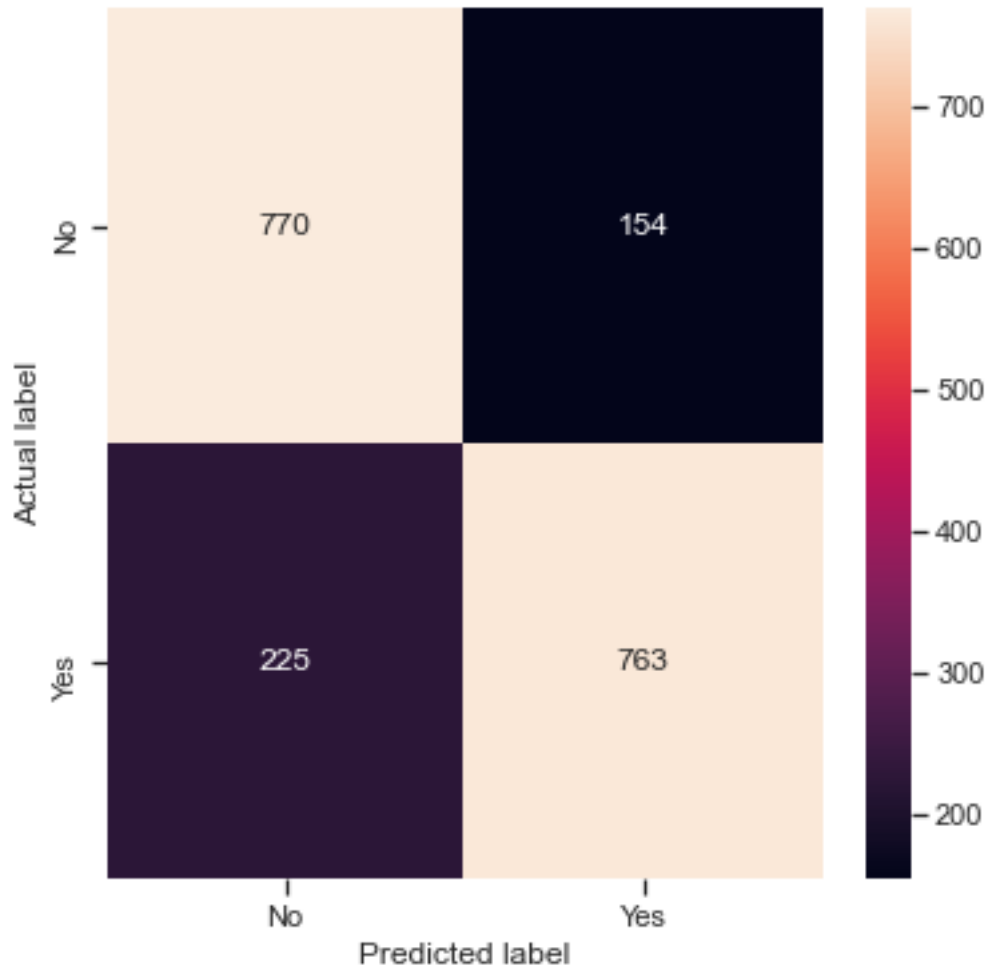
```
Cross validation result for data 24 is :
0:      learn: 0.6324456        total: 58.3ms   remaining: 11.6s
1:      learn: 0.5913309        total: 123ms    remaining: 12.2s
2:      learn: 0.5613757        total: 172ms    remaining: 11.3s
3:      learn: 0.5430441        total: 238ms    remaining: 11.7s
4:      learn: 0.5242621        total: 291ms    remaining: 11.3s
5:      learn: 0.5112702        total: 343ms    remaining: 11.1s
6:      learn: 0.5023403        total: 390ms    remaining: 10.8s
7:      learn: 0.4927482        total: 453ms    remaining: 10.9s
8:      learn: 0.4849057        total: 531ms    remaining: 11.3s
9:      learn: 0.4776414        total: 600ms    remaining: 11.4s
10:     learn: 0.4735294        total: 659ms    remaining: 11.3s
11:     learn: 0.4695328        total: 719ms    remaining: 11.3s
12:     learn: 0.4648023        total: 787ms    remaining: 11.3s
13:     learn: 0.4622429        total: 836ms    remaining: 11.1s
14:     learn: 0.4601501        total: 938ms    remaining: 11.6s
15:     learn: 0.4579241        total: 1.02s    remaining: 11.7s
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16:     learn: 0.4555319     total: 1.09s     remaining: 11.7s
17:     learn: 0.4540118     total: 1.14s     remaining: 11.5s
18:     learn: 0.4524907     total: 1.19s     remaining: 11.3s
19:     learn: 0.4514487     total: 1.24s     remaining: 11.1s
20:     learn: 0.4499818     total: 1.28s     remaining: 11s
21:     learn: 0.4490971     total: 1.33s     remaining: 10.7s
22:     learn: 0.4482107     total: 1.37s     remaining: 10.5s
23:     learn: 0.4471112     total: 1.42s     remaining: 10.4s
24:     learn: 0.4455926     total: 1.51s     remaining: 10.5s
25:     learn: 0.4449025     total: 1.56s     remaining: 10.5s
26:     learn: 0.4439793     total: 1.62s     remaining: 10.4s
27:     learn: 0.4432313     total: 1.69s     remaining: 10.4s
28:     learn: 0.4426455     total: 1.74s     remaining: 10.3s
29:     learn: 0.4421532     total: 1.79s     remaining: 10.2s
30:     learn: 0.4412774     total: 1.86s     remaining: 10.2s
31:     learn: 0.4409347     total: 1.92s     remaining: 10.1s
32:     learn: 0.4401855     total: 1.97s     remaining: 9.99s
33:     learn: 0.4398682     total: 2.05s     remaining: 10s
34:     learn: 0.4397053     total: 2.11s     remaining: 9.94s
35:     learn: 0.4394156     total: 2.18s     remaining: 9.91s
36:     learn: 0.4389794     total: 2.24s     remaining: 9.86s
37:     learn: 0.4387511     total: 2.3s      remaining: 9.8s
38:     learn: 0.4385221     total: 2.35s     remaining: 9.72s
39:     learn: 0.4380774     total: 2.4s      remaining: 9.62s
40:     learn: 0.4376233     total: 2.48s     remaining: 9.61s
41:     learn: 0.4371910     total: 2.53s     remaining: 9.52s
42:     learn: 0.4368515     total: 2.58s     remaining: 9.43s
43:     learn: 0.4366786     total: 2.64s     remaining: 9.36s
44:     learn: 0.4363472     total: 2.69s     remaining: 9.25s
45:     learn: 0.4362102     total: 2.74s     remaining: 9.17s
46:     learn: 0.4356745     total: 2.79s     remaining: 9.07s
47:     learn: 0.4356008     total: 2.83s     remaining: 8.98s
48:     learn: 0.4354142     total: 2.88s     remaining: 8.88s
49:     learn: 0.4351056     total: 2.96s     remaining: 8.89s
50:     learn: 0.4346705     total: 3.02s     remaining: 8.82s
51:     learn: 0.4340882     total: 3.07s     remaining: 8.74s
52:     learn: 0.4331612     total: 3.13s     remaining: 8.67s
53:     learn: 0.4329857     total: 3.2s      remaining: 8.64s
54:     learn: 0.4329410     total: 3.22s     remaining: 8.49s
55:     learn: 0.4327712     total: 3.26s     remaining: 8.39s
56:     learn: 0.4326598     total: 3.32s     remaining: 8.32s
57:     learn: 0.4325461     total: 3.36s     remaining: 8.23s
58:     learn: 0.4320929     total: 3.41s     remaining: 8.14s
59:     learn: 0.4319198     total: 3.47s     remaining: 8.09s
60:     learn: 0.4317181     total: 3.52s     remaining: 8.03s
61:     learn: 0.4312742     total: 3.57s     remaining: 7.96s
62:     learn: 0.4303244     total: 3.65s     remaining: 7.95s
63:     learn: 0.4300565     total: 3.71s     remaining: 7.88s
```

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64:     learn: 0.4297199     total: 3.75s     remaining: 7.79s
65:     learn: 0.4293352     total: 3.8s      remaining: 7.72s
66:     learn: 0.4291605     total: 3.85s     remaining: 7.65s
67:     learn: 0.4289040     total: 3.92s     remaining: 7.61s
68:     learn: 0.4280837     total: 3.97s     remaining: 7.54s
69:     learn: 0.4278744     total: 4.03s     remaining: 7.49s
70:     learn: 0.4277511     total: 4.08s     remaining: 7.42s
71:     learn: 0.4272074     total: 4.13s     remaining: 7.35s
72:     learn: 0.4269374     total: 4.18s     remaining: 7.28s
73:     learn: 0.4263721     total: 4.26s     remaining: 7.25s
74:     learn: 0.4261435     total: 4.33s     remaining: 7.22s
75:     learn: 0.4259582     total: 4.38s     remaining: 7.14s
76:     learn: 0.4258333     total: 4.45s     remaining: 7.11s
77:     learn: 0.4255143     total: 4.51s     remaining: 7.06s
78:     learn: 0.4254183     total: 4.56s     remaining: 6.99s
79:     learn: 0.4251434     total: 4.63s     remaining: 6.95s
80:     learn: 0.4244858     total: 4.69s     remaining: 6.88s
81:     learn: 0.4242482     total: 4.73s     remaining: 6.81s
82:     learn: 0.4241568     total: 4.78s     remaining: 6.74s
83:     learn: 0.4239705     total: 4.83s     remaining: 6.67s
84:     learn: 0.4238926     total: 4.92s     remaining: 6.66s
85:     learn: 0.4237245     total: 4.98s     remaining: 6.61s
86:     learn: 0.4235788     total: 5.05s     remaining: 6.56s
87:     learn: 0.4231135     total: 5.1s      remaining: 6.49s
88:     learn: 0.4230225     total: 5.16s     remaining: 6.44s
89:     learn: 0.4228300     total: 5.22s     remaining: 6.38s
90:     learn: 0.4223457     total: 5.27s     remaining: 6.31s
91:     learn: 0.4218880     total: 5.32s     remaining: 6.24s
92:     learn: 0.4212573     total: 5.38s     remaining: 6.2s
93:     learn: 0.4210126     total: 5.43s     remaining: 6.13s
94:     learn: 0.4208597     total: 5.54s     remaining: 6.12s
95:     learn: 0.4207417     total: 5.59s     remaining: 6.05s
96:     learn: 0.4205134     total: 5.65s     remaining: 6s
97:     learn: 0.4203764     total: 5.71s     remaining: 5.95s
98:     learn: 0.4196424     total: 5.78s     remaining: 5.89s
99:     learn: 0.4188068     total: 5.83s     remaining: 5.83s
100:    learn: 0.4186390     total: 5.88s     remaining: 5.76s
101:    learn: 0.4181528     total: 5.94s     remaining: 5.71s
102:    learn: 0.4176520     total: 5.99s     remaining: 5.64s
103:    learn: 0.4175780     total: 6.05s     remaining: 5.58s
104:    learn: 0.4172467     total: 6.11s     remaining: 5.53s
105:    learn: 0.4169524     total: 6.18s     remaining: 5.49s
106:    learn: 0.4168322     total: 6.24s     remaining: 5.42s
107:    learn: 0.4164522     total: 6.28s     remaining: 5.35s
108:    learn: 0.4163483     total: 6.33s     remaining: 5.28s
109:    learn: 0.4158556     total: 6.38s     remaining: 5.22s
110:    learn: 0.4157686     total: 6.43s     remaining: 5.16s
111:    learn: 0.4153486     total: 6.49s     remaining: 5.1s
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112:    learn: 0.4150441        total: 6.54s     remaining: 5.03s
113:    learn: 0.4149336        total: 6.59s     remaining: 4.97s
114:    learn: 0.4143882        total: 6.64s     remaining: 4.91s
115:    learn: 0.4140927        total: 6.72s     remaining: 4.87s
116:    learn: 0.4137715        total: 6.77s     remaining: 4.8s
117:    learn: 0.4136899        total: 6.82s     remaining: 4.74s
118:    learn: 0.4135059        total: 6.88s     remaining: 4.68s
119:    learn: 0.4134107        total: 6.93s     remaining: 4.62s
120:    learn: 0.4133828        total: 6.98s     remaining: 4.56s
121:    learn: 0.4133477        total: 7.04s     remaining: 4.5s
122:    learn: 0.4131411        total: 7.09s     remaining: 4.44s
123:    learn: 0.4131397        total: 7.13s     remaining: 4.37s
124:    learn: 0.4128897        total: 7.19s     remaining: 4.31s
125:    learn: 0.4125955        total: 7.24s     remaining: 4.25s
126:    learn: 0.4120873        total: 7.29s     remaining: 4.19s
127:    learn: 0.4119391        total: 7.34s     remaining: 4.13s
128:    learn: 0.4118470        total: 7.39s     remaining: 4.07s
129:    learn: 0.4114802        total: 7.45s     remaining: 4.01s
130:    learn: 0.4113473        total: 7.5s      remaining: 3.95s
131:    learn: 0.4111454        total: 7.55s     remaining: 3.89s
132:    learn: 0.4105219        total: 7.61s     remaining: 3.83s
133:    learn: 0.4101425        total: 7.66s     remaining: 3.77s
134:    learn: 0.4098645        total: 7.71s     remaining: 3.71s
135:    learn: 0.4098043        total: 7.76s     remaining: 3.65s
136:    learn: 0.4096409        total: 7.82s     remaining: 3.59s
137:    learn: 0.4094403        total: 7.86s     remaining: 3.53s
138:    learn: 0.4088773        total: 7.92s     remaining: 3.48s
139:    learn: 0.4088048        total: 7.97s     remaining: 3.42s
140:    learn: 0.4086664        total: 8.03s     remaining: 3.36s
141:    learn: 0.4084595        total: 8.09s     remaining: 3.3s
142:    learn: 0.4080273        total: 8.15s     remaining: 3.25s
143:    learn: 0.4079110        total: 8.2s      remaining: 3.19s
144:    learn: 0.4075835        total: 8.27s     remaining: 3.13s
145:    learn: 0.4072752        total: 8.33s     remaining: 3.08s
146:    learn: 0.4068764        total: 8.39s     remaining: 3.02s
147:    learn: 0.4067980        total: 8.44s     remaining: 2.97s
148:    learn: 0.4064679        total: 8.5s      remaining: 2.91s
149:    learn: 0.4062469        total: 8.56s     remaining: 2.85s
150:    learn: 0.4059525        total: 8.6s      remaining: 2.79s
151:    learn: 0.4058119        total: 8.67s     remaining: 2.74s
152:    learn: 0.4056519        total: 8.73s     remaining: 2.68s
153:    learn: 0.4056508        total: 8.77s     remaining: 2.62s
154:    learn: 0.4055536        total: 8.83s     remaining: 2.56s
155:    learn: 0.4055141        total: 8.89s     remaining: 2.51s
156:    learn: 0.4053790        total: 8.94s     remaining: 2.45s
157:    learn: 0.4052443        total: 9.01s     remaining: 2.4s
158:    learn: 0.4051369        total: 9.07s     remaining: 2.34s
159:    learn: 0.4050165        total: 9.13s     remaining: 2.28s
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160:     learn: 0.4047360        total: 9.2s        remaining: 2.23s
161:     learn: 0.4044710        total: 9.25s       remaining: 2.17s
162:     learn: 0.4042403        total: 9.32s       remaining: 2.12s
163:     learn: 0.4040463        total: 9.39s       remaining: 2.06s
164:     learn: 0.4038593        total: 9.45s       remaining: 2s
165:     learn: 0.4037669        total: 9.5s        remaining: 1.95s
166:     learn: 0.4034521        total: 9.55s       remaining: 1.89s
167:     learn: 0.4032591        total: 9.61s       remaining: 1.83s
168:     learn: 0.4030021        total: 9.68s       remaining: 1.77s
169:     learn: 0.4026907        total: 9.72s       remaining: 1.72s
170:     learn: 0.4025225        total: 9.78s       remaining: 1.66s
171:     learn: 0.4022588        total: 9.84s       remaining: 1.6s
172:     learn: 0.4021554        total: 9.92s       remaining: 1.55s
173:     learn: 0.4020973        total: 9.98s       remaining: 1.49s
174:     learn: 0.4018170        total: 10s         remaining: 1.44s
175:     learn: 0.4017336        total: 10.1s       remaining: 1.38s
176:     learn: 0.4014076        total: 10.2s       remaining: 1.32s
177:     learn: 0.4010748        total: 10.2s       remaining: 1.27s
178:     learn: 0.4006525        total: 10.3s       remaining: 1.21s
179:     learn: 0.4004824        total: 10.4s       remaining: 1.15s
180:     learn: 0.4004018        total: 10.4s       remaining: 1.09s
181:     learn: 0.4003761        total: 10.5s       remaining: 1.03s
182:     learn: 0.4002014        total: 10.5s       remaining: 978ms
183:     learn: 0.4001347        total: 10.6s       remaining: 922ms
184:     learn: 0.4000440        total: 10.7s       remaining: 865ms
185:     learn: 0.3999921        total: 10.7s       remaining: 807ms
186:     learn: 0.3998382        total: 10.8s       remaining: 748ms
187:     learn: 0.3997740        total: 10.8s       remaining: 690ms
188:     learn: 0.3996490        total: 10.9s       remaining: 632ms
189:     learn: 0.3995818        total: 10.9s       remaining: 574ms
190:     learn: 0.3995179        total: 10.9s       remaining: 516ms
191:     learn: 0.3993535        total: 11s         remaining: 458ms
192:     learn: 0.3993432        total: 11s         remaining: 400ms
193:     learn: 0.3991497        total: 11.1s       remaining: 343ms
194:     learn: 0.3990032        total: 11.2s       remaining: 287ms
195:     learn: 0.3987749        total: 11.2s       remaining: 229ms
196:     learn: 0.3986419        total: 11.3s       remaining: 172ms
197:     learn: 0.3984890        total: 11.4s       remaining: 115ms
198:     learn: 0.3982782        total: 11.4s       remaining: 57.3ms
199:     learn: 0.3980613        total: 11.5s       remaining: 0us
0:       learn: 0.6342687        total: 48.8ms      remaining: 9.71s
1:       learn: 0.5982604        total: 97.5ms      remaining: 9.66s
2:       learn: 0.5651135        total: 146ms       remaining: 9.58s
3:       learn: 0.5403404        total: 190ms       remaining: 9.32s
4:       learn: 0.5229103        total: 236ms       remaining: 9.2s
5:       learn: 0.5101082        total: 305ms       remaining: 9.85s
6:       learn: 0.4981401        total: 367ms       remaining: 10.1s
7:       learn: 0.4879097        total: 416ms       remaining: 9.98s
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8:      learn: 0.4805232       total: 467ms    remaining: 9.9s
9:      learn: 0.4748655       total: 512ms    remaining: 9.72s
10:     learn: 0.4698645       total: 570ms    remaining: 9.79s
11:     learn: 0.4651892       total: 632ms    remaining: 9.9s
12:     learn: 0.4617028       total: 682ms    remaining: 9.81s
13:     learn: 0.4588248       total: 727ms    remaining: 9.66s
14:     learn: 0.4561242       total: 778ms    remaining: 9.6s
15:     learn: 0.4531746       total: 824ms    remaining: 9.47s
16:     learn: 0.4507477       total: 887ms    remaining: 9.54s
17:     learn: 0.4485518       total: 939ms    remaining: 9.5s
18:     learn: 0.4464663       total: 990ms    remaining: 9.43s
19:     learn: 0.4454401       total: 1.04s    remaining: 9.32s
20:     learn: 0.4442093       total: 1.08s    remaining: 9.22s
21:     learn: 0.4434474       total: 1.14s    remaining: 9.19s
22:     learn: 0.4429213       total: 1.19s    remaining: 9.19s
23:     learn: 0.4414526       total: 1.25s    remaining: 9.13s
24:     learn: 0.4402702       total: 1.29s    remaining: 9.05s
25:     learn: 0.4398509       total: 1.34s    remaining: 8.96s
26:     learn: 0.4387109       total: 1.4s     remaining: 8.95s
27:     learn: 0.4382493       total: 1.45s    remaining: 8.93s
28:     learn: 0.4377323       total: 1.5s     remaining: 8.85s
29:     learn: 0.4372270       total: 1.55s    remaining: 8.77s
30:     learn: 0.4369926       total: 1.59s    remaining: 8.68s
31:     learn: 0.4362304       total: 1.64s    remaining: 8.63s
32:     learn: 0.4359658       total: 1.69s    remaining: 8.56s
33:     learn: 0.4355845       total: 1.75s    remaining: 8.56s
34:     learn: 0.4354517       total: 1.8s     remaining: 8.48s
35:     learn: 0.4341273       total: 1.87s    remaining: 8.5s
36:     learn: 0.4338824       total: 1.92s    remaining: 8.45s
37:     learn: 0.4335975       total: 1.97s    remaining: 8.4s
38:     learn: 0.4333081       total: 2.02s    remaining: 8.34s
39:     learn: 0.4329540       total: 2.06s    remaining: 8.24s
40:     learn: 0.4324345       total: 2.12s    remaining: 8.23s
41:     learn: 0.4316860       total: 2.18s    remaining: 8.2s
42:     learn: 0.4314747       total: 2.23s    remaining: 8.14s
43:     learn: 0.4310836       total: 2.29s    remaining: 8.12s
44:     learn: 0.4308550       total: 2.34s    remaining: 8.06s
45:     learn: 0.4293404       total: 2.4s     remaining: 8.05s
46:     learn: 0.4291886       total: 2.45s    remaining: 7.99s
47:     learn: 0.4286840       total: 2.5s     remaining: 7.93s
48:     learn: 0.4285496       total: 2.56s    remaining: 7.88s
49:     learn: 0.4285228       total: 2.6s     remaining: 7.8s
50:     learn: 0.4283891       total: 2.65s    remaining: 7.73s
51:     learn: 0.4282778       total: 2.7s     remaining: 7.68s
52:     learn: 0.4279451       total: 2.75s    remaining: 7.63s
53:     learn: 0.4271805       total: 2.81s    remaining: 7.59s
54:     learn: 0.4269832       total: 2.87s    remaining: 7.56s
55:     learn: 0.4265682       total: 2.91s    remaining: 7.49s
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56:      learn: 0.4264081       total: 2.96s      remaining: 7.44s
57:      learn: 0.4263829       total: 3.01s      remaining: 7.37s
58:      learn: 0.4260989       total: 3.07s      remaining: 7.33s
59:      learn: 0.4258119       total: 3.13s      remaining: 7.3s
60:      learn: 0.4255736       total: 3.18s      remaining: 7.24s
61:      learn: 0.4252106       total: 3.23s      remaining: 7.19s
62:      learn: 0.4248889       total: 3.28s      remaining: 7.13s
63:      learn: 0.4246012       total: 3.33s      remaining: 7.09s
64:      learn: 0.4245469       total: 3.39s      remaining: 7.03s
65:      learn: 0.4242702       total: 3.44s      remaining: 6.97s
66:      learn: 0.4240058       total: 3.48s      remaining: 6.92s
67:      learn: 0.4233878       total: 3.53s      remaining: 6.86s
68:      learn: 0.4231228       total: 3.61s      remaining: 6.86s
69:      learn: 0.4230453       total: 3.68s      remaining: 6.83s
70:      learn: 0.4227784       total: 3.74s      remaining: 6.8s
71:      learn: 0.4226178       total: 3.82s      remaining: 6.8s
72:      learn: 0.4224948       total: 3.9s       remaining: 6.79s
73:      learn: 0.4221105       total: 3.96s      remaining: 6.74s
74:      learn: 0.4218071       total: 4s         remaining: 6.67s
75:      learn: 0.4214896       total: 4.05s      remaining: 6.61s
76:      learn: 0.4210837       total: 4.1s       remaining: 6.56s
77:      learn: 0.4203447       total: 4.17s      remaining: 6.51s
78:      learn: 0.4200977       total: 4.22s      remaining: 6.46s
79:      learn: 0.4199341       total: 4.27s      remaining: 6.41s
80:      learn: 0.4197912       total: 4.34s      remaining: 6.37s
81:      learn: 0.4195494       total: 4.39s      remaining: 6.31s
82:      learn: 0.4190618       total: 4.44s      remaining: 6.26s
83:      learn: 0.4189548       total: 4.49s      remaining: 6.2s
84:      learn: 0.4188906       total: 4.54s      remaining: 6.14s
85:      learn: 0.4187298       total: 4.59s      remaining: 6.09s
86:      learn: 0.4184693       total: 4.64s      remaining: 6.03s
87:      learn: 0.4181583       total: 4.7s       remaining: 5.98s
88:      learn: 0.4180128       total: 4.75s      remaining: 5.92s
89:      learn: 0.4178590       total: 4.79s      remaining: 5.86s
90:      learn: 0.4173218       total: 4.85s      remaining: 5.81s
91:      learn: 0.4172290       total: 4.9s       remaining: 5.75s
92:      learn: 0.4167581       total: 4.96s      remaining: 5.7s
93:      learn: 0.4167581       total: 4.98s      remaining: 5.62s
94:      learn: 0.4166314       total: 5.03s      remaining: 5.56s
95:      learn: 0.4165161       total: 5.08s      remaining: 5.5s
96:      learn: 0.4164375       total: 5.13s      remaining: 5.44s
97:      learn: 0.4161937       total: 5.17s      remaining: 5.39s
98:      learn: 0.4160808       total: 5.23s      remaining: 5.34s
99:      learn: 0.4156458       total: 5.29s      remaining: 5.29s
100:     learn: 0.4155404       total: 5.34s      remaining: 5.23s
101:     learn: 0.4152303       total: 5.39s      remaining: 5.18s
102:     learn: 0.4148659       total: 5.44s      remaining: 5.12s
103:     learn: 0.4147139       total: 5.49s      remaining: 5.07s
```

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104:    learn: 0.4145407    total: 5.54s    remaining: 5.01s
105:    learn: 0.4139645    total: 5.59s    remaining: 4.96s
106:    learn: 0.4137289    total: 5.64s    remaining: 4.91s
107:    learn: 0.4136123    total: 5.69s    remaining: 4.85s
108:    learn: 0.4134662    total: 5.74s    remaining: 4.79s
109:    learn: 0.4128193    total: 5.78s    remaining: 4.73s
110:    learn: 0.4127344    total: 5.83s    remaining: 4.67s
111:    learn: 0.4122553    total: 5.88s    remaining: 4.62s
112:    learn: 0.4121750    total: 5.93s    remaining: 4.57s
113:    learn: 0.4121687    total: 5.98s    remaining: 4.51s
114:    learn: 0.4119553    total: 6.03s    remaining: 4.46s
115:    learn: 0.4118043    total: 6.09s    remaining: 4.41s
116:    learn: 0.4116868    total: 6.14s    remaining: 4.36s
117:    learn: 0.4112770    total: 6.27s    remaining: 4.36s
118:    learn: 0.4106618    total: 6.35s    remaining: 4.32s
119:    learn: 0.4102529    total: 6.44s    remaining: 4.29s
120:    learn: 0.4102517    total: 6.47s    remaining: 4.22s
121:    learn: 0.4102270    total: 6.53s    remaining: 4.17s
122:    learn: 0.4098010    total: 6.58s    remaining: 4.12s
123:    learn: 0.4096338    total: 6.63s    remaining: 4.07s
124:    learn: 0.4096140    total: 6.7s     remaining: 4.02s
125:    learn: 0.4093245    total: 6.78s    remaining: 3.98s
126:    learn: 0.4088161    total: 6.84s    remaining: 3.93s
127:    learn: 0.4087948    total: 6.89s    remaining: 3.88s
128:    learn: 0.4086432    total: 6.94s    remaining: 3.82s
129:    learn: 0.4084804    total: 6.99s    remaining: 3.76s
130:    learn: 0.4081995    total: 7.05s    remaining: 3.71s
131:    learn: 0.4081507    total: 7.1s     remaining: 3.66s
132:    learn: 0.4080117    total: 7.16s    remaining: 3.6s
133:    learn: 0.4077409    total: 7.22s    remaining: 3.55s
134:    learn: 0.4073535    total: 7.27s    remaining: 3.5s
135:    learn: 0.4072965    total: 7.32s    remaining: 3.44s
136:    learn: 0.4071990    total: 7.37s    remaining: 3.39s
137:    learn: 0.4070277    total: 7.42s    remaining: 3.33s
138:    learn: 0.4070005    total: 7.47s    remaining: 3.28s
139:    learn: 0.4068610    total: 7.53s    remaining: 3.23s
140:    learn: 0.4065498    total: 7.58s    remaining: 3.17s
141:    learn: 0.4065423    total: 7.63s    remaining: 3.12s
142:    learn: 0.4064966    total: 7.68s    remaining: 3.06s
143:    learn: 0.4062238    total: 7.74s    remaining: 3.01s
144:    learn: 0.4061422    total: 7.79s    remaining: 2.95s
145:    learn: 0.4058606    total: 7.85s    remaining: 2.9s
146:    learn: 0.4057789    total: 7.89s    remaining: 2.85s
147:    learn: 0.4053019    total: 7.96s    remaining: 2.8s
148:    learn: 0.4052953    total: 8.02s    remaining: 2.75s
149:    learn: 0.4052894    total: 8.07s    remaining: 2.69s
150:    learn: 0.4050719    total: 8.12s    remaining: 2.64s
151:    learn: 0.4047360    total: 8.17s    remaining: 2.58s
```

```
152:    learn: 0.4043893      total: 8.24s    remaining: 2.53s
153:    learn: 0.4043419      total: 8.31s    remaining: 2.48s
154:    learn: 0.4041080      total: 8.37s    remaining: 2.43s
155:    learn: 0.4041034      total: 8.42s    remaining: 2.38s
156:    learn: 0.4040943      total: 8.47s    remaining: 2.32s
157:    learn: 0.4039959      total: 8.52s    remaining: 2.27s
158:    learn: 0.4038189      total: 8.58s    remaining: 2.21s
159:    learn: 0.4037092      total: 8.64s    remaining: 2.16s
160:    learn: 0.4034463      total: 8.71s    remaining: 2.11s
161:    learn: 0.4032742      total: 8.77s    remaining: 2.06s
162:    learn: 0.4030628      total: 8.82s    remaining: 2s
163:    learn: 0.4028960      total: 8.87s    remaining: 1.95s
164:    learn: 0.4028442      total: 8.92s    remaining: 1.89s
165:    learn: 0.4025750      total: 8.97s    remaining: 1.84s
166:    learn: 0.4024125      total: 9.04s    remaining: 1.79s
167:    learn: 0.4021490      total: 9.1s     remaining: 1.73s
168:    learn: 0.4020460      total: 9.15s    remaining: 1.68s
169:    learn: 0.4019589      total: 9.2s     remaining: 1.62s
170:    learn: 0.4018392      total: 9.25s    remaining: 1.57s
171:    learn: 0.4017752      total: 9.31s    remaining: 1.51s
172:    learn: 0.4016832      total: 9.36s    remaining: 1.46s
173:    learn: 0.4016335      total: 9.4s     remaining: 1.4s
174:    learn: 0.4014918      total: 9.45s    remaining: 1.35s
175:    learn: 0.4012889      total: 9.5s     remaining: 1.29s
176:    learn: 0.4010430      total: 9.56s    remaining: 1.24s
177:    learn: 0.4009285      total: 9.61s    remaining: 1.19s
178:    learn: 0.4008292      total: 9.66s    remaining: 1.13s
179:    learn: 0.4006822      total: 9.71s    remaining: 1.08s
180:    learn: 0.4005758      total: 9.76s    remaining: 1.02s
181:    learn: 0.4003669      total: 9.82s    remaining: 971ms
182:    learn: 0.4002115      total: 9.87s    remaining: 917ms
183:    learn: 0.4000586      total: 9.92s    remaining: 863ms
184:    learn: 0.3996704      total: 9.98s    remaining: 809ms
185:    learn: 0.3995766      total: 10s      remaining: 755ms
186:    learn: 0.3994202      total: 10.1s    remaining: 701ms
187:    learn: 0.3992016      total: 10.1s    remaining: 647ms
188:    learn: 0.3991072      total: 10.2s    remaining: 592ms
189:    learn: 0.3989056      total: 10.2s    remaining: 538ms
190:    learn: 0.3987542      total: 10.3s    remaining: 484ms
191:    learn: 0.3986108      total: 10.3s    remaining: 430ms
192:    learn: 0.3983661      total: 10.4s    remaining: 376ms
193:    learn: 0.3983399      total: 10.4s    remaining: 322ms
194:    learn: 0.3982384      total: 10.5s    remaining: 268ms
195:    learn: 0.3981468      total: 10.5s    remaining: 214ms
196:    learn: 0.3979585      total: 10.6s    remaining: 161ms
197:    learn: 0.3978245      total: 10.6s    remaining: 107ms
198:    learn: 0.3977042      total: 10.7s    remaining: 53.6ms
199:    learn: 0.3976454      total: 10.7s    remaining: 0us
```

```
0:      learn: 0.6321744      total: 48.5ms    remaining: 9.66s
1:      learn: 0.5888056      total: 107ms     remaining: 10.6s
2:      learn: 0.5622385      total: 161ms     remaining: 10.6s
3:      learn: 0.5402032      total: 217ms     remaining: 10.6s
4:      learn: 0.5240210      total: 279ms     remaining: 10.9s
5:      learn: 0.5107926      total: 336ms     remaining: 10.9s
6:      learn: 0.5003338      total: 398ms     remaining: 11s
7:      learn: 0.4908946      total: 452ms     remaining: 10.8s
8:      learn: 0.4837030      total: 515ms     remaining: 10.9s
9:      learn: 0.4742646      total: 578ms     remaining: 11s
10:     learn: 0.4693499      total: 637ms     remaining: 11s
11:     learn: 0.4649104      total: 703ms     remaining: 11s
12:     learn: 0.4613813      total: 757ms     remaining: 10.9s
13:     learn: 0.4597829      total: 785ms     remaining: 10.4s
14:     learn: 0.4562456      total: 830ms     remaining: 10.2s
15:     learn: 0.4517673      total: 890ms     remaining: 10.2s
16:     learn: 0.4503010      total: 952ms     remaining: 10.2s
17:     learn: 0.4473832      total: 1s        remaining: 10.1s
18:     learn: 0.4461351      total: 1.05s     remaining: 10s
19:     learn: 0.4452282      total: 1.1s      remaining: 9.88s
20:     learn: 0.4434667      total: 1.16s     remaining: 9.88s
21:     learn: 0.4426169      total: 1.22s     remaining: 9.88s
22:     learn: 0.4415323      total: 1.28s     remaining: 9.82s
23:     learn: 0.4406321      total: 1.32s     remaining: 9.71s
24:     learn: 0.4396519      total: 1.38s     remaining: 9.64s
25:     learn: 0.4389098      total: 1.45s     remaining: 9.68s
26:     learn: 0.4378432      total: 1.5s      remaining: 9.58s
27:     learn: 0.4371844      total: 1.54s     remaining: 9.44s
28:     learn: 0.4365233      total: 1.58s     remaining: 9.34s
29:     learn: 0.4356198      total: 1.63s     remaining: 9.24s
30:     learn: 0.4348358      total: 1.68s     remaining: 9.18s
31:     learn: 0.4345564      total: 1.73s     remaining: 9.08s
32:     learn: 0.4340443      total: 1.77s     remaining: 8.98s
33:     learn: 0.4337983      total: 1.82s     remaining: 8.89s
34:     learn: 0.4330536      total: 1.87s     remaining: 8.81s
35:     learn: 0.4328575      total: 1.92s     remaining: 8.74s
36:     learn: 0.4322517      total: 1.97s     remaining: 8.7s
37:     learn: 0.4316513      total: 2.03s     remaining: 8.65s
38:     learn: 0.4313100      total: 2.08s     remaining: 8.58s
39:     learn: 0.4310114      total: 2.14s     remaining: 8.56s
40:     learn: 0.4305915      total: 2.2s      remaining: 8.52s
41:     learn: 0.4304437      total: 2.25s     remaining: 8.48s
42:     learn: 0.4301231      total: 2.31s     remaining: 8.43s
43:     learn: 0.4299683      total: 2.35s     remaining: 8.35s
44:     learn: 0.4294433      total: 2.41s     remaining: 8.31s
45:     learn: 0.4293248      total: 2.46s     remaining: 8.23s
46:     learn: 0.4292018      total: 2.52s     remaining: 8.21s
47:     learn: 0.4290056      total: 2.57s     remaining: 8.14s
```

```
48:     learn: 0.4290055      total: 2.59s     remaining: 7.99s
49:     learn: 0.4287540      total: 2.64s     remaining: 7.92s
50:     learn: 0.4286722      total: 2.68s     remaining: 7.83s
51:     learn: 0.4275152      total: 2.75s     remaining: 7.82s
52:     learn: 0.4273779      total: 2.8s      remaining: 7.77s
53:     learn: 0.4266851      total: 2.85s     remaining: 7.71s
54:     learn: 0.4265466      total: 2.9s      remaining: 7.64s
55:     learn: 0.4262558      total: 2.95s     remaining: 7.58s
56:     learn: 0.4260491      total: 3s        remaining: 7.53s
57:     learn: 0.4256988      total: 3.06s     remaining: 7.49s
58:     learn: 0.4255006      total: 3.1s      remaining: 7.42s
59:     learn: 0.4251970      total: 3.16s     remaining: 7.37s
60:     learn: 0.4248810      total: 3.21s     remaining: 7.3s
61:     learn: 0.4248047      total: 3.25s     remaining: 7.23s
62:     learn: 0.4245988      total: 3.31s     remaining: 7.2s
63:     learn: 0.4245443      total: 3.33s     remaining: 7.08s
64:     learn: 0.4244297      total: 3.37s     remaining: 7.01s
65:     learn: 0.4244205      total: 3.4s      remaining: 6.91s
66:     learn: 0.4242912      total: 3.45s     remaining: 6.85s
67:     learn: 0.4241338      total: 3.49s     remaining: 6.78s
68:     learn: 0.4238728      total: 3.55s     remaining: 6.75s
69:     learn: 0.4231788      total: 3.61s     remaining: 6.7s
70:     learn: 0.4230867      total: 3.65s     remaining: 6.64s
71:     learn: 0.4226834      total: 3.7s      remaining: 6.58s
72:     learn: 0.4222227      total: 3.75s     remaining: 6.52s
73:     learn: 0.4220045      total: 3.8s      remaining: 6.48s
74:     learn: 0.4219650      total: 3.85s     remaining: 6.42s
75:     learn: 0.4214561      total: 3.9s      remaining: 6.36s
76:     learn: 0.4211614      total: 3.95s     remaining: 6.32s
77:     learn: 0.4210308      total: 4s        remaining: 6.26s
78:     learn: 0.4207789      total: 4.07s     remaining: 6.24s
79:     learn: 0.4203329      total: 4.13s     remaining: 6.19s
80:     learn: 0.4201868      total: 4.17s     remaining: 6.13s
81:     learn: 0.4196526      total: 4.22s     remaining: 6.07s
82:     learn: 0.4195767      total: 4.27s     remaining: 6.02s
83:     learn: 0.4194100      total: 4.32s     remaining: 5.97s
84:     learn: 0.4188796      total: 4.37s     remaining: 5.91s
85:     learn: 0.4187188      total: 4.43s     remaining: 5.87s
86:     learn: 0.4185569      total: 4.49s     remaining: 5.83s
87:     learn: 0.4184666      total: 4.54s     remaining: 5.78s
88:     learn: 0.4182886      total: 4.58s     remaining: 5.72s
89:     learn: 0.4180830      total: 4.63s     remaining: 5.66s
90:     learn: 0.4177857      total: 4.68s     remaining: 5.6s
91:     learn: 0.4176970      total: 4.74s     remaining: 5.56s
92:     learn: 0.4173422      total: 4.8s      remaining: 5.52s
93:     learn: 0.4172243      total: 4.84s     remaining: 5.46s
94:     learn: 0.4172237      total: 4.86s     remaining: 5.37s
95:     learn: 0.4170564      total: 4.9s      remaining: 5.31s
```

```
96:     learn: 0.4167711     total: 4.95s     remaining: 5.26s
97:     learn: 0.4166688     total: 5.02s     remaining: 5.22s
98:     learn: 0.4164868     total: 5.07s     remaining: 5.17s
99:     learn: 0.4163934     total: 5.12s     remaining: 5.12s
100:    learn: 0.4159128     total: 5.16s     remaining: 5.06s
101:    learn: 0.4152351     total: 5.22s     remaining: 5.02s
102:    learn: 0.4149873     total: 5.28s     remaining: 4.97s
103:    learn: 0.4141851     total: 5.33s     remaining: 4.92s
104:    learn: 0.4140068     total: 5.38s     remaining: 4.87s
105:    learn: 0.4137974     total: 5.43s     remaining: 4.82s
106:    learn: 0.4136405     total: 5.5s      remaining: 4.78s
107:    learn: 0.4129968     total: 5.56s     remaining: 4.74s
108:    learn: 0.4127713     total: 5.6s      remaining: 4.68s
109:    learn: 0.4127667     total: 5.63s     remaining: 4.61s
110:    learn: 0.4125502     total: 5.68s     remaining: 4.56s
111:    learn: 0.4118378     total: 5.75s     remaining: 4.52s
112:    learn: 0.4117978     total: 5.8s      remaining: 4.47s
113:    learn: 0.4116183     total: 5.86s     remaining: 4.42s
114:    learn: 0.4111674     total: 5.91s     remaining: 4.37s
115:    learn: 0.4106418     total: 5.97s     remaining: 4.32s
116:    learn: 0.4106290     total: 6.03s     remaining: 4.28s
117:    learn: 0.4100221     total: 6.11s     remaining: 4.24s
118:    learn: 0.4098574     total: 6.16s     remaining: 4.19s
119:    learn: 0.4097117     total: 6.22s     remaining: 4.15s
120:    learn: 0.4095629     total: 6.27s     remaining: 4.09s
121:    learn: 0.4095539     total: 6.32s     remaining: 4.04s
122:    learn: 0.4092832     total: 6.38s     remaining: 3.99s
123:    learn: 0.4092098     total: 6.42s     remaining: 3.94s
124:    learn: 0.4091162     total: 6.48s     remaining: 3.89s
125:    learn: 0.4090322     total: 6.53s     remaining: 3.83s
126:    learn: 0.4088883     total: 6.58s     remaining: 3.78s
127:    learn: 0.4085899     total: 6.63s     remaining: 3.73s
128:    learn: 0.4085781     total: 6.69s     remaining: 3.68s
129:    learn: 0.4085078     total: 6.74s     remaining: 3.63s
130:    learn: 0.4084712     total: 6.78s     remaining: 3.57s
131:    learn: 0.4078998     total: 6.83s     remaining: 3.52s
132:    learn: 0.4078914     total: 6.88s     remaining: 3.47s
133:    learn: 0.4076450     total: 6.93s     remaining: 3.41s
134:    learn: 0.4073031     total: 6.98s     remaining: 3.36s
135:    learn: 0.4070223     total: 7.03s     remaining: 3.31s
136:    learn: 0.4066587     total: 7.08s     remaining: 3.25s
137:    learn: 0.4064487     total: 7.14s     remaining: 3.21s
138:    learn: 0.4061203     total: 7.2s      remaining: 3.16s
139:    learn: 0.4060957     total: 7.25s     remaining: 3.11s
140:    learn: 0.4059857     total: 7.32s     remaining: 3.06s
141:    learn: 0.4056631     total: 7.39s     remaining: 3.02s
142:    learn: 0.4054508     total: 7.44s     remaining: 2.96s
143:    learn: 0.4052893     total: 7.49s     remaining: 2.91s
```

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144:    learn: 0.4051762    total: 7.53s    remaining: 2.86s
145:    learn: 0.4048935    total: 7.58s    remaining: 2.8s
146:    learn: 0.4046793    total: 7.63s    remaining: 2.75s
147:    learn: 0.4046448    total: 7.68s    remaining: 2.7s
148:    learn: 0.4043963    total: 7.73s    remaining: 2.65s
149:    learn: 0.4042358    total: 7.79s    remaining: 2.6s
150:    learn: 0.4042257    total: 7.84s    remaining: 2.54s
151:    learn: 0.4041503    total: 7.89s    remaining: 2.49s
152:    learn: 0.4040040    total: 7.94s    remaining: 2.44s
153:    learn: 0.4038613    total: 7.99s    remaining: 2.39s
154:    learn: 0.4037682    total: 8.03s    remaining: 2.33s
155:    learn: 0.4037458    total: 8.08s    remaining: 2.28s
156:    learn: 0.4036408    total: 8.13s    remaining: 2.23s
157:    learn: 0.4036268    total: 8.19s    remaining: 2.18s
158:    learn: 0.4034611    total: 8.25s    remaining: 2.13s
159:    learn: 0.4033045    total: 8.3s     remaining: 2.07s
160:    learn: 0.4030507    total: 8.36s    remaining: 2.02s
161:    learn: 0.4029191    total: 8.43s    remaining: 1.98s
162:    learn: 0.4025178    total: 8.48s    remaining: 1.93s
163:    learn: 0.4023479    total: 8.53s    remaining: 1.87s
164:    learn: 0.4021365    total: 8.58s    remaining: 1.82s
165:    learn: 0.4019168    total: 8.64s    remaining: 1.77s
166:    learn: 0.4018617    total: 8.7s     remaining: 1.72s
167:    learn: 0.4016133    total: 8.75s    remaining: 1.67s
168:    learn: 0.4014955    total: 8.8s     remaining: 1.61s
169:    learn: 0.4012386    total: 8.85s    remaining: 1.56s
170:    learn: 0.4011182    total: 8.91s    remaining: 1.51s
171:    learn: 0.4010257    total: 8.96s    remaining: 1.46s
172:    learn: 0.4004214    total: 9.01s    remaining: 1.41s
173:    learn: 0.4002182    total: 9.07s    remaining: 1.35s
174:    learn: 0.4000855    total: 9.13s    remaining: 1.3s
175:    learn: 0.3997250    total: 9.19s    remaining: 1.25s
176:    learn: 0.3992750    total: 9.23s    remaining: 1.2s
177:    learn: 0.3991303    total: 9.29s    remaining: 1.15s
178:    learn: 0.3988760    total: 9.35s    remaining: 1.1s
179:    learn: 0.3986654    total: 9.42s    remaining: 1.05s
180:    learn: 0.3984573    total: 9.47s    remaining: 994ms
181:    learn: 0.3980957    total: 9.53s    remaining: 942ms
182:    learn: 0.3979414    total: 9.57s    remaining: 889ms
183:    learn: 0.3979292    total: 9.63s    remaining: 837ms
184:    learn: 0.3977749    total: 9.69s    remaining: 786ms
185:    learn: 0.3976801    total: 9.74s    remaining: 733ms
186:    learn: 0.3975202    total: 9.81s    remaining: 682ms
187:    learn: 0.3974337    total: 9.89s    remaining: 631ms
188:    learn: 0.3973064    total: 9.94s    remaining: 579ms
189:    learn: 0.3972328    total: 9.99s    remaining: 526ms
190:    learn: 0.3971247    total: 10s      remaining: 473ms
191:    learn: 0.3970032    total: 10.1s    remaining: 421ms
```

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192:    learn: 0.3969004        total: 10.2s    remaining: 368ms
193:    learn: 0.3967373        total: 10.2s    remaining: 316ms
194:    learn: 0.3964664        total: 10.3s    remaining: 263ms
195:    learn: 0.3962949        total: 10.3s    remaining: 210ms
196:    learn: 0.3961299        total: 10.4s    remaining: 158ms
197:    learn: 0.3960431        total: 10.4s    remaining: 105ms
198:    learn: 0.3958425        total: 10.5s    remaining: 52.7ms
199:    learn: 0.3954806        total: 10.5s    remaining: 0us
```
Mean train f1-score of data (CV) 24 is : 0.8193690157373216
Mean test f1-score of data (CV) 24 is : 0.8047021260104508

Shape of data 25 is :
(27302, 10)
Distribution of 25 is :
Yes   14101
No   13201
Name: TIMELY_RESPONSE, dtype: int64

<IPython.core.display.HTML object>

MetricVisualizer(layout=Layout(align_self='stretch', height='500px'))

Train f1_score [Yes]: for data 25 is : 0.8112870579830933
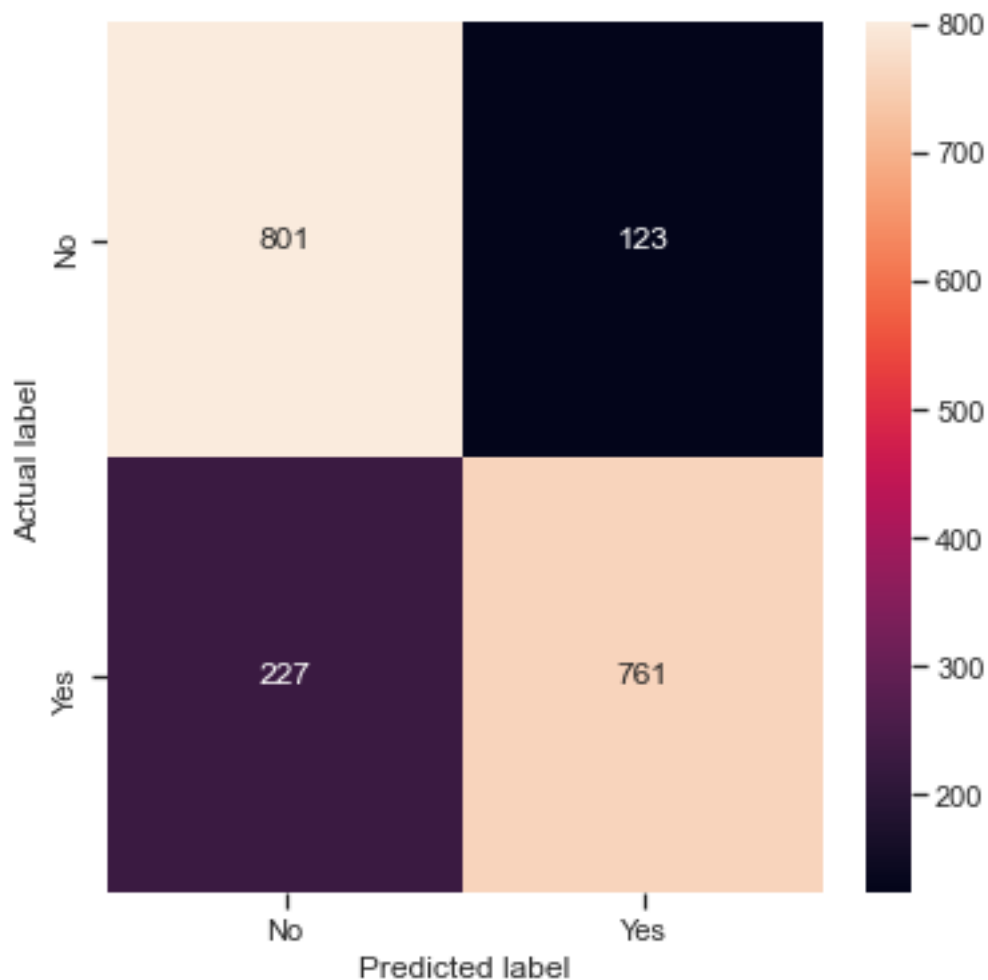Train f1_score [No]: for data 25 is : 0.81413438611578

	precision	recall	f1-score	support
No	0.78	0.87	0.82	924
Yes	0.86	0.77	0.81	988
accuracy			0.82	1912
macro avg	0.82	0.82	0.82	1912
weighted avg	0.82	0.82	0.82	1912

```
Cross validation result for data 25 is :
0:      learn: 0.6316573       total: 53.9ms   remaining: 10.7s
1:      learn: 0.5942668       total: 99.3ms   remaining: 9.84s
2:      learn: 0.5649839       total: 147ms    remaining: 9.67s
3:      learn: 0.5428656       total: 197ms    remaining: 9.67s
4:      learn: 0.5232532       total: 239ms    remaining: 9.31s
5:      learn: 0.5113147       total: 289ms    remaining: 9.35s
6:      learn: 0.5023456       total: 334ms    remaining: 9.22s
7:      learn: 0.4920267       total: 384ms    remaining: 9.21s
8:      learn: 0.4849080       total: 428ms    remaining: 9.09s
9:      learn: 0.4758738       total: 487ms    remaining: 9.25s
10:     learn: 0.4722546       total: 540ms    remaining: 9.27s
11:     learn: 0.4689395       total: 589ms    remaining: 9.22s
12:     learn: 0.4659516       total: 649ms    remaining: 9.33s
13:     learn: 0.4633729       total: 701ms    remaining: 9.31s
14:     learn: 0.4597313       total: 759ms    remaining: 9.36s
15:     learn: 0.4578472       total: 822ms    remaining: 9.45s
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16:     learn: 0.4553734      total: 888ms     remaining: 9.56s
17:     learn: 0.4538978      total: 934ms     remaining: 9.45s
18:     learn: 0.4524270      total: 981ms     remaining: 9.35s
19:     learn: 0.4508599      total: 1.03s     remaining: 9.26s
20:     learn: 0.4503114      total: 1.06s     remaining: 9.08s
21:     learn: 0.4495134      total: 1.12s     remaining: 9.03s
22:     learn: 0.4481845      total: 1.16s     remaining: 8.94s
23:     learn: 0.4468590      total: 1.21s     remaining: 8.88s
24:     learn: 0.4455342      total: 1.26s     remaining: 8.81s
25:     learn: 0.4448651      total: 1.32s     remaining: 8.85s
26:     learn: 0.4436972      total: 1.39s     remaining: 8.94s
27:     learn: 0.4427493      total: 1.46s     remaining: 8.99s
28:     learn: 0.4420761      total: 1.51s     remaining: 8.9s
29:     learn: 0.4416479      total: 1.57s     remaining: 8.9s
30:     learn: 0.4409760      total: 1.63s     remaining: 8.91s
31:     learn: 0.4399341      total: 1.69s     remaining: 8.89s
32:     learn: 0.4398069      total: 1.76s     remaining: 8.9s
33:     learn: 0.4390854      total: 1.84s     remaining: 8.99s
34:     learn: 0.4385191      total: 1.89s     remaining: 8.93s
35:     learn: 0.4379082      total: 1.94s     remaining: 8.84s
36:     learn: 0.4376510      total: 1.99s     remaining: 8.74s
37:     learn: 0.4371193      total: 2.04s     remaining: 8.68s
38:     learn: 0.4364714      total: 2.09s     remaining: 8.61s
39:     learn: 0.4361154      total: 2.13s     remaining: 8.53s
40:     learn: 0.4358306      total: 2.19s     remaining: 8.51s
41:     learn: 0.4358264      total: 2.21s     remaining: 8.31s
42:     learn: 0.4356386      total: 2.27s     remaining: 8.29s
43:     learn: 0.4352431      total: 2.32s     remaining: 8.23s
44:     learn: 0.4350736      total: 2.38s     remaining: 8.18s
45:     learn: 0.4347970      total: 2.43s     remaining: 8.13s
46:     learn: 0.4344536      total: 2.52s     remaining: 8.19s
47:     learn: 0.4342480      total: 2.56s     remaining: 8.11s
48:     learn: 0.4339354      total: 2.62s     remaining: 8.06s
49:     learn: 0.4337515      total: 2.67s     remaining: 8s
50:     learn: 0.4335549      total: 2.71s     remaining: 7.91s
51:     learn: 0.4333041      total: 2.76s     remaining: 7.84s
52:     learn: 0.4331701      total: 2.8s      remaining: 7.77s
53:     learn: 0.4329079      total: 2.85s     remaining: 7.71s
54:     learn: 0.4326993      total: 2.91s     remaining: 7.68s
55:     learn: 0.4326111      total: 2.96s     remaining: 7.62s
56:     learn: 0.4322749      total: 3.03s     remaining: 7.61s
57:     learn: 0.4320012      total: 3.08s     remaining: 7.55s
58:     learn: 0.4316699      total: 3.14s     remaining: 7.5s
59:     learn: 0.4305316      total: 3.19s     remaining: 7.44s
60:     learn: 0.4300737      total: 3.24s     remaining: 7.39s
61:     learn: 0.4297336      total: 3.3s      remaining: 7.35s
62:     learn: 0.4295532      total: 3.35s     remaining: 7.28s
63:     learn: 0.4294524      total: 3.42s     remaining: 7.27s
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64:    learn: 0.4292780    total: 3.49s    remaining: 7.25s
65:    learn: 0.4290944    total: 3.53s    remaining: 7.18s
66:    learn: 0.4286451    total: 3.59s    remaining: 7.12s
67:    learn: 0.4285242    total: 3.63s    remaining: 7.05s
68:    learn: 0.4282067    total: 3.74s    remaining: 7.1s
69:    learn: 0.4281774    total: 3.76s    remaining: 6.98s
70:    learn: 0.4277671    total: 3.81s    remaining: 6.93s
71:    learn: 0.4267907    total: 3.87s    remaining: 6.87s
72:    learn: 0.4265566    total: 3.92s    remaining: 6.81s
73:    learn: 0.4258440    total: 4s       remaining: 6.8s
74:    learn: 0.4255783    total: 4.06s    remaining: 6.76s
75:    learn: 0.4253964    total: 4.1s     remaining: 6.69s
76:    learn: 0.4253043    total: 4.15s    remaining: 6.63s
77:    learn: 0.4250331    total: 4.2s     remaining: 6.57s
78:    learn: 0.4250321    total: 4.24s    remaining: 6.49s
79:    learn: 0.4248887    total: 4.29s    remaining: 6.43s
80:    learn: 0.4243749    total: 4.34s    remaining: 6.38s
81:    learn: 0.4241754    total: 4.39s    remaining: 6.32s
82:    learn: 0.4240481    total: 4.44s    remaining: 6.26s
83:    learn: 0.4239963    total: 4.49s    remaining: 6.2s
84:    learn: 0.4235973    total: 4.54s    remaining: 6.14s
85:    learn: 0.4233578    total: 4.58s    remaining: 6.08s
86:    learn: 0.4233244    total: 4.63s    remaining: 6.01s
87:    learn: 0.4231034    total: 4.67s    remaining: 5.94s
88:    learn: 0.4225088    total: 4.72s    remaining: 5.89s
89:    learn: 0.4223721    total: 4.78s    remaining: 5.84s
90:    learn: 0.4222457    total: 4.83s    remaining: 5.78s
91:    learn: 0.4217803    total: 4.89s    remaining: 5.74s
92:    learn: 0.4216294    total: 4.95s    remaining: 5.7s
93:    learn: 0.4213597    total: 5s       remaining: 5.64s
94:    learn: 0.4212495    total: 5.05s    remaining: 5.58s
95:    learn: 0.4210538    total: 5.11s    remaining: 5.53s
96:    learn: 0.4208026    total: 5.17s    remaining: 5.49s
97:    learn: 0.4205142    total: 5.24s    remaining: 5.46s
98:    learn: 0.4205142    total: 5.26s    remaining: 5.37s
99:    learn: 0.4201930    total: 5.31s    remaining: 5.31s
100:   learn: 0.4194601    total: 5.38s    remaining: 5.27s
101:   learn: 0.4192099    total: 5.44s    remaining: 5.23s
102:   learn: 0.4191102    total: 5.5s     remaining: 5.18s
103:   learn: 0.4187755    total: 5.57s    remaining: 5.14s
104:   learn: 0.4183331    total: 5.61s    remaining: 5.08s
105:   learn: 0.4175856    total: 5.68s    remaining: 5.04s
106:   learn: 0.4170385    total: 5.76s    remaining: 5.01s
107:   learn: 0.4169117    total: 5.81s    remaining: 4.95s
108:   learn: 0.4168185    total: 5.86s    remaining: 4.89s
109:   learn: 0.4165380    total: 5.93s    remaining: 4.86s
110:   learn: 0.4163694    total: 5.99s    remaining: 4.8s
111:   learn: 0.4162415    total: 6.03s    remaining: 4.74s
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112:    learn: 0.4161836    total: 6.08s    remaining: 4.68s
113:    learn: 0.4161461    total: 6.12s    remaining: 4.62s
114:    learn: 0.4159834    total: 6.17s    remaining: 4.56s
115:    learn: 0.4158649    total: 6.22s    remaining: 4.5s
116:    learn: 0.4155917    total: 6.26s    remaining: 4.44s
117:    learn: 0.4155118    total: 6.32s    remaining: 4.39s
118:    learn: 0.4151853    total: 6.39s    remaining: 4.35s
119:    learn: 0.4150387    total: 6.44s    remaining: 4.29s
120:    learn: 0.4146263    total: 6.49s    remaining: 4.24s
121:    learn: 0.4141114    total: 6.55s    remaining: 4.19s
122:    learn: 0.4139451    total: 6.61s    remaining: 4.14s
123:    learn: 0.4137462    total: 6.69s    remaining: 4.1s
124:    learn: 0.4135663    total: 6.75s    remaining: 4.05s
125:    learn: 0.4129669    total: 6.83s    remaining: 4.01s
126:    learn: 0.4128996    total: 6.89s    remaining: 3.96s
127:    learn: 0.4127366    total: 6.94s    remaining: 3.91s
128:    learn: 0.4126559    total: 7.01s    remaining: 3.86s
129:    learn: 0.4124330    total: 7.07s    remaining: 3.81s
130:    learn: 0.4123674    total: 7.13s    remaining: 3.76s
131:    learn: 0.4121021    total: 7.19s    remaining: 3.7s
132:    learn: 0.4116268    total: 7.24s    remaining: 3.65s
133:    learn: 0.4114273    total: 7.29s    remaining: 3.59s
134:    learn: 0.4111740    total: 7.35s    remaining: 3.54s
135:    learn: 0.4110404    total: 7.42s    remaining: 3.49s
136:    learn: 0.4109524    total: 7.47s    remaining: 3.44s
137:    learn: 0.4108588    total: 7.53s    remaining: 3.38s
138:    learn: 0.4108394    total: 7.6s     remaining: 3.33s
139:    learn: 0.4106775    total: 7.67s    remaining: 3.29s
140:    learn: 0.4105341    total: 7.72s    remaining: 3.23s
141:    learn: 0.4103402    total: 7.77s    remaining: 3.17s
142:    learn: 0.4100634    total: 7.81s    remaining: 3.11s
143:    learn: 0.4099566    total: 7.86s    remaining: 3.06s
144:    learn: 0.4096790    total: 7.91s    remaining: 3s
145:    learn: 0.4094545    total: 7.96s    remaining: 2.94s
146:    learn: 0.4092755    total: 8.03s    remaining: 2.89s
147:    learn: 0.4091415    total: 8.08s    remaining: 2.84s
148:    learn: 0.4089057    total: 8.13s    remaining: 2.78s
149:    learn: 0.4088251    total: 8.17s    remaining: 2.72s
150:    learn: 0.4086507    total: 8.23s    remaining: 2.67s
151:    learn: 0.4083948    total: 8.28s    remaining: 2.61s
152:    learn: 0.4081498    total: 8.35s    remaining: 2.56s
153:    learn: 0.4078303    total: 8.4s     remaining: 2.51s
154:    learn: 0.4075768    total: 8.45s    remaining: 2.45s
155:    learn: 0.4073030    total: 8.51s    remaining: 2.4s
156:    learn: 0.4070368    total: 8.55s    remaining: 2.34s
157:    learn: 0.4069445    total: 8.6s     remaining: 2.29s
158:    learn: 0.4067708    total: 8.65s    remaining: 2.23s
159:    learn: 0.4067062    total: 8.72s    remaining: 2.18s
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160:     learn: 0.4064526      total: 8.79s     remaining: 2.13s
161:     learn: 0.4063491      total: 8.84s     remaining: 2.07s
162:     learn: 0.4059875      total: 8.89s     remaining: 2.02s
163:     learn: 0.4059203      total: 8.93s     remaining: 1.96s
164:     learn: 0.4057526      total: 8.99s     remaining: 1.91s
165:     learn: 0.4056964      total: 9.04s     remaining: 1.85s
166:     learn: 0.4056043      total: 9.11s     remaining: 1.8s
167:     learn: 0.4055350      total: 9.15s     remaining: 1.74s
168:     learn: 0.4054456      total: 9.21s     remaining: 1.69s
169:     learn: 0.4052992      total: 9.28s     remaining: 1.64s
170:     learn: 0.4050738      total: 9.34s     remaining: 1.58s
171:     learn: 0.4050419      total: 9.38s     remaining: 1.53s
172:     learn: 0.4049845      total: 9.43s     remaining: 1.47s
173:     learn: 0.4048685      total: 9.49s     remaining: 1.42s
174:     learn: 0.4045367      total: 9.54s     remaining: 1.36s
175:     learn: 0.4044322      total: 9.59s     remaining: 1.31s
176:     learn: 0.4041809      total: 9.65s     remaining: 1.25s
177:     learn: 0.4041200      total: 9.72s     remaining: 1.2s
178:     learn: 0.4039359      total: 9.79s     remaining: 1.15s
179:     learn: 0.4038972      total: 9.84s     remaining: 1.09s
180:     learn: 0.4036605      total: 9.89s     remaining: 1.04s
181:     learn: 0.4035676      total: 9.94s     remaining: 983ms
182:     learn: 0.4035572      total: 9.99s     remaining: 928ms
183:     learn: 0.4033971      total: 10s       remaining: 874ms
184:     learn: 0.4032783      total: 10.1s     remaining: 819ms
185:     learn: 0.4031609      total: 10.1s     remaining: 764ms
186:     learn: 0.4028936      total: 10.2s     remaining: 709ms
187:     learn: 0.4026943      total: 10.3s     remaining: 655ms
188:     learn: 0.4025497      total: 10.3s     remaining: 601ms
189:     learn: 0.4023355      total: 10.5s     remaining: 551ms
190:     learn: 0.4021689      total: 10.6s     remaining: 499ms
191:     learn: 0.4020929      total: 10.7s     remaining: 445ms
192:     learn: 0.4019723      total: 10.7s     remaining: 390ms
193:     learn: 0.4018325      total: 10.8s     remaining: 334ms
194:     learn: 0.4017386      total: 10.9s     remaining: 279ms
195:     learn: 0.4015649      total: 10.9s     remaining: 223ms
196:     learn: 0.4013890      total: 11s       remaining: 167ms
197:     learn: 0.4011037      total: 11s       remaining: 112ms
198:     learn: 0.4008567      total: 11.1s     remaining: 55.8ms
199:     learn: 0.4007686      total: 11.2s     remaining: 0us
0:       learn: 0.6328512      total: 49.1ms    remaining: 9.77s
1:       learn: 0.5980823      total: 104ms     remaining: 10.3s
2:       learn: 0.5665651      total: 152ms     remaining: 9.95s
3:       learn: 0.5461624      total: 217ms     remaining: 10.6s
4:       learn: 0.5284924      total: 266ms     remaining: 10.4s
5:       learn: 0.5142104      total: 318ms     remaining: 10.3s
6:       learn: 0.5043601      total: 402ms     remaining: 11.1s
7:       learn: 0.4953799      total: 453ms     remaining: 10.9s
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8:        learn: 0.4889147        total: 520ms        remaining: 11s
9:        learn: 0.4813069        total: 582ms        remaining: 11.1s
10:       learn: 0.4749723        total: 641ms        remaining: 11s
11:       learn: 0.4717770        total: 698ms        remaining: 10.9s
12:       learn: 0.4681647        total: 766ms        remaining: 11s
13:       learn: 0.4657686        total: 818ms        remaining: 10.9s
14:       learn: 0.4622078        total: 868ms        remaining: 10.7s
15:       learn: 0.4588563        total: 920ms        remaining: 10.6s
16:       learn: 0.4564143        total: 976ms        remaining: 10.5s
17:       learn: 0.4547927        total: 1.03s        remaining: 10.4s
18:       learn: 0.4537361        total: 1.09s        remaining: 10.3s
19:       learn: 0.4523656        total: 1.15s        remaining: 10.3s
20:       learn: 0.4513913        total: 1.21s        remaining: 10.3s
21:       learn: 0.4503429        total: 1.26s        remaining: 10.2s
22:       learn: 0.4487170        total: 1.32s        remaining: 10.1s
23:       learn: 0.4466960        total: 1.38s        remaining: 10.1s
24:       learn: 0.4461133        total: 1.43s        remaining: 9.99s
25:       learn: 0.4453311        total: 1.48s        remaining: 9.88s
26:       learn: 0.4446856        total: 1.52s        remaining: 9.74s
27:       learn: 0.4445674        total: 1.57s        remaining: 9.62s
28:       learn: 0.4438786        total: 1.61s        remaining: 9.52s
29:       learn: 0.4433128        total: 1.67s        remaining: 9.44s
30:       learn: 0.4419760        total: 1.71s        remaining: 9.34s
31:       learn: 0.4414424        total: 1.78s        remaining: 9.33s
32:       learn: 0.4408000        total: 1.83s        remaining: 9.24s
33:       learn: 0.4404427        total: 1.9s         remaining: 9.28s
34:       learn: 0.4401412        total: 1.97s        remaining: 9.27s
35:       learn: 0.4391518        total: 2.02s        remaining: 9.21s
36:       learn: 0.4389924        total: 2.06s        remaining: 9.09s
37:       learn: 0.4385316        total: 2.11s        remaining: 9s
38:       learn: 0.4381745        total: 2.17s        remaining: 8.94s
39:       learn: 0.4377261        total: 2.21s        remaining: 8.85s
40:       learn: 0.4373199        total: 2.26s        remaining: 8.78s
41:       learn: 0.4371984        total: 2.32s        remaining: 8.72s
42:       learn: 0.4367398        total: 2.39s        remaining: 8.72s
43:       learn: 0.4364571        total: 2.44s        remaining: 8.66s
44:       learn: 0.4361728        total: 2.5s         remaining: 8.6s
45:       learn: 0.4360262        total: 2.57s        remaining: 8.61s
46:       learn: 0.4359529        total: 2.63s        remaining: 8.57s
47:       learn: 0.4355948        total: 2.7s         remaining: 8.56s
48:       learn: 0.4352068        total: 2.76s        remaining: 8.51s
49:       learn: 0.4343716        total: 2.84s        remaining: 8.52s
50:       learn: 0.4332963        total: 2.9s         remaining: 8.47s
51:       learn: 0.4326169        total: 2.97s        remaining: 8.46s
52:       learn: 0.4315209        total: 3.05s        remaining: 8.46s
53:       learn: 0.4311687        total: 3.1s         remaining: 8.39s
54:       learn: 0.4308515        total: 3.15s        remaining: 8.3s
55:       learn: 0.4304942        total: 3.2s         remaining: 8.23s
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56:     learn: 0.4303194      total: 3.25s    remaining: 8.16s
57:     learn: 0.4299861      total: 3.32s    remaining: 8.12s
58:     learn: 0.4297126      total: 3.37s    remaining: 8.05s
59:     learn: 0.4294557      total: 3.42s    remaining: 7.97s
60:     learn: 0.4293676      total: 3.46s    remaining: 7.89s
61:     learn: 0.4292642      total: 3.51s    remaining: 7.81s
62:     learn: 0.4289537      total: 3.56s    remaining: 7.75s
63:     learn: 0.4286125      total: 3.62s    remaining: 7.69s
64:     learn: 0.4282502      total: 3.66s    remaining: 7.61s
65:     learn: 0.4279854      total: 3.71s    remaining: 7.53s
66:     learn: 0.4276708      total: 3.76s    remaining: 7.46s
67:     learn: 0.4274833      total: 3.83s    remaining: 7.43s
68:     learn: 0.4273558      total: 3.88s    remaining: 7.38s
69:     learn: 0.4269236      total: 3.96s    remaining: 7.35s
70:     learn: 0.4267140      total: 4s       remaining: 7.27s
71:     learn: 0.4264497      total: 4.06s    remaining: 7.22s
72:     learn: 0.4263177      total: 4.11s    remaining: 7.15s
73:     learn: 0.4259803      total: 4.17s    remaining: 7.1s
74:     learn: 0.4255205      total: 4.22s    remaining: 7.04s
75:     learn: 0.4253638      total: 4.28s    remaining: 6.98s
76:     learn: 0.4251770      total: 4.33s    remaining: 6.92s
77:     learn: 0.4247387      total: 4.38s    remaining: 6.86s
78:     learn: 0.4246069      total: 4.45s    remaining: 6.81s
79:     learn: 0.4244789      total: 4.5s     remaining: 6.75s
80:     learn: 0.4243413      total: 4.55s    remaining: 6.68s
81:     learn: 0.4242419      total: 4.6s     remaining: 6.62s
82:     learn: 0.4238901      total: 4.65s    remaining: 6.55s
83:     learn: 0.4232069      total: 4.73s    remaining: 6.53s
84:     learn: 0.4229135      total: 4.77s    remaining: 6.45s
85:     learn: 0.4223580      total: 4.83s    remaining: 6.4s
86:     learn: 0.4220465      total: 4.87s    remaining: 6.32s
87:     learn: 0.4219296      total: 4.91s    remaining: 6.25s
88:     learn: 0.4213725      total: 4.97s    remaining: 6.2s
89:     learn: 0.4213124      total: 5.02s    remaining: 6.14s
90:     learn: 0.4210281      total: 5.07s    remaining: 6.07s
91:     learn: 0.4205982      total: 5.12s    remaining: 6.02s
92:     learn: 0.4204959      total: 5.18s    remaining: 5.96s
93:     learn: 0.4203165      total: 5.23s    remaining: 5.9s
94:     learn: 0.4201813      total: 5.29s    remaining: 5.85s
95:     learn: 0.4199679      total: 5.34s    remaining: 5.79s
96:     learn: 0.4198980      total: 5.39s    remaining: 5.72s
97:     learn: 0.4198326      total: 5.45s    remaining: 5.67s
98:     learn: 0.4195944      total: 5.49s    remaining: 5.6s
99:     learn: 0.4194939      total: 5.55s    remaining: 5.55s
100:    learn: 0.4188983      total: 5.61s    remaining: 5.5s
101:    learn: 0.4185533      total: 5.67s    remaining: 5.45s
102:    learn: 0.4184654      total: 5.75s    remaining: 5.41s
103:    learn: 0.4183062      total: 5.8s     remaining: 5.35s
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104:     learn: 0.4181977      total: 5.85s     remaining: 5.29s
105:     learn: 0.4180842      total: 5.91s     remaining: 5.24s
106:     learn: 0.4178358      total: 5.96s     remaining: 5.18s
107:     learn: 0.4175622      total: 6.02s     remaining: 5.13s
108:     learn: 0.4173118      total: 6.08s     remaining: 5.07s
109:     learn: 0.4171454      total: 6.13s     remaining: 5.02s
110:     learn: 0.4169914      total: 6.19s     remaining: 4.96s
111:     learn: 0.4169771      total: 6.24s     remaining: 4.9s
112:     learn: 0.4167337      total: 6.3s      remaining: 4.85s
113:     learn: 0.4160350      total: 6.35s     remaining: 4.79s
114:     learn: 0.4158132      total: 6.42s     remaining: 4.75s
115:     learn: 0.4157968      total: 6.47s     remaining: 4.69s
116:     learn: 0.4156557      total: 6.55s     remaining: 4.64s
117:     learn: 0.4154756      total: 6.61s     remaining: 4.59s
118:     learn: 0.4153114      total: 6.69s     remaining: 4.55s
119:     learn: 0.4147877      total: 6.75s     remaining: 4.5s
120:     learn: 0.4144912      total: 6.8s      remaining: 4.44s
121:     learn: 0.4141239      total: 6.88s     remaining: 4.4s
122:     learn: 0.4139074      total: 6.94s     remaining: 4.34s
123:     learn: 0.4137723      total: 7s        remaining: 4.29s
124:     learn: 0.4130262      total: 7.04s     remaining: 4.23s
125:     learn: 0.4129028      total: 7.09s     remaining: 4.17s
126:     learn: 0.4126788      total: 7.16s     remaining: 4.12s
127:     learn: 0.4125674      total: 7.21s     remaining: 4.06s
128:     learn: 0.4125016      total: 7.28s     remaining: 4.01s
129:     learn: 0.4123720      total: 7.35s     remaining: 3.96s
130:     learn: 0.4122245      total: 7.4s      remaining: 3.9s
131:     learn: 0.4118950      total: 7.46s     remaining: 3.84s
132:     learn: 0.4117147      total: 7.52s     remaining: 3.79s
133:     learn: 0.4112111      total: 7.56s     remaining: 3.72s
134:     learn: 0.4110651      total: 7.61s     remaining: 3.66s
135:     learn: 0.4108283      total: 7.66s     remaining: 3.6s
136:     learn: 0.4106865      total: 7.71s     remaining: 3.54s
137:     learn: 0.4105494      total: 7.78s     remaining: 3.49s
138:     learn: 0.4105450      total: 7.82s     remaining: 3.43s
139:     learn: 0.4103855      total: 7.88s     remaining: 3.38s
140:     learn: 0.4101333      total: 7.93s     remaining: 3.32s
141:     learn: 0.4098053      total: 7.98s     remaining: 3.26s
142:     learn: 0.4097352      total: 8.04s     remaining: 3.21s
143:     learn: 0.4095114      total: 8.1s      remaining: 3.15s
144:     learn: 0.4094133      total: 8.17s     remaining: 3.1s
145:     learn: 0.4091749      total: 8.22s     remaining: 3.04s
146:     learn: 0.4090178      total: 8.29s     remaining: 2.99s
147:     learn: 0.4088133      total: 8.37s     remaining: 2.94s
148:     learn: 0.4087510      total: 8.43s     remaining: 2.89s
149:     learn: 0.4086018      total: 8.48s     remaining: 2.83s
150:     learn: 0.4083823      total: 8.53s     remaining: 2.77s
151:     learn: 0.4082859      total: 8.6s      remaining: 2.71s
```

```
152:	learn: 0.4081651	total: 8.64s	remaining: 2.65s
153:	learn: 0.4079718	total: 8.69s	remaining: 2.6s
154:	learn: 0.4078061	total: 8.78s	remaining: 2.55s
155:	learn: 0.4075798	total: 8.83s	remaining: 2.49s
156:	learn: 0.4074223	total: 8.88s	remaining: 2.43s
157:	learn: 0.4073194	total: 8.92s	remaining: 2.37s
158:	learn: 0.4070646	total: 8.98s	remaining: 2.31s
159:	learn: 0.4069524	total: 9.03s	remaining: 2.26s
160:	learn: 0.4068353	total: 9.09s	remaining: 2.2s
161:	learn: 0.4067176	total: 9.15s	remaining: 2.15s
162:	learn: 0.4065305	total: 9.21s	remaining: 2.09s
163:	learn: 0.4061749	total: 9.28s	remaining: 2.04s
164:	learn: 0.4058982	total: 9.34s	remaining: 1.98s
165:	learn: 0.4058946	total: 9.39s	remaining: 1.92s
166:	learn: 0.4057295	total: 9.45s	remaining: 1.87s
167:	learn: 0.4056512	total: 9.53s	remaining: 1.81s
168:	learn: 0.4055232	total: 9.58s	remaining: 1.76s
169:	learn: 0.4053556	total: 9.63s	remaining: 1.7s
170:	learn: 0.4052099	total: 9.71s	remaining: 1.65s
171:	learn: 0.4048577	total: 9.77s	remaining: 1.59s
172:	learn: 0.4047067	total: 9.83s	remaining: 1.53s
173:	learn: 0.4045640	total: 9.9s	remaining: 1.48s
174:	learn: 0.4043902	total: 9.95s	remaining: 1.42s
175:	learn: 0.4042247	total: 10s	remaining: 1.36s
176:	learn: 0.4042215	total: 10.1s	remaining: 1.31s
177:	learn: 0.4039252	total: 10.1s	remaining: 1.25s
178:	learn: 0.4038100	total: 10.2s	remaining: 1.19s
179:	learn: 0.4037045	total: 10.2s	remaining: 1.14s
180:	learn: 0.4034044	total: 10.3s	remaining: 1.08s
181:	learn: 0.4033139	total: 10.3s	remaining: 1.02s
182:	learn: 0.4030796	total: 10.4s	remaining: 966ms
183:	learn: 0.4028897	total: 10.5s	remaining: 910ms
184:	learn: 0.4026697	total: 10.5s	remaining: 853ms
185:	learn: 0.4021046	total: 10.6s	remaining: 797ms
186:	learn: 0.4018994	total: 10.6s	remaining: 740ms
187:	learn: 0.4017635	total: 10.7s	remaining: 682ms
188:	learn: 0.4015900	total: 10.7s	remaining: 625ms
189:	learn: 0.4015042	total: 10.8s	remaining: 568ms
190:	learn: 0.4014982	total: 10.8s	remaining: 511ms
191:	learn: 0.4013837	total: 10.9s	remaining: 454ms
192:	learn: 0.4012804	total: 11s	remaining: 398ms
193:	learn: 0.4011317	total: 11s	remaining: 341ms
194:	learn: 0.4008761	total: 11.1s	remaining: 284ms
195:	learn: 0.4007315	total: 11.1s	remaining: 227ms
196:	learn: 0.4005309	total: 11.2s	remaining: 170ms
197:	learn: 0.4002038	total: 11.2s	remaining: 114ms
198:	learn: 0.4001222	total: 11.3s	remaining: 56.8ms
199:	learn: 0.3997486	total: 11.3s	remaining: 0us
```

```
0:      learn: 0.6445774      total: 52.4ms     remaining: 10.4s
1:      learn: 0.5952020      total: 101ms      remaining: 10s
2:      learn: 0.5667249      total: 161ms      remaining: 10.6s
3:      learn: 0.5433972      total: 210ms      remaining: 10.3s
4:      learn: 0.5282347      total: 257ms      remaining: 10s
5:      learn: 0.5113883      total: 316ms      remaining: 10.2s
6:      learn: 0.5012127      total: 377ms      remaining: 10.4s
7:      learn: 0.4927875      total: 440ms      remaining: 10.6s
8:      learn: 0.4849744      total: 495ms      remaining: 10.5s
9:      learn: 0.4789885      total: 564ms      remaining: 10.7s
10:     learn: 0.4745176      total: 613ms      remaining: 10.5s
11:     learn: 0.4700081      total: 673ms      remaining: 10.5s
12:     learn: 0.4653736      total: 717ms      remaining: 10.3s
13:     learn: 0.4636785      total: 775ms      remaining: 10.3s
14:     learn: 0.4595443      total: 830ms      remaining: 10.2s
15:     learn: 0.4571631      total: 881ms      remaining: 10.1s
16:     learn: 0.4554240      total: 936ms      remaining: 10.1s
17:     learn: 0.4536335      total: 994ms      remaining: 10.1s
18:     learn: 0.4521254      total: 1.06s      remaining: 10.1s
19:     learn: 0.4504081      total: 1.15s      remaining: 10.4s
20:     learn: 0.4493400      total: 1.2s       remaining: 10.3s
21:     learn: 0.4485311      total: 1.25s      remaining: 10.1s
22:     learn: 0.4476719      total: 1.3s       remaining: 10s
23:     learn: 0.4461731      total: 1.35s      remaining: 9.91s
24:     learn: 0.4447935      total: 1.43s      remaining: 10s
25:     learn: 0.4440639      total: 1.49s      remaining: 9.95s
26:     learn: 0.4436794      total: 1.55s      remaining: 9.91s
27:     learn: 0.4425453      total: 1.6s       remaining: 9.85s
28:     learn: 0.4421397      total: 1.67s      remaining: 9.84s
29:     learn: 0.4412107      total: 1.74s      remaining: 9.84s
30:     learn: 0.4408805      total: 1.78s      remaining: 9.73s
31:     learn: 0.4404431      total: 1.83s      remaining: 9.63s
32:     learn: 0.4400366      total: 1.88s      remaining: 9.51s
33:     learn: 0.4392070      total: 1.94s      remaining: 9.48s
34:     learn: 0.4383764      total: 2.02s      remaining: 9.54s
35:     learn: 0.4374714      total: 2.07s      remaining: 9.43s
36:     learn: 0.4369191      total: 2.17s      remaining: 9.55s
37:     learn: 0.4358964      total: 2.23s      remaining: 9.49s
38:     learn: 0.4355517      total: 2.28s      remaining: 9.42s
39:     learn: 0.4349881      total: 2.33s      remaining: 9.32s
40:     learn: 0.4347749      total: 2.39s      remaining: 9.26s
41:     learn: 0.4342792      total: 2.44s      remaining: 9.19s
42:     learn: 0.4338999      total: 2.5s       remaining: 9.11s
43:     learn: 0.4335110      total: 2.54s      remaining: 9.02s
44:     learn: 0.4327915      total: 2.6s       remaining: 8.96s
45:     learn: 0.4320816      total: 2.66s      remaining: 8.9s
46:     learn: 0.4315148      total: 2.72s      remaining: 8.84s
47:     learn: 0.4314206      total: 2.76s      remaining: 8.74s
```

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48:     learn: 0.4311398     total: 2.8s      remaining: 8.63s
49:     learn: 0.4310444     total: 2.86s     remaining: 8.58s
50:     learn: 0.4307083     total: 2.92s     remaining: 8.53s
51:     learn: 0.4301216     total: 2.97s     remaining: 8.46s
52:     learn: 0.4295338     total: 3.04s     remaining: 8.45s
53:     learn: 0.4292099     total: 3.1s      remaining: 8.39s
54:     learn: 0.4290775     total: 3.16s     remaining: 8.34s
55:     learn: 0.4287692     total: 3.22s     remaining: 8.27s
56:     learn: 0.4287692     total: 3.23s     remaining: 8.11s
57:     learn: 0.4286181     total: 3.28s     remaining: 8.04s
58:     learn: 0.4284556     total: 3.33s     remaining: 7.96s
59:     learn: 0.4282833     total: 3.38s     remaining: 7.88s
60:     learn: 0.4281143     total: 3.42s     remaining: 7.8s
61:     learn: 0.4279557     total: 3.48s     remaining: 7.75s
62:     learn: 0.4274863     total: 3.53s     remaining: 7.69s
63:     learn: 0.4272804     total: 3.58s     remaining: 7.6s
64:     learn: 0.4270463     total: 3.64s     remaining: 7.55s
65:     learn: 0.4269186     total: 3.7s      remaining: 7.51s
66:     learn: 0.4266850     total: 3.76s     remaining: 7.46s
67:     learn: 0.4262733     total: 3.8s      remaining: 7.38s
68:     learn: 0.4255961     total: 3.85s     remaining: 7.32s
69:     learn: 0.4254672     total: 3.91s     remaining: 7.26s
70:     learn: 0.4254672     total: 3.93s     remaining: 7.15s
71:     learn: 0.4247718     total: 3.98s     remaining: 7.08s
72:     learn: 0.4245324     total: 4.03s     remaining: 7.01s
73:     learn: 0.4244684     total: 4.08s     remaining: 6.95s
74:     learn: 0.4243841     total: 4.13s     remaining: 6.89s
75:     learn: 0.4242840     total: 4.18s     remaining: 6.82s
76:     learn: 0.4240391     total: 4.25s     remaining: 6.79s
77:     learn: 0.4237704     total: 4.29s     remaining: 6.72s
78:     learn: 0.4234785     total: 4.35s     remaining: 6.67s
79:     learn: 0.4232194     total: 4.39s     remaining: 6.59s
80:     learn: 0.4230672     total: 4.46s     remaining: 6.54s
81:     learn: 0.4228363     total: 4.5s      remaining: 6.47s
82:     learn: 0.4226825     total: 4.55s     remaining: 6.42s
83:     learn: 0.4224944     total: 4.61s     remaining: 6.37s
84:     learn: 0.4223932     total: 4.66s     remaining: 6.31s
85:     learn: 0.4223418     total: 4.71s     remaining: 6.25s
86:     learn: 0.4217998     total: 4.78s     remaining: 6.21s
87:     learn: 0.4215724     total: 4.82s     remaining: 6.14s
88:     learn: 0.4211924     total: 4.88s     remaining: 6.08s
89:     learn: 0.4210725     total: 4.94s     remaining: 6.04s
90:     learn: 0.4208858     total: 4.98s     remaining: 5.97s
91:     learn: 0.4207318     total: 5.05s     remaining: 5.93s
92:     learn: 0.4206147     total: 5.09s     remaining: 5.86s
93:     learn: 0.4204282     total: 5.14s     remaining: 5.8s
94:     learn: 0.4203568     total: 5.2s      remaining: 5.74s
95:     learn: 0.4200264     total: 5.26s     remaining: 5.7s
```

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96:     learn: 0.4198555      total: 5.31s      remaining: 5.64s
97:     learn: 0.4195691      total: 5.38s      remaining: 5.6s
98:     learn: 0.4191059      total: 5.45s      remaining: 5.56s
99:     learn: 0.4190176      total: 5.5s       remaining: 5.5s
100:    learn: 0.4187752      total: 5.57s      remaining: 5.45s
101:    learn: 0.4185359      total: 5.65s      remaining: 5.43s
102:    learn: 0.4182527      total: 5.7s       remaining: 5.37s
103:    learn: 0.4178470      total: 5.75s      remaining: 5.31s
104:    learn: 0.4177670      total: 5.82s      remaining: 5.26s
105:    learn: 0.4176737      total: 5.86s      remaining: 5.2s
106:    learn: 0.4175274      total: 5.93s      remaining: 5.16s
107:    learn: 0.4173160      total: 5.99s      remaining: 5.11s
108:    learn: 0.4169723      total: 6.05s      remaining: 5.05s
109:    learn: 0.4163141      total: 6.12s      remaining: 5.01s
110:    learn: 0.4157964      total: 6.2s       remaining: 4.97s
111:    learn: 0.4155804      total: 6.25s      remaining: 4.91s
112:    learn: 0.4155062      total: 6.32s      remaining: 4.87s
113:    learn: 0.4150316      total: 6.37s      remaining: 4.8s
114:    learn: 0.4149665      total: 6.43s      remaining: 4.75s
115:    learn: 0.4148997      total: 6.49s      remaining: 4.7s
116:    learn: 0.4146024      total: 6.55s      remaining: 4.65s
117:    learn: 0.4141608      total: 6.64s      remaining: 4.61s
118:    learn: 0.4140339      total: 6.7s       remaining: 4.56s
119:    learn: 0.4137542      total: 6.76s      remaining: 4.5s
120:    learn: 0.4136482      total: 6.82s      remaining: 4.45s
121:    learn: 0.4134676      total: 6.88s      remaining: 4.4s
122:    learn: 0.4130542      total: 6.93s      remaining: 4.34s
123:    learn: 0.4126543      total: 6.98s      remaining: 4.28s
124:    learn: 0.4124545      total: 7.07s      remaining: 4.24s
125:    learn: 0.4122897      total: 7.13s      remaining: 4.19s
126:    learn: 0.4120152      total: 7.18s      remaining: 4.13s
127:    learn: 0.4117589      total: 7.23s      remaining: 4.07s
128:    learn: 0.4115986      total: 7.28s      remaining: 4.01s
129:    learn: 0.4113925      total: 7.34s      remaining: 3.95s
130:    learn: 0.4111452      total: 7.4s       remaining: 3.9s
131:    learn: 0.4110774      total: 7.45s      remaining: 3.84s
132:    learn: 0.4106565      total: 7.5s       remaining: 3.78s
133:    learn: 0.4103959      total: 7.57s      remaining: 3.73s
134:    learn: 0.4095857      total: 7.62s      remaining: 3.67s
135:    learn: 0.4094237      total: 7.68s      remaining: 3.62s
136:    learn: 0.4092113      total: 7.74s      remaining: 3.56s
137:    learn: 0.4091161      total: 7.8s       remaining: 3.5s
138:    learn: 0.4089258      total: 7.86s      remaining: 3.45s
139:    learn: 0.4087554      total: 7.91s      remaining: 3.39s
140:    learn: 0.4086923      total: 7.99s      remaining: 3.34s
141:    learn: 0.4084293      total: 8.04s      remaining: 3.28s
142:    learn: 0.4083347      total: 8.09s      remaining: 3.23s
143:    learn: 0.4081929      total: 8.15s      remaining: 3.17s
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144:     learn: 0.4080771     total: 8.2s     remaining: 3.11s
145:     learn: 0.4077950     total: 8.27s    remaining: 3.06s
146:     learn: 0.4076599     total: 8.32s    remaining: 3s
147:     learn: 0.4074392     total: 8.39s    remaining: 2.95s
148:     learn: 0.4073200     total: 8.44s    remaining: 2.89s
149:     learn: 0.4070869     total: 8.49s    remaining: 2.83s
150:     learn: 0.4069151     total: 8.54s    remaining: 2.77s
151:     learn: 0.4067708     total: 8.6s     remaining: 2.71s
152:     learn: 0.4067271     total: 8.64s    remaining: 2.65s
153:     learn: 0.4066240     total: 8.71s    remaining: 2.6s
154:     learn: 0.4065421     total: 8.77s    remaining: 2.54s
155:     learn: 0.4063126     total: 8.84s    remaining: 2.49s
156:     learn: 0.4061644     total: 8.89s    remaining: 2.43s
157:     learn: 0.4060166     total: 8.96s    remaining: 2.38s
158:     learn: 0.4057547     total: 9.02s    remaining: 2.33s
159:     learn: 0.4055052     total: 9.08s    remaining: 2.27s
160:     learn: 0.4053592     total: 9.13s    remaining: 2.21s
161:     learn: 0.4050020     total: 9.19s    remaining: 2.15s
162:     learn: 0.4046153     total: 9.28s    remaining: 2.11s
163:     learn: 0.4045296     total: 9.37s    remaining: 2.06s
164:     learn: 0.4042089     total: 9.42s    remaining: 2s
165:     learn: 0.4041297     total: 9.47s    remaining: 1.94s
166:     learn: 0.4039348     total: 9.53s    remaining: 1.88s
167:     learn: 0.4033972     total: 9.59s    remaining: 1.83s
168:     learn: 0.4031334     total: 9.64s    remaining: 1.77s
169:     learn: 0.4028486     total: 9.7s     remaining: 1.71s
170:     learn: 0.4027341     total: 9.78s    remaining: 1.66s
171:     learn: 0.4025564     total: 9.83s    remaining: 1.6s
172:     learn: 0.4024009     total: 9.88s    remaining: 1.54s
173:     learn: 0.4023244     total: 9.94s    remaining: 1.49s
174:     learn: 0.4019597     total: 10s      remaining: 1.43s
175:     learn: 0.4018408     total: 10.1s    remaining: 1.37s
176:     learn: 0.4016714     total: 10.1s    remaining: 1.32s
177:     learn: 0.4016551     total: 10.2s    remaining: 1.26s
178:     learn: 0.4014580     total: 10.2s    remaining: 1.2s
179:     learn: 0.4013000     total: 10.3s    remaining: 1.15s
180:     learn: 0.4011660     total: 10.4s    remaining: 1.09s
181:     learn: 0.4011440     total: 10.4s    remaining: 1.03s
182:     learn: 0.4010479     total: 10.5s    remaining: 975ms
183:     learn: 0.4009864     total: 10.6s    remaining: 918ms
184:     learn: 0.4008514     total: 10.6s    remaining: 862ms
185:     learn: 0.4007818     total: 10.7s    remaining: 805ms
186:     learn: 0.4005193     total: 10.7s    remaining: 747ms
187:     learn: 0.4002446     total: 10.8s    remaining: 689ms
188:     learn: 0.3999944     total: 10.8s    remaining: 631ms
189:     learn: 0.3998377     total: 10.9s    remaining: 573ms
190:     learn: 0.3998180     total: 10.9s    remaining: 516ms
191:     learn: 0.3996409     total: 11s      remaining: 458ms
```

```
192:    learn: 0.3995661     total: 11.1s    remaining: 401ms
193:    learn: 0.3993482     total: 11.1s    remaining: 344ms
194:    learn: 0.3992429     total: 11.2s    remaining: 287ms
195:    learn: 0.3989999     total: 11.3s    remaining: 230ms
196:    learn: 0.3989069     total: 11.3s    remaining: 172ms
197:    learn: 0.3988076     total: 11.4s    remaining: 115ms
198:    learn: 0.3986026     total: 11.4s    remaining: 57.4ms
199:    learn: 0.3983399     total: 11.5s    remaining: 0us
```
Mean train f1-score of data (CV) 25 is : 0.8150795773327862
Mean test f1-score of data (CV) 25 is : 0.8017121907308623

Shape of data 26 is :
(27302, 10)
Distribution of 26 is :
Yes   14101
No   13201
Name: TIMELY_RESPONSE, dtype: int64

<IPython.core.display.HTML object>

MetricVisualizer(layout=Layout(align_self='stretch', height='500px'))

Train f1_score [Yes]: for data 26 is : 0.8132361189007291
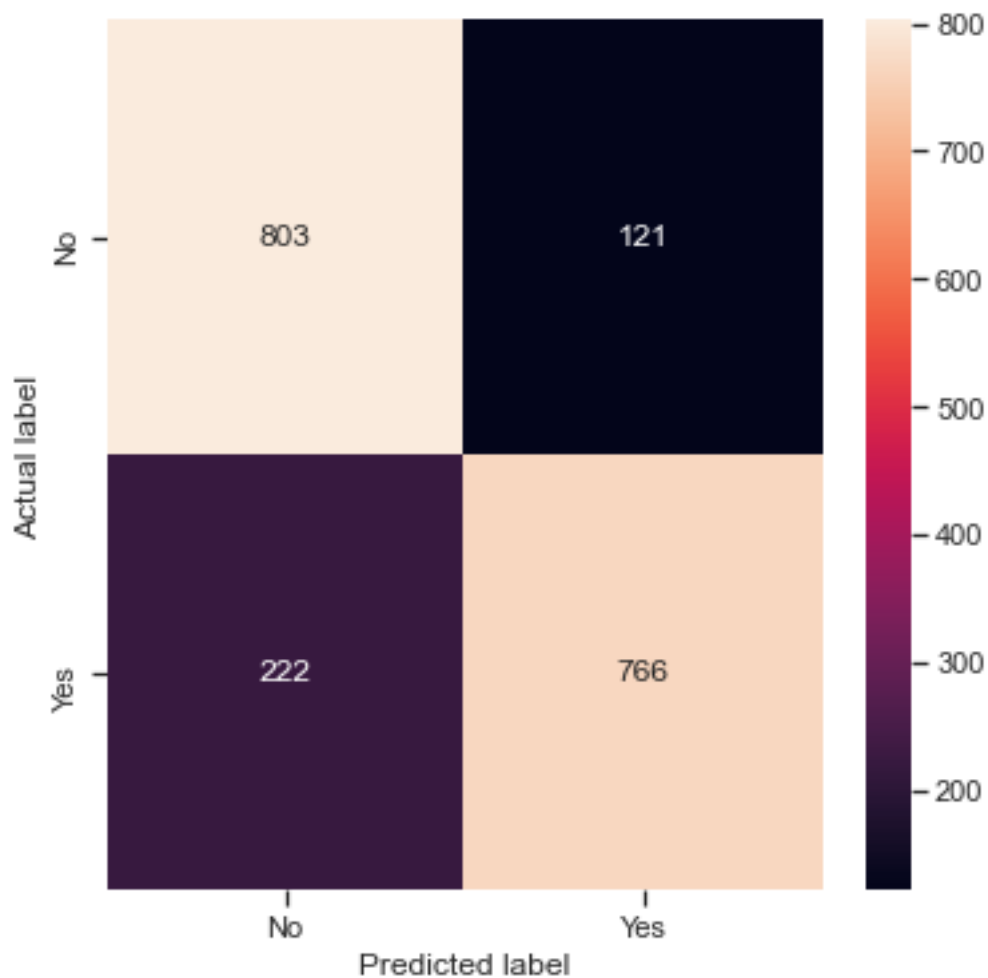Train f1_score [No]: for data 26 is : 0.8194283058331395

	precision	recall	f1-score	support
No	0.78	0.87	0.82	924
Yes	0.86	0.78	0.82	988
accuracy			0.82	1912
macro avg	0.82	0.82	0.82	1912
weighted avg	0.82	0.82	0.82	1912

```
Cross validation result for data 26 is :
0:      learn: 0.6339648       total: 53.5ms   remaining: 10.7s
1:      learn: 0.5928080       total: 108ms    remaining: 10.7s
2:      learn: 0.5678962       total: 156ms    remaining: 10.2s
3:      learn: 0.5428198       total: 216ms    remaining: 10.6s
4:      learn: 0.5256065       total: 269ms    remaining: 10.5s
5:      learn: 0.5086648       total: 332ms    remaining: 10.7s
6:      learn: 0.4986378       total: 380ms    remaining: 10.5s
7:      learn: 0.4894173       total: 431ms    remaining: 10.3s
8:      learn: 0.4816775       total: 497ms    remaining: 10.5s
9:      learn: 0.4756712       total: 550ms    remaining: 10.4s
10:     learn: 0.4710716       total: 598ms    remaining: 10.3s
11:     learn: 0.4678561       total: 668ms    remaining: 10.5s
12:     learn: 0.4643024       total: 715ms    remaining: 10.3s
13:     learn: 0.4616559       total: 784ms    remaining: 10.4s
14:     learn: 0.4594344       total: 871ms    remaining: 10.7s
15:     learn: 0.4579114       total: 922ms    remaining: 10.6s
```

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16:    learn: 0.4556895    total: 972ms    remaining: 10.5s
17:    learn: 0.4540904    total: 1.03s    remaining: 10.4s
18:    learn: 0.4527055    total: 1.07s    remaining: 10.2s
19:    learn: 0.4507999    total: 1.14s    remaining: 10.2s
20:    learn: 0.4496626    total: 1.2s     remaining: 10.2s
21:    learn: 0.4483941    total: 1.24s    remaining: 10s
22:    learn: 0.4472527    total: 1.29s    remaining: 9.93s
23:    learn: 0.4465064    total: 1.33s    remaining: 9.76s
24:    learn: 0.4455039    total: 1.38s    remaining: 9.63s
25:    learn: 0.4449323    total: 1.43s    remaining: 9.54s
26:    learn: 0.4443332    total: 1.47s    remaining: 9.43s
27:    learn: 0.4429032    total: 1.52s    remaining: 9.35s
28:    learn: 0.4424191    total: 1.58s    remaining: 9.35s
29:    learn: 0.4418077    total: 1.64s    remaining: 9.29s
30:    learn: 0.4411606    total: 1.7s     remaining: 9.24s
31:    learn: 0.4409215    total: 1.74s    remaining: 9.15s
32:    learn: 0.4403080    total: 1.79s    remaining: 9.04s
33:    learn: 0.4399412    total: 1.87s    remaining: 9.14s
34:    learn: 0.4396411    total: 1.92s    remaining: 9.05s
35:    learn: 0.4392548    total: 1.97s    remaining: 8.97s
36:    learn: 0.4390943    total: 2.03s    remaining: 8.96s
37:    learn: 0.4385660    total: 2.09s    remaining: 8.92s
38:    learn: 0.4383811    total: 2.14s    remaining: 8.84s
39:    learn: 0.4380356    total: 2.2s     remaining: 8.79s
40:    learn: 0.4379487    total: 2.24s    remaining: 8.69s
41:    learn: 0.4373375    total: 2.3s     remaining: 8.66s
42:    learn: 0.4369893    total: 2.36s    remaining: 8.62s
43:    learn: 0.4360317    total: 2.43s    remaining: 8.62s
44:    learn: 0.4356340    total: 2.48s    remaining: 8.53s
45:    learn: 0.4354274    total: 2.54s    remaining: 8.49s
46:    learn: 0.4351925    total: 2.58s    remaining: 8.4s
47:    learn: 0.4349626    total: 2.64s    remaining: 8.35s
48:    learn: 0.4339842    total: 2.7s     remaining: 8.32s
49:    learn: 0.4337393    total: 2.77s    remaining: 8.3s
50:    learn: 0.4335976    total: 2.83s    remaining: 8.26s
51:    learn: 0.4334149    total: 2.88s    remaining: 8.2s
52:    learn: 0.4332769    total: 2.93s    remaining: 8.12s
53:    learn: 0.4326182    total: 2.98s    remaining: 8.06s
54:    learn: 0.4324576    total: 3.03s    remaining: 8s
55:    learn: 0.4323043    total: 3.08s    remaining: 7.93s
56:    learn: 0.4318565    total: 3.13s    remaining: 7.85s
57:    learn: 0.4316560    total: 3.18s    remaining: 7.78s
58:    learn: 0.4311394    total: 3.23s    remaining: 7.72s
59:    learn: 0.4308331    total: 3.29s    remaining: 7.68s
60:    learn: 0.4308052    total: 3.34s    remaining: 7.62s
61:    learn: 0.4305411    total: 3.39s    remaining: 7.55s
62:    learn: 0.4303689    total: 3.44s    remaining: 7.48s
63:    learn: 0.4303171    total: 3.49s    remaining: 7.41s
```

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64:      learn: 0.4302857      total: 3.55s      remaining: 7.38s
65:      learn: 0.4301212      total: 3.62s      remaining: 7.36s
66:      learn: 0.4299573      total: 3.67s      remaining: 7.29s
67:      learn: 0.4299482      total: 3.69s      remaining: 7.17s
68:      learn: 0.4294824      total: 3.74s      remaining: 7.1s
69:      learn: 0.4294335      total: 3.79s      remaining: 7.04s
70:      learn: 0.4291287      total: 3.84s      remaining: 6.98s
71:      learn: 0.4284566      total: 3.89s      remaining: 6.92s
72:      learn: 0.4282834      total: 3.94s      remaining: 6.85s
73:      learn: 0.4281206      total: 4s         remaining: 6.81s
74:      learn: 0.4272643      total: 4.07s      remaining: 6.78s
75:      learn: 0.4271064      total: 4.14s      remaining: 6.75s
76:      learn: 0.4270326      total: 4.18s      remaining: 6.67s
77:      learn: 0.4268740      total: 4.24s      remaining: 6.63s
78:      learn: 0.4267253      total: 4.28s      remaining: 6.56s
79:      learn: 0.4264442      total: 4.33s      remaining: 6.5s
80:      learn: 0.4262181      total: 4.38s      remaining: 6.43s
81:      learn: 0.4261265      total: 4.42s      remaining: 6.37s
82:      learn: 0.4259115      total: 4.49s      remaining: 6.33s
83:      learn: 0.4256461      total: 4.54s      remaining: 6.26s
84:      learn: 0.4254357      total: 4.58s      remaining: 6.2s
85:      learn: 0.4250824      total: 4.63s      remaining: 6.14s
86:      learn: 0.4245772      total: 4.69s      remaining: 6.1s
87:      learn: 0.4244412      total: 4.76s      remaining: 6.06s
88:      learn: 0.4243860      total: 4.8s       remaining: 5.99s
89:      learn: 0.4242037      total: 4.87s      remaining: 5.95s
90:      learn: 0.4241372      total: 4.92s      remaining: 5.89s
91:      learn: 0.4239994      total: 4.96s      remaining: 5.82s
92:      learn: 0.4232989      total: 5.01s      remaining: 5.77s
93:      learn: 0.4226369      total: 5.08s      remaining: 5.73s
94:      learn: 0.4222744      total: 5.13s      remaining: 5.67s
95:      learn: 0.4219563      total: 5.18s      remaining: 5.62s
96:      learn: 0.4216228      total: 5.25s      remaining: 5.57s
97:      learn: 0.4215582      total: 5.29s      remaining: 5.51s
98:      learn: 0.4214140      total: 5.36s      remaining: 5.47s
99:      learn: 0.4212694      total: 5.41s      remaining: 5.41s
100:     learn: 0.4212044      total: 5.46s      remaining: 5.35s
101:     learn: 0.4211080      total: 5.52s      remaining: 5.3s
102:     learn: 0.4210191      total: 5.57s      remaining: 5.25s
103:     learn: 0.4207712      total: 5.63s      remaining: 5.2s
104:     learn: 0.4207712      total: 5.69s      remaining: 5.14s
105:     learn: 0.4203310      total: 5.73s      remaining: 5.08s
106:     learn: 0.4201563      total: 5.78s      remaining: 5.03s
107:     learn: 0.4201563      total: 5.8s       remaining: 4.94s
108:     learn: 0.4193283      total: 5.86s      remaining: 4.89s
109:     learn: 0.4189945      total: 5.91s      remaining: 4.83s
110:     learn: 0.4184775      total: 5.97s      remaining: 4.78s
111:     learn: 0.4183645      total: 6.02s      remaining: 4.73s
```

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112:    learn: 0.4182094    total: 6.07s    remaining: 4.67s
113:    learn: 0.4176553    total: 6.14s    remaining: 4.63s
114:    learn: 0.4176500    total: 6.18s    remaining: 4.57s
115:    learn: 0.4172647    total: 6.24s    remaining: 4.52s
116:    learn: 0.4171434    total: 6.29s    remaining: 4.46s
117:    learn: 0.4168045    total: 6.34s    remaining: 4.41s
118:    learn: 0.4166920    total: 6.41s    remaining: 4.36s
119:    learn: 0.4166367    total: 6.45s    remaining: 4.3s
120:    learn: 0.4161847    total: 6.52s    remaining: 4.26s
121:    learn: 0.4160181    total: 6.58s    remaining: 4.21s
122:    learn: 0.4158207    total: 6.64s    remaining: 4.16s
123:    learn: 0.4156947    total: 6.69s    remaining: 4.1s
124:    learn: 0.4155907    total: 6.76s    remaining: 4.05s
125:    learn: 0.4154144    total: 6.82s    remaining: 4s
126:    learn: 0.4152638    total: 6.87s    remaining: 3.95s
127:    learn: 0.4144715    total: 6.93s    remaining: 3.9s
128:    learn: 0.4142212    total: 7s       remaining: 3.85s
129:    learn: 0.4139664    total: 7.05s    remaining: 3.8s
130:    learn: 0.4137385    total: 7.11s    remaining: 3.75s
131:    learn: 0.4134545    total: 7.16s    remaining: 3.69s
132:    learn: 0.4132520    total: 7.22s    remaining: 3.64s
133:    learn: 0.4131644    total: 7.29s    remaining: 3.59s
134:    learn: 0.4128783    total: 7.36s    remaining: 3.54s
135:    learn: 0.4127692    total: 7.42s    remaining: 3.49s
136:    learn: 0.4126243    total: 7.47s    remaining: 3.43s
137:    learn: 0.4125254    total: 7.52s    remaining: 3.38s
138:    learn: 0.4124564    total: 7.61s    remaining: 3.34s
139:    learn: 0.4122689    total: 7.66s    remaining: 3.28s
140:    learn: 0.4121618    total: 7.71s    remaining: 3.22s
141:    learn: 0.4120111    total: 7.78s    remaining: 3.18s
142:    learn: 0.4118435    total: 7.83s    remaining: 3.12s
143:    learn: 0.4117589    total: 7.88s    remaining: 3.06s
144:    learn: 0.4115356    total: 7.93s    remaining: 3.01s
145:    learn: 0.4114660    total: 7.97s    remaining: 2.95s
146:    learn: 0.4113034    total: 8.02s    remaining: 2.89s
147:    learn: 0.4112153    total: 8.06s    remaining: 2.83s
148:    learn: 0.4106846    total: 8.11s    remaining: 2.78s
149:    learn: 0.4105152    total: 8.16s    remaining: 2.72s
150:    learn: 0.4104694    total: 8.24s    remaining: 2.67s
151:    learn: 0.4103265    total: 8.29s    remaining: 2.62s
152:    learn: 0.4102035    total: 8.35s    remaining: 2.56s
153:    learn: 0.4101079    total: 8.41s    remaining: 2.51s
154:    learn: 0.4099763    total: 8.48s    remaining: 2.46s
155:    learn: 0.4098556    total: 8.53s    remaining: 2.41s
156:    learn: 0.4097077    total: 8.58s    remaining: 2.35s
157:    learn: 0.4095514    total: 8.63s    remaining: 2.29s
158:    learn: 0.4095414    total: 8.69s    remaining: 2.24s
159:    learn: 0.4095084    total: 8.73s    remaining: 2.18s
```

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160:    learn: 0.4091947    total: 8.78s    remaining: 2.13s
161:    learn: 0.4090275    total: 8.83s    remaining: 2.07s
162:    learn: 0.4088576    total: 8.88s    remaining: 2.01s
163:    learn: 0.4087679    total: 8.94s    remaining: 1.96s
164:    learn: 0.4086511    total: 8.99s    remaining: 1.91s
165:    learn: 0.4085361    total: 9.04s    remaining: 1.85s
166:    learn: 0.4084257    total: 9.08s    remaining: 1.79s
167:    learn: 0.4082395    total: 9.13s    remaining: 1.74s
168:    learn: 0.4080107    total: 9.18s    remaining: 1.68s
169:    learn: 0.4079419    total: 9.23s    remaining: 1.63s
170:    learn: 0.4078439    total: 9.29s    remaining: 1.57s
171:    learn: 0.4077145    total: 9.36s    remaining: 1.52s
172:    learn: 0.4076174    total: 9.41s    remaining: 1.47s
173:    learn: 0.4075421    total: 9.48s    remaining: 1.42s
174:    learn: 0.4073707    total: 9.53s    remaining: 1.36s
175:    learn: 0.4072019    total: 9.58s    remaining: 1.31s
176:    learn: 0.4071450    total: 9.63s    remaining: 1.25s
177:    learn: 0.4069594    total: 9.69s    remaining: 1.2s
178:    learn: 0.4068890    total: 9.74s    remaining: 1.14s
179:    learn: 0.4068822    total: 9.8s     remaining: 1.09s
180:    learn: 0.4067473    total: 9.85s    remaining: 1.03s
181:    learn: 0.4065851    total: 9.92s    remaining: 981ms
182:    learn: 0.4064083    total: 9.97s    remaining: 926ms
183:    learn: 0.4062465    total: 10s      remaining: 871ms
184:    learn: 0.4058609    total: 10.1s    remaining: 817ms
185:    learn: 0.4057091    total: 10.1s    remaining: 763ms
186:    learn: 0.4055905    total: 10.2s    remaining: 708ms
187:    learn: 0.4051619    total: 10.3s    remaining: 655ms
188:    learn: 0.4050639    total: 10.3s    remaining: 600ms
189:    learn: 0.4046946    total: 10.4s    remaining: 546ms
190:    learn: 0.4043900    total: 10.4s    remaining: 492ms
191:    learn: 0.4042068    total: 10.5s    remaining: 437ms
192:    learn: 0.4041460    total: 10.5s    remaining: 382ms
193:    learn: 0.4039797    total: 10.6s    remaining: 328ms
194:    learn: 0.4038496    total: 10.7s    remaining: 274ms
195:    learn: 0.4038343    total: 10.7s    remaining: 219ms
196:    learn: 0.4037344    total: 10.8s    remaining: 164ms
197:    learn: 0.4035065    total: 10.9s    remaining: 110ms
198:    learn: 0.4034082    total: 10.9s    remaining: 54.8ms
199:    learn: 0.4032869    total: 11s      remaining: 0us
0:      learn: 0.6323900    total: 47.2ms   remaining: 9.38s
1:      learn: 0.5983659    total: 97ms     remaining: 9.61s
2:      learn: 0.5711597    total: 145ms    remaining: 9.49s
3:      learn: 0.5445227    total: 191ms    remaining: 9.35s
4:      learn: 0.5274856    total: 271ms    remaining: 10.6s
5:      learn: 0.5100953    total: 321ms    remaining: 10.4s
6:      learn: 0.4981379    total: 389ms    remaining: 10.7s
7:      learn: 0.4902696    total: 451ms    remaining: 10.8s
```

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8:      learn: 0.4822296      total: 502ms      remaining: 10.7s
9:      learn: 0.4757204      total: 553ms      remaining: 10.5s
10:     learn: 0.4703253      total: 596ms      remaining: 10.2s
11:     learn: 0.4657766      total: 651ms      remaining: 10.2s
12:     learn: 0.4623868      total: 716ms      remaining: 10.3s
13:     learn: 0.4594157      total: 760ms      remaining: 10.1s
14:     learn: 0.4566928      total: 837ms      remaining: 10.3s
15:     learn: 0.4536372      total: 881ms      remaining: 10.1s
16:     learn: 0.4521595      total: 958ms      remaining: 10.3s
17:     learn: 0.4510632      total: 1.01s      remaining: 10.2s
18:     learn: 0.4495951      total: 1.08s      remaining: 10.3s
19:     learn: 0.4481393      total: 1.15s      remaining: 10.4s
20:     learn: 0.4469321      total: 1.19s      remaining: 10.2s
21:     learn: 0.4467057      total: 1.22s      remaining: 9.86s
22:     learn: 0.4450813      total: 1.28s      remaining: 9.87s
23:     learn: 0.4436768      total: 1.34s      remaining: 9.8s
24:     learn: 0.4428571      total: 1.4s       remaining: 9.8s
25:     learn: 0.4423874      total: 1.45s      remaining: 9.68s
26:     learn: 0.4413474      total: 1.5s       remaining: 9.6s
27:     learn: 0.4406245      total: 1.54s      remaining: 9.49s
28:     learn: 0.4399284      total: 1.58s      remaining: 9.33s
29:     learn: 0.4395656      total: 1.64s      remaining: 9.28s
30:     learn: 0.4388473      total: 1.69s      remaining: 9.2s
31:     learn: 0.4379724      total: 1.73s      remaining: 9.11s
32:     learn: 0.4375500      total: 1.78s      remaining: 9s
33:     learn: 0.4367755      total: 1.83s      remaining: 8.92s
34:     learn: 0.4364373      total: 1.88s      remaining: 8.84s
35:     learn: 0.4362245      total: 1.93s      remaining: 8.81s
36:     learn: 0.4355790      total: 2s         remaining: 8.8s
37:     learn: 0.4352158      total: 2.05s      remaining: 8.72s
38:     learn: 0.4347900      total: 2.12s      remaining: 8.74s
39:     learn: 0.4343892      total: 2.17s      remaining: 8.67s
40:     learn: 0.4340371      total: 2.21s      remaining: 8.58s
41:     learn: 0.4336108      total: 2.26s      remaining: 8.5s
42:     learn: 0.4326928      total: 2.33s      remaining: 8.52s
43:     learn: 0.4322112      total: 2.39s      remaining: 8.46s
44:     learn: 0.4319181      total: 2.46s      remaining: 8.47s
45:     learn: 0.4317018      total: 2.52s      remaining: 8.42s
46:     learn: 0.4315107      total: 2.57s      remaining: 8.38s
47:     learn: 0.4312306      total: 2.62s      remaining: 8.29s
48:     learn: 0.4311080      total: 2.67s      remaining: 8.24s
49:     learn: 0.4309428      total: 2.71s      remaining: 8.13s
50:     learn: 0.4307534      total: 2.77s      remaining: 8.09s
51:     learn: 0.4301704      total: 2.83s      remaining: 8.04s
52:     learn: 0.4299671      total: 2.87s      remaining: 7.97s
53:     learn: 0.4298151      total: 2.92s      remaining: 7.91s
54:     learn: 0.4294577      total: 2.97s      remaining: 7.83s
55:     learn: 0.4288814      total: 3.01s      remaining: 7.75s
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56:     learn: 0.4283387     total: 3.06s     remaining: 7.69s
57:     learn: 0.4277771     total: 3.13s     remaining: 7.65s
58:     learn: 0.4273914     total: 3.17s     remaining: 7.57s
59:     learn: 0.4268264     total: 3.23s     remaining: 7.53s
60:     learn: 0.4260622     total: 3.28s     remaining: 7.47s
61:     learn: 0.4260063     total: 3.32s     remaining: 7.4s
62:     learn: 0.4255417     total: 3.4s      remaining: 7.38s
63:     learn: 0.4253797     total: 3.45s     remaining: 7.34s
64:     learn: 0.4251710     total: 3.5s      remaining: 7.27s
65:     learn: 0.4248483     total: 3.54s     remaining: 7.2s
66:     learn: 0.4245157     total: 3.6s      remaining: 7.15s
67:     learn: 0.4237252     total: 3.65s     remaining: 7.08s
68:     learn: 0.4235987     total: 3.71s     remaining: 7.04s
69:     learn: 0.4232817     total: 3.76s     remaining: 6.98s
70:     learn: 0.4231193     total: 3.82s     remaining: 6.94s
71:     learn: 0.4229665     total: 3.87s     remaining: 6.88s
72:     learn: 0.4227306     total: 3.93s     remaining: 6.84s
73:     learn: 0.4223476     total: 3.99s     remaining: 6.8s
74:     learn: 0.4221938     total: 4.04s     remaining: 6.73s
75:     learn: 0.4221332     total: 4.09s     remaining: 6.67s
76:     learn: 0.4216489     total: 4.14s     remaining: 6.62s
77:     learn: 0.4215053     total: 4.2s      remaining: 6.57s
78:     learn: 0.4211505     total: 4.25s     remaining: 6.51s
79:     learn: 0.4209386     total: 4.32s     remaining: 6.48s
80:     learn: 0.4208171     total: 4.38s     remaining: 6.43s
81:     learn: 0.4204375     total: 4.43s     remaining: 6.38s
82:     learn: 0.4202800     total: 4.48s     remaining: 6.32s
83:     learn: 0.4200060     total: 4.53s     remaining: 6.25s
84:     learn: 0.4198339     total: 4.59s     remaining: 6.21s
85:     learn: 0.4195974     total: 4.64s     remaining: 6.15s
86:     learn: 0.4195362     total: 4.69s     remaining: 6.09s
87:     learn: 0.4194294     total: 4.75s     remaining: 6.04s
88:     learn: 0.4193433     total: 4.79s     remaining: 5.98s
89:     learn: 0.4190754     total: 4.84s     remaining: 5.92s
90:     learn: 0.4190271     total: 4.89s     remaining: 5.86s
91:     learn: 0.4188242     total: 4.94s     remaining: 5.8s
92:     learn: 0.4185538     total: 4.99s     remaining: 5.75s
93:     learn: 0.4184118     total: 5.05s     remaining: 5.69s
94:     learn: 0.4183932     total: 5.12s     remaining: 5.66s
95:     learn: 0.4183109     total: 5.18s     remaining: 5.61s
96:     learn: 0.4182632     total: 5.25s     remaining: 5.57s
97:     learn: 0.4180617     total: 5.3s      remaining: 5.51s
98:     learn: 0.4178283     total: 5.38s     remaining: 5.48s
99:     learn: 0.4178139     total: 5.4s      remaining: 5.4s
100:    learn: 0.4170028     total: 5.45s     remaining: 5.34s
101:    learn: 0.4169973     total: 5.5s      remaining: 5.29s
102:    learn: 0.4164756     total: 5.55s     remaining: 5.22s
103:    learn: 0.4164443     total: 5.61s     remaining: 5.17s
```

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104:    learn: 0.4158633      total: 5.66s    remaining: 5.12s
105:    learn: 0.4157645      total: 5.7s     remaining: 5.05s
106:    learn: 0.4155239      total: 5.77s    remaining: 5.01s
107:    learn: 0.4152263      total: 5.82s    remaining: 4.96s
108:    learn: 0.4148957      total: 5.88s    remaining: 4.91s
109:    learn: 0.4148381      total: 5.93s    remaining: 4.86s
110:    learn: 0.4146606      total: 6s       remaining: 4.81s
111:    learn: 0.4146022      total: 6.05s    remaining: 4.75s
112:    learn: 0.4141631      total: 6.11s    remaining: 4.7s
113:    learn: 0.4139141      total: 6.15s    remaining: 4.64s
114:    learn: 0.4135384      total: 6.2s     remaining: 4.58s
115:    learn: 0.4130187      total: 6.24s    remaining: 4.52s
116:    learn: 0.4128341      total: 6.33s    remaining: 4.49s
117:    learn: 0.4126287      total: 6.38s    remaining: 4.43s
118:    learn: 0.4125730      total: 6.42s    remaining: 4.37s
119:    learn: 0.4123866      total: 6.48s    remaining: 4.32s
120:    learn: 0.4119564      total: 6.54s    remaining: 4.27s
121:    learn: 0.4117229      total: 6.6s     remaining: 4.22s
122:    learn: 0.4116733      total: 6.64s    remaining: 4.16s
123:    learn: 0.4116457      total: 6.69s    remaining: 4.1s
124:    learn: 0.4112168      total: 6.74s    remaining: 4.04s
125:    learn: 0.4111777      total: 6.79s    remaining: 3.98s
126:    learn: 0.4111055      total: 6.84s    remaining: 3.93s
127:    learn: 0.4107691      total: 6.88s    remaining: 3.87s
128:    learn: 0.4103824      total: 6.93s    remaining: 3.81s
129:    learn: 0.4100413      total: 6.99s    remaining: 3.76s
130:    learn: 0.4100259      total: 7.03s    remaining: 3.7s
131:    learn: 0.4098305      total: 7.08s    remaining: 3.65s
132:    learn: 0.4097987      total: 7.13s    remaining: 3.59s
133:    learn: 0.4096961      total: 7.18s    remaining: 3.54s
134:    learn: 0.4096150      total: 7.23s    remaining: 3.48s
135:    learn: 0.4094322      total: 7.28s    remaining: 3.42s
136:    learn: 0.4092651      total: 7.34s    remaining: 3.38s
137:    learn: 0.4089759      total: 7.39s    remaining: 3.32s
138:    learn: 0.4082431      total: 7.44s    remaining: 3.27s
139:    learn: 0.4081876      total: 7.48s    remaining: 3.21s
140:    learn: 0.4075865      total: 7.54s    remaining: 3.16s
141:    learn: 0.4073301      total: 7.6s     remaining: 3.1s
142:    learn: 0.4072049      total: 7.64s    remaining: 3.05s
143:    learn: 0.4071983      total: 7.69s    remaining: 2.99s
144:    learn: 0.4071830      total: 7.74s    remaining: 2.94s
145:    learn: 0.4070177      total: 7.81s    remaining: 2.89s
146:    learn: 0.4065067      total: 7.86s    remaining: 2.83s
147:    learn: 0.4063846      total: 7.91s    remaining: 2.78s
148:    learn: 0.4061112      total: 7.97s    remaining: 2.73s
149:    learn: 0.4060551      total: 8.01s    remaining: 2.67s
150:    learn: 0.4058693      total: 8.05s    remaining: 2.61s
151:    learn: 0.4057108      total: 8.11s    remaining: 2.56s
```

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152:    learn: 0.4051732    total: 8.16s    remaining: 2.51s
153:    learn: 0.4049567    total: 8.21s    remaining: 2.45s
154:    learn: 0.4049482    total: 8.25s    remaining: 2.4s
155:    learn: 0.4047092    total: 8.3s     remaining: 2.34s
156:    learn: 0.4044856    total: 8.35s    remaining: 2.29s
157:    learn: 0.4043458    total: 8.4s     remaining: 2.23s
158:    learn: 0.4042857    total: 8.47s    remaining: 2.18s
159:    learn: 0.4040376    total: 8.54s    remaining: 2.14s
160:    learn: 0.4038608    total: 8.6s     remaining: 2.08s
161:    learn: 0.4037454    total: 8.65s    remaining: 2.03s
162:    learn: 0.4036304    total: 8.7s     remaining: 1.98s
163:    learn: 0.4032899    total: 8.75s    remaining: 1.92s
164:    learn: 0.4030115    total: 8.8s     remaining: 1.87s
165:    learn: 0.4029278    total: 8.85s    remaining: 1.81s
166:    learn: 0.4026700    total: 8.9s     remaining: 1.76s
167:    learn: 0.4025451    total: 8.95s    remaining: 1.71s
168:    learn: 0.4023958    total: 9.01s    remaining: 1.65s
169:    learn: 0.4022609    total: 9.05s    remaining: 1.6s
170:    learn: 0.4021257    total: 9.1s     remaining: 1.54s
171:    learn: 0.4019209    total: 9.15s    remaining: 1.49s
172:    learn: 0.4017450    total: 9.21s    remaining: 1.44s
173:    learn: 0.4015912    total: 9.26s    remaining: 1.38s
174:    learn: 0.4014578    total: 9.32s    remaining: 1.33s
175:    learn: 0.4012020    total: 9.36s    remaining: 1.28s
176:    learn: 0.4010881    total: 9.4s     remaining: 1.22s
177:    learn: 0.4009933    total: 9.46s    remaining: 1.17s
178:    learn: 0.4009530    total: 9.51s    remaining: 1.11s
179:    learn: 0.4007236    total: 9.56s    remaining: 1.06s
180:    learn: 0.4003706    total: 9.64s    remaining: 1.01s
181:    learn: 0.4000731    total: 9.7s     remaining: 960ms
182:    learn: 0.4000218    total: 9.75s    remaining: 906ms
183:    learn: 0.3997906    total: 9.8s     remaining: 853ms
184:    learn: 0.3996807    total: 9.86s    remaining: 799ms
185:    learn: 0.3993638    total: 9.92s    remaining: 746ms
186:    learn: 0.3992151    total: 9.97s    remaining: 693ms
187:    learn: 0.3990061    total: 10s      remaining: 640ms
188:    learn: 0.3988969    total: 10.1s    remaining: 586ms
189:    learn: 0.3987545    total: 10.1s    remaining: 533ms
190:    learn: 0.3985989    total: 10.2s    remaining: 480ms
191:    learn: 0.3983914    total: 10.2s    remaining: 427ms
192:    learn: 0.3982855    total: 10.3s    remaining: 373ms
193:    learn: 0.3981772    total: 10.4s    remaining: 322ms
194:    learn: 0.3981007    total: 10.5s    remaining: 268ms
195:    learn: 0.3980001    total: 10.5s    remaining: 214ms
196:    learn: 0.3979833    total: 10.5s    remaining: 161ms
197:    learn: 0.3976770    total: 10.6s    remaining: 107ms
198:    learn: 0.3975563    total: 10.6s    remaining: 53.5ms
199:    learn: 0.3974888    total: 10.7s    remaining: 0us
```

```
0:      learn: 0.6318208      total: 42.6ms    remaining: 8.47s
1:      learn: 0.5904880      total: 89ms      remaining: 8.81s
2:      learn: 0.5612304      total: 146ms     remaining: 9.61s
3:      learn: 0.5428031      total: 200ms     remaining: 9.81s
4:      learn: 0.5241077      total: 245ms     remaining: 9.55s
5:      learn: 0.5101528      total: 292ms     remaining: 9.45s
6:      learn: 0.5008020      total: 336ms     remaining: 9.25s
7:      learn: 0.4912021      total: 395ms     remaining: 9.48s
8:      learn: 0.4847489      total: 448ms     remaining: 9.51s
9:      learn: 0.4792890      total: 518ms     remaining: 9.85s
10:     learn: 0.4732932      total: 571ms     remaining: 9.81s
11:     learn: 0.4684260      total: 645ms     remaining: 10.1s
12:     learn: 0.4654201      total: 691ms     remaining: 9.94s
13:     learn: 0.4605730      total: 759ms     remaining: 10.1s
14:     learn: 0.4589793      total: 820ms     remaining: 10.1s
15:     learn: 0.4574976      total: 868ms     remaining: 9.99s
16:     learn: 0.4557101      total: 907ms     remaining: 9.76s
17:     learn: 0.4533747      total: 963ms     remaining: 9.74s
18:     learn: 0.4510407      total: 1.05s     remaining: 10s
19:     learn: 0.4496247      total: 1.13s     remaining: 10.1s
20:     learn: 0.4480123      total: 1.18s     remaining: 10s
21:     learn: 0.4462370      total: 1.24s     remaining: 10s
22:     learn: 0.4451217      total: 1.29s     remaining: 9.96s
23:     learn: 0.4446120      total: 1.35s     remaining: 9.9s
24:     learn: 0.4439536      total: 1.4s      remaining: 9.77s
25:     learn: 0.4426950      total: 1.45s     remaining: 9.69s
26:     learn: 0.4413820      total: 1.52s     remaining: 9.72s
27:     learn: 0.4408760      total: 1.57s     remaining: 9.65s
28:     learn: 0.4404105      total: 1.63s     remaining: 9.59s
29:     learn: 0.4389517      total: 1.68s     remaining: 9.54s
30:     learn: 0.4382872      total: 1.75s     remaining: 9.51s
31:     learn: 0.4378027      total: 1.81s     remaining: 9.5s
32:     learn: 0.4374411      total: 1.85s     remaining: 9.37s
33:     learn: 0.4367695      total: 1.9s      remaining: 9.27s
34:     learn: 0.4364076      total: 1.97s     remaining: 9.27s
35:     learn: 0.4360772      total: 2.01s     remaining: 9.17s
36:     learn: 0.4357644      total: 2.07s     remaining: 9.14s
37:     learn: 0.4351655      total: 2.14s     remaining: 9.12s
38:     learn: 0.4348839      total: 2.18s     remaining: 9.02s
39:     learn: 0.4340778      total: 2.23s     remaining: 8.92s
40:     learn: 0.4340709      total: 2.28s     remaining: 8.85s
41:     learn: 0.4337450      total: 2.33s     remaining: 8.76s
42:     learn: 0.4335521      total: 2.4s      remaining: 8.75s
43:     learn: 0.4331495      total: 2.45s     remaining: 8.68s
44:     learn: 0.4326591      total: 2.5s      remaining: 8.61s
45:     learn: 0.4326479      total: 2.54s     remaining: 8.5s
46:     learn: 0.4325087      total: 2.61s     remaining: 8.49s
47:     learn: 0.4321305      total: 2.66s     remaining: 8.43s
```

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48:     learn: 0.4317942     total: 2.7s      remaining: 8.33s
49:     learn: 0.4313023     total: 2.75s     remaining: 8.26s
50:     learn: 0.4310592     total: 2.8s      remaining: 8.19s
51:     learn: 0.4306057     total: 2.87s     remaining: 8.15s
52:     learn: 0.4304658     total: 2.91s     remaining: 8.08s
53:     learn: 0.4301260     total: 2.98s     remaining: 8.05s
54:     learn: 0.4299806     total: 3.03s     remaining: 8s
55:     learn: 0.4297212     total: 3.08s     remaining: 7.92s
56:     learn: 0.4293946     total: 3.13s     remaining: 7.85s
57:     learn: 0.4290366     total: 3.18s     remaining: 7.79s
58:     learn: 0.4285648     total: 3.23s     remaining: 7.72s
59:     learn: 0.4283971     total: 3.29s     remaining: 7.67s
60:     learn: 0.4281556     total: 3.33s     remaining: 7.6s
61:     learn: 0.4280074     total: 3.39s     remaining: 7.55s
62:     learn: 0.4276447     total: 3.44s     remaining: 7.49s
63:     learn: 0.4270992     total: 3.52s     remaining: 7.47s
64:     learn: 0.4270700     total: 3.55s     remaining: 7.37s
65:     learn: 0.4269632     total: 3.6s      remaining: 7.3s
66:     learn: 0.4264965     total: 3.64s     remaining: 7.23s
67:     learn: 0.4262925     total: 3.71s     remaining: 7.21s
68:     learn: 0.4257897     total: 3.77s     remaining: 7.16s
69:     learn: 0.4254428     total: 3.83s     remaining: 7.11s
70:     learn: 0.4252220     total: 3.87s     remaining: 7.03s
71:     learn: 0.4248950     total: 3.92s     remaining: 6.98s
72:     learn: 0.4247743     total: 3.98s     remaining: 6.92s
73:     learn: 0.4243602     total: 4.03s     remaining: 6.87s
74:     learn: 0.4242284     total: 4.09s     remaining: 6.82s
75:     learn: 0.4236363     total: 4.2s      remaining: 6.85s
76:     learn: 0.4234316     total: 4.26s     remaining: 6.8s
77:     learn: 0.4229123     total: 4.32s     remaining: 6.75s
78:     learn: 0.4227040     total: 4.41s     remaining: 6.75s
79:     learn: 0.4223685     total: 4.46s     remaining: 6.69s
80:     learn: 0.4222466     total: 4.52s     remaining: 6.64s
81:     learn: 0.4219292     total: 4.58s     remaining: 6.58s
82:     learn: 0.4217245     total: 4.63s     remaining: 6.52s
83:     learn: 0.4215482     total: 4.69s     remaining: 6.48s
84:     learn: 0.4212006     total: 4.74s     remaining: 6.41s
85:     learn: 0.4210548     total: 4.81s     remaining: 6.37s
86:     learn: 0.4206609     total: 4.85s     remaining: 6.3s
87:     learn: 0.4203007     total: 4.91s     remaining: 6.25s
88:     learn: 0.4199591     total: 4.96s     remaining: 6.19s
89:     learn: 0.4196665     total: 5.03s     remaining: 6.15s
90:     learn: 0.4194980     total: 5.08s     remaining: 6.09s
91:     learn: 0.4192046     total: 5.13s     remaining: 6.02s
92:     learn: 0.4188253     total: 5.18s     remaining: 5.96s
93:     learn: 0.4187363     total: 5.23s     remaining: 5.9s
94:     learn: 0.4185981     total: 5.31s     remaining: 5.87s
95:     learn: 0.4185193     total: 5.36s     remaining: 5.81s
```

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96:     learn: 0.4180411    total: 5.41s    remaining: 5.75s
97:     learn: 0.4178265    total: 5.46s    remaining: 5.68s
98:     learn: 0.4176705    total: 5.5s     remaining: 5.61s
99:     learn: 0.4174483    total: 5.57s    remaining: 5.57s
100:    learn: 0.4170814    total: 5.61s    remaining: 5.5s
101:    learn: 0.4168872    total: 5.68s    remaining: 5.46s
102:    learn: 0.4167323    total: 5.72s    remaining: 5.39s
103:    learn: 0.4164140    total: 5.79s    remaining: 5.34s
104:    learn: 0.4163102    total: 5.85s    remaining: 5.29s
105:    learn: 0.4159725    total: 5.9s     remaining: 5.24s
106:    learn: 0.4155321    total: 5.95s    remaining: 5.17s
107:    learn: 0.4153237    total: 6.01s    remaining: 5.12s
108:    learn: 0.4151552    total: 6.08s    remaining: 5.08s
109:    learn: 0.4146837    total: 6.14s    remaining: 5.02s
110:    learn: 0.4142577    total: 6.2s     remaining: 4.97s
111:    learn: 0.4140178    total: 6.27s    remaining: 4.92s
112:    learn: 0.4138226    total: 6.32s    remaining: 4.87s
113:    learn: 0.4138027    total: 6.4s     remaining: 4.83s
114:    learn: 0.4136830    total: 6.44s    remaining: 4.76s
115:    learn: 0.4132840    total: 6.49s    remaining: 4.7s
116:    learn: 0.4131354    total: 6.54s    remaining: 4.64s
117:    learn: 0.4126526    total: 6.59s    remaining: 4.58s
118:    learn: 0.4120643    total: 6.63s    remaining: 4.51s
119:    learn: 0.4115146    total: 6.68s    remaining: 4.45s
120:    learn: 0.4113258    total: 6.73s    remaining: 4.4s
121:    learn: 0.4110654    total: 6.8s     remaining: 4.35s
122:    learn: 0.4108121    total: 6.86s    remaining: 4.29s
123:    learn: 0.4105323    total: 6.91s    remaining: 4.24s
124:    learn: 0.4105156    total: 6.96s    remaining: 4.18s
125:    learn: 0.4102278    total: 7.01s    remaining: 4.12s
126:    learn: 0.4100254    total: 7.06s    remaining: 4.06s
127:    learn: 0.4100153    total: 7.1s     remaining: 4s
128:    learn: 0.4099255    total: 7.14s    remaining: 3.93s
129:    learn: 0.4097401    total: 7.21s    remaining: 3.88s
130:    learn: 0.4095186    total: 7.26s    remaining: 3.82s
131:    learn: 0.4092626    total: 7.31s    remaining: 3.76s
132:    learn: 0.4090972    total: 7.36s    remaining: 3.71s
133:    learn: 0.4089940    total: 7.41s    remaining: 3.65s
134:    learn: 0.4089375    total: 7.45s    remaining: 3.59s
135:    learn: 0.4086584    total: 7.51s    remaining: 3.53s
136:    learn: 0.4085819    total: 7.55s    remaining: 3.47s
137:    learn: 0.4084112    total: 7.62s    remaining: 3.42s
138:    learn: 0.4083556    total: 7.67s    remaining: 3.37s
139:    learn: 0.4080906    total: 7.72s    remaining: 3.31s
140:    learn: 0.4078204    total: 7.77s    remaining: 3.25s
141:    learn: 0.4076057    total: 7.81s    remaining: 3.19s
142:    learn: 0.4071491    total: 7.85s    remaining: 3.13s
143:    learn: 0.4070802    total: 7.91s    remaining: 3.08s
```

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144:    learn: 0.4068155    total: 7.95s    remaining: 3.02s
145:    learn: 0.4067492    total: 8.01s    remaining: 2.96s
146:    learn: 0.4062568    total: 8.06s    remaining: 2.91s
147:    learn: 0.4061714    total: 8.1s     remaining: 2.85s
148:    learn: 0.4057694    total: 8.16s    remaining: 2.79s
149:    learn: 0.4055359    total: 8.21s    remaining: 2.73s
150:    learn: 0.4055271    total: 8.26s    remaining: 2.68s
151:    learn: 0.4053857    total: 8.33s    remaining: 2.63s
152:    learn: 0.4051792    total: 8.39s    remaining: 2.58s
153:    learn: 0.4051023    total: 8.46s    remaining: 2.53s
154:    learn: 0.4047580    total: 8.53s    remaining: 2.48s
155:    learn: 0.4045652    total: 8.61s    remaining: 2.43s
156:    learn: 0.4045231    total: 8.67s    remaining: 2.37s
157:    learn: 0.4042558    total: 8.72s    remaining: 2.32s
158:    learn: 0.4041083    total: 8.77s    remaining: 2.26s
159:    learn: 0.4040177    total: 8.83s    remaining: 2.21s
160:    learn: 0.4039277    total: 8.88s    remaining: 2.15s
161:    learn: 0.4038822    total: 8.95s    remaining: 2.1s
162:    learn: 0.4036208    total: 9s       remaining: 2.04s
163:    learn: 0.4035179    total: 9.04s    remaining: 1.98s
164:    learn: 0.4033452    total: 9.09s    remaining: 1.93s
165:    learn: 0.4030836    total: 9.14s    remaining: 1.87s
166:    learn: 0.4030259    total: 9.2s     remaining: 1.82s
167:    learn: 0.4027570    total: 9.25s    remaining: 1.76s
168:    learn: 0.4026471    total: 9.29s    remaining: 1.7s
169:    learn: 0.4024437    total: 9.34s    remaining: 1.65s
170:    learn: 0.4022850    total: 9.39s    remaining: 1.59s
171:    learn: 0.4021868    total: 9.44s    remaining: 1.54s
172:    learn: 0.4020587    total: 9.48s    remaining: 1.48s
173:    learn: 0.4019637    total: 9.54s    remaining: 1.42s
174:    learn: 0.4017205    total: 9.59s    remaining: 1.37s
175:    learn: 0.4014880    total: 9.64s    remaining: 1.31s
176:    learn: 0.4014826    total: 9.69s    remaining: 1.26s
177:    learn: 0.4013514    total: 9.73s    remaining: 1.2s
178:    learn: 0.4011716    total: 9.8s     remaining: 1.15s
179:    learn: 0.4010144    total: 9.86s    remaining: 1.1s
180:    learn: 0.4010029    total: 9.91s    remaining: 1.04s
181:    learn: 0.4009358    total: 9.98s    remaining: 987ms
182:    learn: 0.4007618    total: 10s      remaining: 932ms
183:    learn: 0.4005136    total: 10.1s    remaining: 879ms
184:    learn: 0.4002233    total: 10.2s    remaining: 824ms
185:    learn: 0.4000247    total: 10.2s    remaining: 770ms
186:    learn: 0.3999588    total: 10.3s    remaining: 716ms
187:    learn: 0.3997870    total: 10.3s    remaining: 661ms
188:    learn: 0.3994702    total: 10.4s    remaining: 605ms
189:    learn: 0.3993374    total: 10.4s    remaining: 550ms
190:    learn: 0.3991553    total: 10.5s    remaining: 494ms
191:    learn: 0.3989996    total: 10.5s    remaining: 439ms
```

```
192:    learn: 0.3986927    total: 10.6s    remaining: 384ms
193:    learn: 0.3986363    total: 10.7s    remaining: 330ms
194:    learn: 0.3985405    total: 10.7s    remaining: 275ms
195:    learn: 0.3984367    total: 10.8s    remaining: 220ms
196:    learn: 0.3983517    total: 10.8s    remaining: 165ms
197:    learn: 0.3982421    total: 10.9s    remaining: 110ms
198:    learn: 0.3980974    total: 11s      remaining: 55.1ms
199:    learn: 0.3979413    total: 11s      remaining: 0us
Mean train f1-score of data (CV) 26 is : 0.8173230945372559
Mean test f1-score of data (CV) 26 is : 0.8032100047060967
```

[204]:
```python
# y = df1['TIMELY_RESPONSE']
# X = df1.drop(columns = ['TIMELY_RESPONSE', 'CONSUMER_DISPUTED?'])
# X_train, X_test, y_train, y_test = train_test_split(X,y, stratify = y,
 →test_size = 0.1, random_state = 53)
```

[197]:
```python
# cf = ['PRODUCT', 'SUB_PRODUCT', 'ISSUE', 'COMPANY',
 →'STATE','SUBMITTED_VIA','COMPANY_RESPONSE_TO_CONSUMER']
# # cf = ['PRODUCT', 'SUBMITTED_VIA','COMPANY_RESPONSE_TO_CONSUMER']
# import catboost as cb
# cat_model = cb.CatBoostClassifier(iterations = 100, random_state = 3,
 →cat_features = cf, learning_rate = 0.01)
# cat_model.fit(X_train, y_train,
#                          eval_set=(X_test, y_test),
#                          use_best_model=True,
#                          plot=True, silent = True)
# print('Train f1_score [Yes]:', f1_score(y_true = y_train, y_pred = cat_model.
 →predict(X_train), average="binary", pos_label="Yes"))
# print('Train f1_score [No]:', f1_score(y_true = y_train, y_pred = cat_model.
 →predict(X_train), average="binary", pos_label="No"))
# y_pred = cat_model.predict(X_test)
# print(classification_report(y_true = y_test, y_pred = y_pred))
# fig = plt.figure(figsize=(6, 6))
# ax= plt.subplot()
# cm = confusion_matrix(y_true=y_test,y_pred=y_pred)
# sns.heatmap(cm, annot=True, ax = ax, fmt = 'g', xticklabels = ['No','Yes'],
 →yticklabels = ['No','Yes'])
# ax.set_xlabel('Predicted label')
# ax.set_ylabel('Actual label')
# plt.show()
```

```
<IPython.core.display.HTML object>

MetricVisualizer(layout=Layout(align_self='stretch', height='500px'))

Train f1_score [Yes]: 0.986397088077513
Train f1_score [No]: 0.339592130087144
              precision    recall  f1-score    support
```
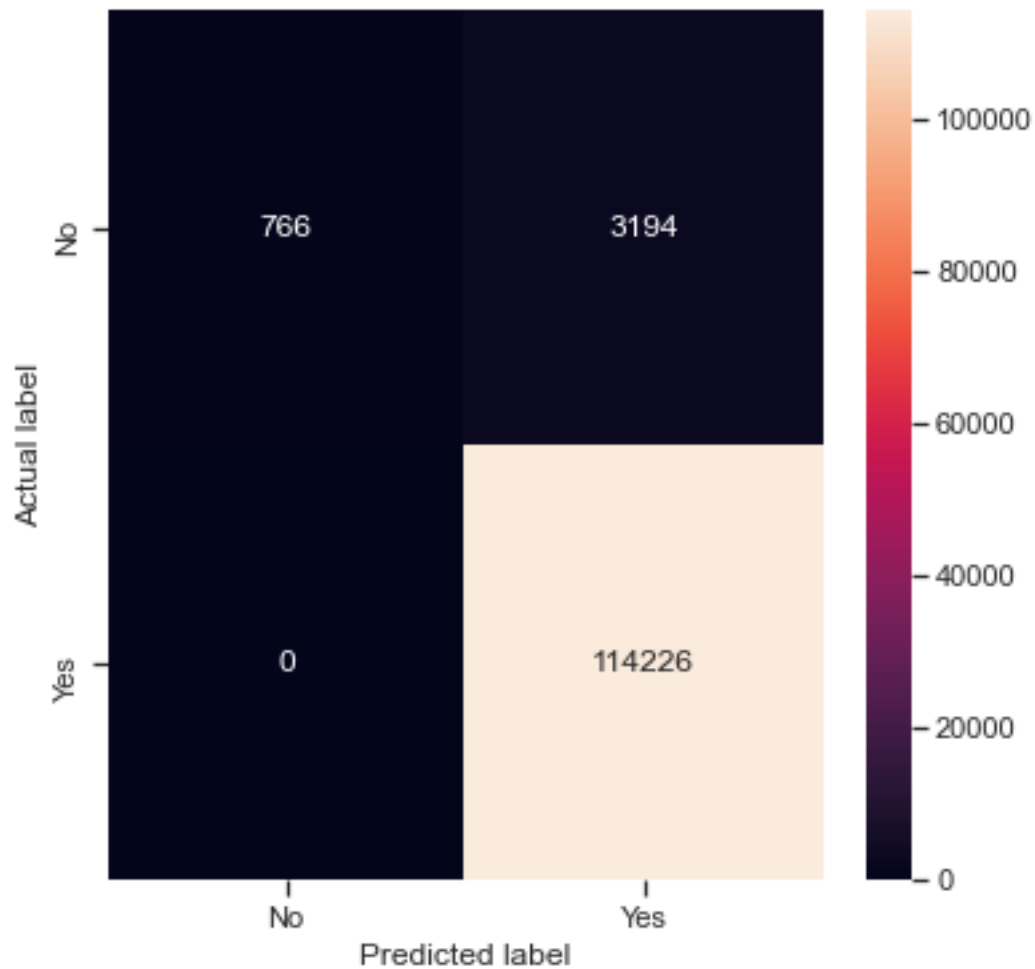
```
              No          1.00        0.19        0.32         3960
             Yes          0.97        1.00        0.99       114226

        accuracy                                  0.97       118186
       macro avg          0.99        0.60        0.66       118186
    weighted avg          0.97        0.97        0.96       118186
```



```
[157]: # #Model pickling
       # import pickle
       # file = open('model.pkl', 'wb')
       # pickle.dump(cat_model,file)
```

```
[315]: X_test_all.shape
```

```
[315]: (51624, 8)
```

```
[317]: test_data = pd.concat([X_test_all.reset_index().drop(columns = ['index']),
       →y_test_all.reset_index().drop(columns = ['index'])], axis = 1)
```

```
[320]: test_data.head(10)
```

```
[320]:                     PRODUCT                        SUB_PRODUCT  \
       0           Debt collection  Other (i.e. phone, health club, etc.)
       1                  Mortgage                        Other mortgage
       2                  Mortgage            Conventional fixed mortgage
       3                  Mortgage            Conventional fixed mortgage
       4   Bank account or service                       Checking account
       5           Debt collection                            Credit card
       6           Debt collection                            Payday loan
       7           Debt collection  Other (i.e. phone, health club, etc.)
       8                  Mortgage            Conventional fixed mortgage
       9           Debt collection                                Medical

                                         ISSUE                       COMPANY  \
       0     Cont'd attempts collect debt not owed  National Credit Systems,Inc.
       1  Loan modification,collection,foreclosure                Bank of America
       2  Loan modification,collection,foreclosure                Bank of America
       3  Loan servicing, payments, escrow account           Ditech Financial LLC
       4                 Deposits and withdrawals        Wells Fargo & Company
       5        Improper contact or sharing of info                        others
       6             Disclosure verification of debt                      others
       7     Cont'd attempts collect debt not owed      Allied Interstate LLC
       8  Loan modification,collection,foreclosure                        others
       9             Disclosure verification of debt                      others

          STATE SUBMITTED_VIA   COMPANY_RESPONSE_TO_CONSUMER  DATE_DIFF  \
       0    TX           Web          Closed with explanation      183.0
       1    CA      Referral          Closed with explanation     1248.0
       2    IN           Web          Closed with explanation     1204.0
       3    KS           Web          Closed with explanation      300.0
       4    CA           Web          Closed with explanation      167.0
       5    NY           Web                 Untimely response      110.0
       6    OH         Phone                           Closed      749.0
       7    WA      Referral  Closed with non-monetary relief       61.0
       8    TX           Web          Closed with explanation     1119.0
       9    OK           Web                 Untimely response      134.0

          TIMELY_RESPONSE
       0               No
       1               No
       2               No
       3              Yes
       4               No
```

```
5              No
6              No
7              Yes
8              Yes
9              No
```

[323]: `test_data['COMPANY'].nunique()`

[323]: 101