

# Buisness problem

```
In [1]: import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
from sklearn.neighbors import KNeighborsClassifier
from sklearn.metrics import log_loss
from sklearn.metrics import confusion_matrix
from sklearn.model_selection import train_test_split
from sklearn.linear_model import LogisticRegression
from sklearn.ensemble import RandomForestClassifier
from xgboost import XGBClassifier
from sklearn.model_selection import RandomizedSearchCV
from sklearn.tree import DecisionTreeClassifier
from sklearn.calibration import CalibratedClassifierCV
from sklearn.linear_model import SGDClassifier
from sklearn.preprocessing import StandardScaler
import warnings
warnings.filterwarnings("ignore")
```

```
In [2]: from google.colab import drive
drive.mount('/content/drive')
```

Mounted at /content/drive

## Project Objectives

Provider Fraud is one of the biggest problems facing Medicare. According to the government, the total Medicare spending increased exponentially due to frauds in Medicare claims. Healthcare fraud is an organized crime which involves peers of providers, physicians, beneficiaries acting together to make fraud claims.

Rigorous analysis of Medicare data has yielded many physicians who indulge in fraud. They adopt ways in which an ambiguous diagnosis code is used to adopt costliest procedures and drugs. Insurance companies are the most vulnerable institutions impacted due to these bad practices. Due to this reason, insurance companies increased their insurance premiums and as result healthcare is becoming costly matter day by day.

## Types of frauds

Healthcare fraud and abuse take many forms. Some of the most common types of frauds by providers are:

- a) Billing for services that were not provided.
- b) Duplicate submission of a claim for the same service.
- c) Misrepresenting the service provided.
- d) Charging for a more complex or expensive service than was actually provided.
- e) Billing for a covered service when the service actually provided was not covered.

## Objective

The goal of this project is to "predict the potentially fraudulent providers" based on the claims filed by them. Along with this, we will also discover important variables helpful in detecting the behaviour of potentially fraud providers. Further, we will study fraudulent patterns in the provider's claims to understand the future behaviour of providers.

## Data we will be working with

For the purpose of this project, we are considering Inpatient claims, Outpatient claims and Beneficiary details of each provider. Let's see their details:

### A) Inpatient Data

This data provides insights about the claims filed for those patients who are admitted in the hospitals. It also provides additional details like their admission and discharge dates and admitted diagnosis code.

### B) Outpatient Data

This data provides details about the claims filed for those patients who visit hospitals and not admitted in it.

### C) Beneficiary Details Data

This data contains beneficiary KYC details like health conditions, region they belong to etc.

### D) Train Data:

Data containing provider id's and whether they are fraud or not.

## Approach:

We are given with no details about the health care provider except for the *provider id*. But in inpatient and outpatient files we have *provider id* as feature. So we can leverage that and generate information about the provider based on the details of patients.

```
In [3]: #importing dependencies
import pandas as pd
```

```
import numpy as np
from datetime import datetime
import matplotlib.pyplot as plt
import seaborn as sns
import random
```

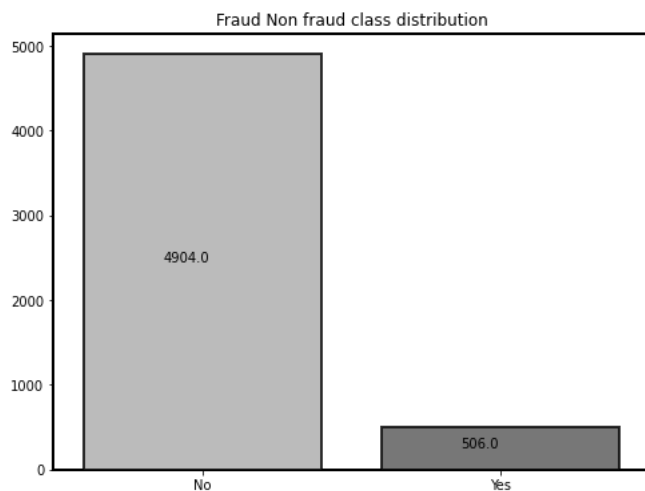
```
In [47]: ben_data=pd.read_csv('/content/drive/MyDrive/Train_Beneficiarydata-1542865627584.csv')
inp_data=pd.read_csv('/content/drive/MyDrive/Train_Inpatientdata-1542865627584.csv')
out_data=pd.read_csv('/content/drive/MyDrive/Train_Outpatientdata-1542865627584.csv')
train_data=pd.read_csv('/content/drive/MyDrive/Train-1542865627584.csv')
```

## EDA

### Train data

```
In [48]: def bar_plot(x,y,xlab=None,ylab=None,title=None,annotate=False):
'''This function generates an annotated barplot'''
fig,ax=plt.subplots(figsize=(8,6))
custom_palette=['dark:salmon_r','ocean','inferno','BrBG','binary','winter']
choice=random.choice(custom_palette)
if title is not None:
    ax.set_title(title)
else:
    ax.set_title('No title')
sns.barplot(x=x,
            y=y,palette=choice,alpha=0.8,edgecolor='black',linewidth=2)
ax.patch.set_edgecolor('black')
ax.patch.set_linewidth('2')
plt.xlabel(xlab)
plt.ylabel(ylab)
if annotate==True:
    for p in ax.patches:
        ax.annotate(p.get_height(), (p.get_x()+p.get_width()/3. * 1.005, p.get_height() * .5))
plt.show()
```

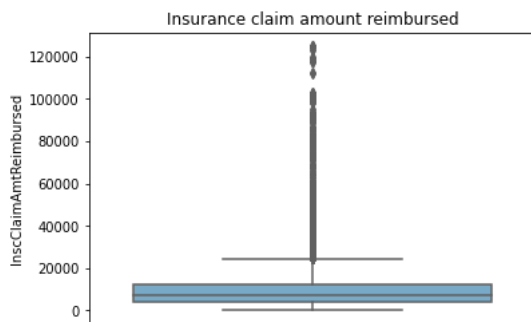
```
In [49]: bar_plot(train_data.PotentialFraud.value_counts().index,train_data.PotentialFraud.value_counts().values,title='Fraud Non
plt.show()
print('Only {:.2f}% of healthcare providers are fraudulent '.format(train_data.PotentialFraud.value_counts()[1]/5410*100))
```



Only 9.35% of healthcare providers are fraudulent  
From above plot we observe that there is a severe class imbalance.

### Inp data

```
In [50]: #Insurance claim reimbursed
plt.title('Insurance claim amount reimbursed')
sns.boxplot(y=inp_data.InscClaimAmtReimbursed,palette='Blues')
plt.show()
```



We see a large amount of outliers in this data. Most patients seem to have humble claim amounts while some having huge claims.

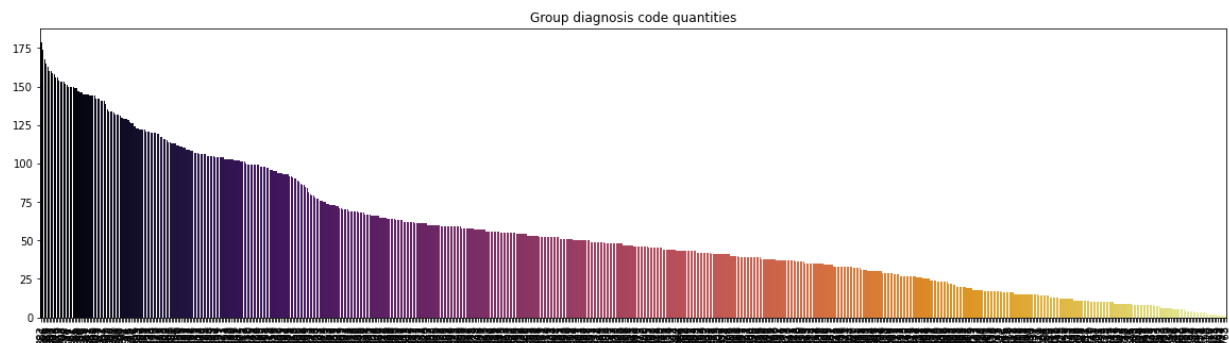
```
In [51]: #Physician data
print('Missing values in attending physician',inp_data.AttendingPhysician.isnull().sum())
```

```
print('Missing values in operating physician',inp_data.OperatingPhysician.isnull().sum())
print('Missing values in other physician',inp_data.OtherPhysician.isnull().sum())
```

Missing values in attending physician 112  
Missing values in operating physician 16644  
Missing values in other physician 35784

Most patients might not require a operation procedure i.e it seems for most patients the attending physician is sufficient. We will treat it as such while handling missing values.

```
In [52]: # Group diagnosis code
plt.figure(figsize=(20,5))
plt.title('Group diagnosis code quantities')
sns.barplot(x=inp_data.DiagnosisGroupCode.value_counts().index,y=inp_data.DiagnosisGroupCode.value_counts().values,palette=
plt.xticks(rotation=90)
plt.show()
print('Top 10 diagnosis codes are \n',inp_data.DiagnosisGroupCode.value_counts()[:10])
```

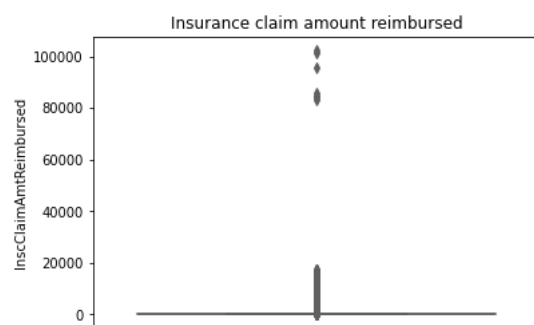


Top 10 diagnosis codes are  
882 179  
884 174  
166 168  
183 165  
939 163  
168 160  
883 160  
887 159  
204 158  
945 156  
Name: DiagnosisGroupCode, dtype: int64

### Outpatient data

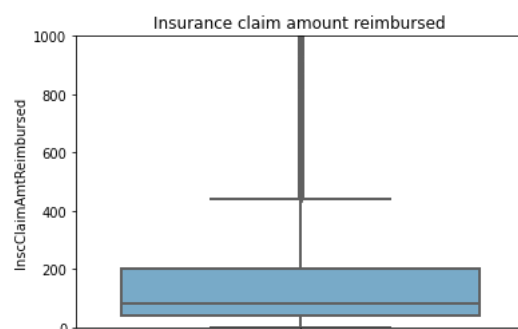
Much more outpatient claims than inpatient. Similar reducing trend is also observed here.

```
In [53]: #Outpatient InsclaimReimb
plt.title('Insurance claim amount reimbursed')
sns.boxplot(y=out_data.InscClaimAmtReimbursed,palette='Blues')
# plt.ylim(0,1000)
plt.show()
```



Outliers seem to be very separated from frequently occurring data but not much is clear..

```
In [54]: plt.title('Insurance claim amount reimbursed')
sns.boxplot(y=out_data.InscClaimAmtReimbursed,palette='Blues',linewidth=2)
plt.ylim(0,1000)
plt.show()
```

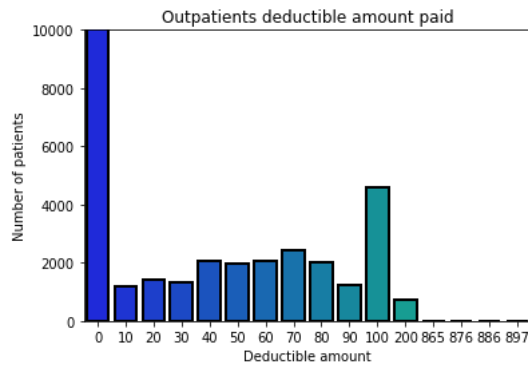


Most outdoor patients seem to have claims under 400

```
In [55]: print('Missing values in attending physician',out_data.AttendingPhysician.isnull().sum())
print('Missing values in operating physician',out_data.OperatingPhysician.isnull().sum())
print('Missing values in other physician',out_data.OtherPhysician.isnull().sum())
```

Missing values in attending physician 1396  
Missing values in operating physician 427120  
Missing values in other physician 322691

```
In [56]: plt.title('Outpatients deductible amount paid')
sns.barplot(x=out_data.DeductibleAmtPaid.value_counts().index,y=out_data.DeductibleAmtPaid.value_counts().values,palette
plt.xlabel('Deductible amount')
plt.ylabel('Number of patients')
plt.ylim(0,10000)
plt.show()
print('Total number of patients who not paid deductible amount',out_data.DeductibleAmtPaid.value_counts()[0])
```

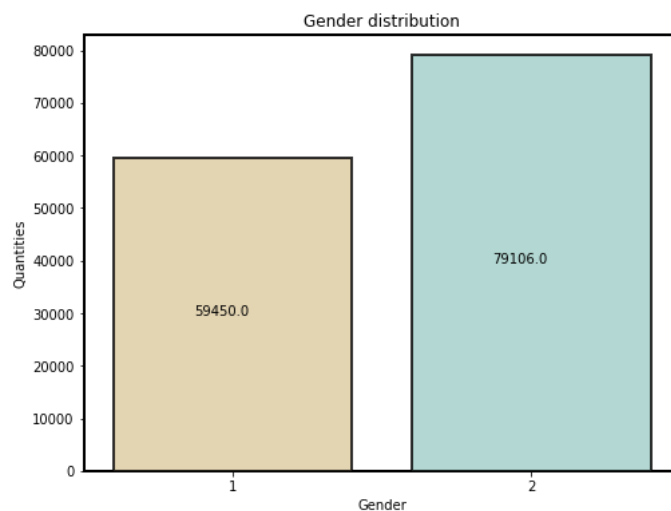


Total number of patients who not paid deductible amount 496701

Most patients do not have to pay any kind of deductible amount. This amount is probably be paid by the government.

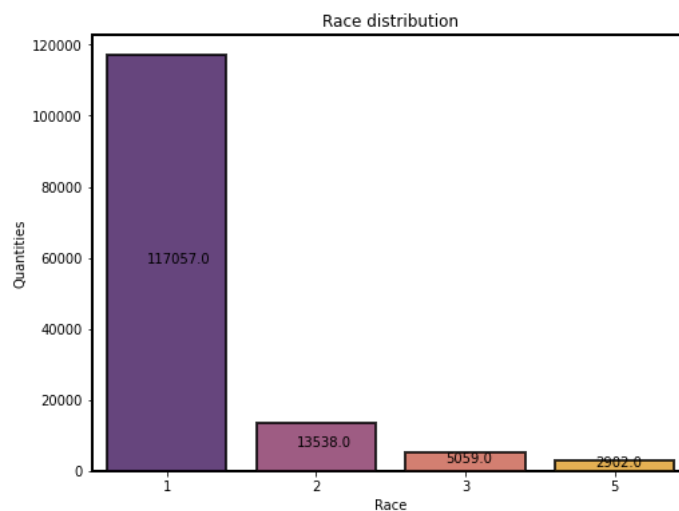
#### Benefeciary data

```
In [57]: bar_plot(ben_data.Gender.value_counts().index,ben_data.Gender.value_counts().values,'Gender','Quantities','Gender distri
```



We see a minor imbalance between genders nothing to worry about.

```
In [58]: bar_plot(ben_data.Race.value_counts().index,ben_data.Race.value_counts().values,xlab='Race',ylab='Quantities',title='Rac
```



## Merging inpatient+outpatient+beneficiary+provider

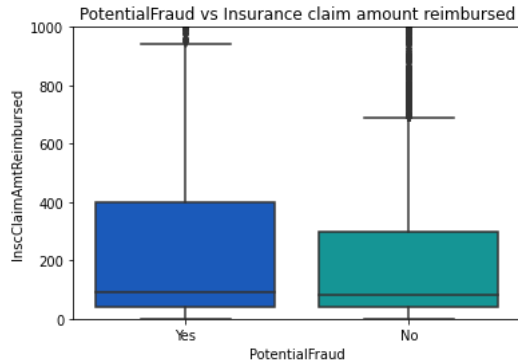
```
In [59]: #merging inpatient and outpatient data
cols=list(set(inp_data.columns).intersection(set(out_data.columns)))
patient=inp_data.merge(out_data,how='outer',on=cols)

In [60]: patient_int=ben_data.merge(patient,how='outer',on='BeneID')

In [61]: patient_fin=patient_int.merge(train_data,how='outer',on='Provider')
```

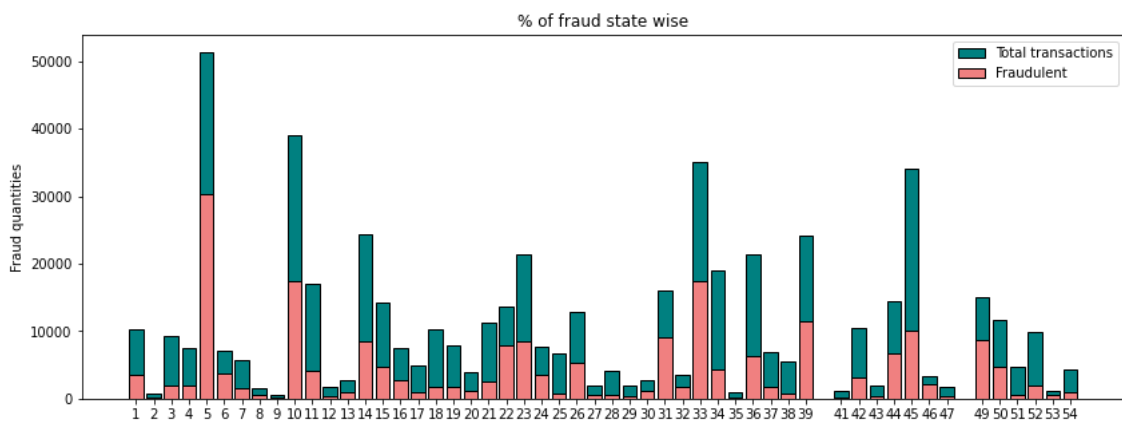
Now we have the target variable so we can visualize interaction features.

```
In [62]: plt.title('PotentialFraud vs Insurance claim amount reimbursed')
sns.boxplot(y='InscClaimAmtReimbursed',x='PotentialFraud',data=patient_fin,palette='winter')
plt.ylim(0,1000)
plt.show()
```



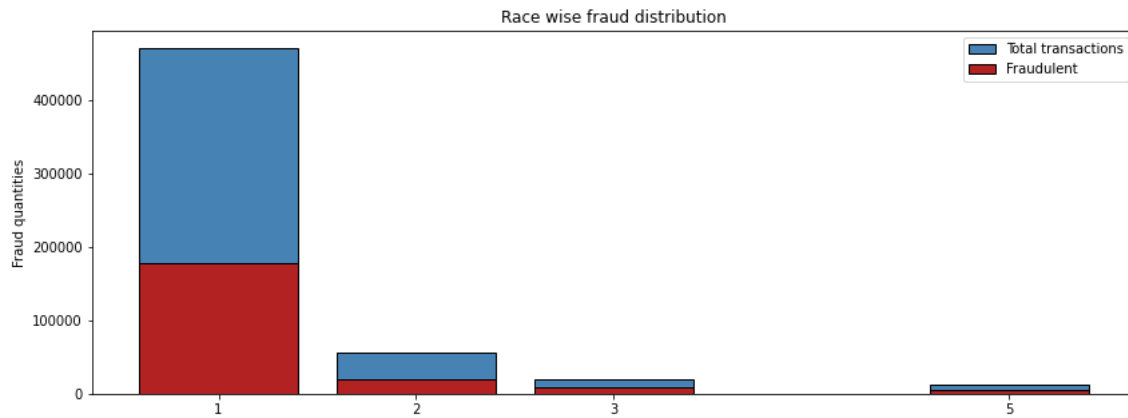
The upper whisker in the boxplot is higher for fraudulent transaction than non fraudulent.

```
In [63]: temp1=patient_fin.groupby('State')['PotentialFraud'].agg(lambda x:x.eq('Yes').sum()).reset_index() #aggregates state wise
temp2=patient_fin.groupby('State')['PotentialFraud'].agg(lambda x:x.eq('No').sum()).reset_index()
temp3=temp1['PotentialFraud']+temp2['PotentialFraud']
plt.figure(figsize=(14,5))
plt.title('State vs Potential Fraud')
p1=plt.bar(temp1['State'],temp3,edgecolor='black',color='teal')
p2=plt.bar(temp1['State'],temp1['PotentialFraud'],edgecolor='black',color='lightcoral')
plt.ylabel('Fraud quantities')
plt.title('% of fraud state wise')
plt.xticks(temp1['State'], list(temp1['State'].values))
plt.legend((p1[0], p2[0]), ('Total transactions', 'Fraudulent'))
plt.show()
#code for simple annotation
# for p in ax.patches:
#     ax.annotate(p.get_height(), (p.get_x()+p.get_width()/3. * 1.005, p.get_height() * 1.005))
```



In states 5,10,33 & 45 transactions are high and fraudulent transactions are also high.

```
In [64]: temp1=patient_fin.groupby('Race')['PotentialFraud'].agg(lambda x:x.eq('Yes').sum()).reset_index()
temp2=patient_fin.groupby('Race')['PotentialFraud'].agg(lambda x:x.eq('No').sum()).reset_index()
temp3=temp1['PotentialFraud']+temp2['PotentialFraud']
plt.figure(figsize=(14,5))
plt.title('Race vs Potential Fraud')
p1=plt.bar(temp1['Race'],temp3,edgecolor='black',color='steelblue')
p2=plt.bar(temp1['Race'],temp1['PotentialFraud'],edgecolor='black',color='firebrick')
plt.ylabel('Fraud quantities')
plt.title('Race wise fraud distribution')
plt.xticks(temp1['Race'], list(temp1['Race'].values))
plt.legend((p1[0], p2[0]), ('Total transactions', 'Fraudulent'))
plt.show()
print('% fraud transactions racewise')
[temp1['Race'].loc[i],temp1['PotentialFraud'].loc[i]/temp3[i] for i in range(len(temp1['PotentialFraud']))]
```



```
% fraud transactions racewise
```

```
Out[64]: [(1, 0.37862286534362555),
(2, 0.36455787203450757),
(3, 0.45457773269084456),
(5, 0.4403553299492386)]
```

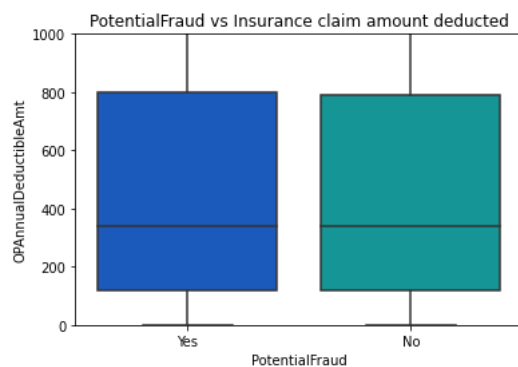
-There are no race 4 persons in dataset.

-Patients of race 3 and 5 are more susceptible to fraud

```
In [65]: #label coding binary features
cols=['ChronicCond_Alzheimer','ChronicCond_Heartfailure','ChronicCond_KidneyDisease',
'ChronicCond_Cancer','ChronicCond_ObstrPulmonary','ChronicCond_Depression','ChronicCond_Diabetes',
'ChronicCond_IschemicHeart','ChronicCond_Osteoporosis','ChronicCond_rheumatoidarthritis',
'ChronicCond_stroke']
for i in cols:
    patient_fin[i]=patient_fin[i].map({'1':0,'2':1})
```

```
In [66]: patient_fin.RenalDiseaseIndicator=patient_fin.RenalDiseaseIndicator.map({'0':0,'1':1})
```

```
In [67]: plt.title('PotentialFraud vs Insurance claim amount deducted')
sns.boxplot(y='OPAnnualDeductibleAmt',x='PotentialFraud',data=patient_fin,palette='winter')
plt.ylim(0,1000)
plt.show()
```



Deductible amount is very similar for fraud and non fraud.

```
In [68]: temp1=patient_fin.groupby('Gender')['PotentialFraud'].agg(lambda x:x.eq('Yes').sum()).reset_index()
temp2=patient_fin.groupby('Gender')['PotentialFraud'].agg(lambda x:x.eq('No').sum()).reset_index()
temp3=temp1['PotentialFraud']+temp2['PotentialFraud']
plt.figure(figsize=(6,4))
plt.title('Gender vs Potential Fraud')
p1=plt.bar(temp1['Gender'],temp3,edgecolor='black',color='teal')
p2=plt.bar(temp1['Gender'],temp1['PotentialFraud'],edgecolor='black',color='coral')
plt.ylabel('Fraud quantities')
plt.title('Gender wise fraud distribution')
plt.xticks(temp1['Gender'], list(temp1['Gender'].values))
plt.legend((p1[0], p2[0]), ('Total transactions', 'Fraudulent'))
plt.show()
print('% fraud transactions Genderwise')
[(temp1['Gender'].loc[i],temp1['PotentialFraud'].loc[i]/temp3[i]) for i in range(len(temp1['PotentialFraud']))]
```



% fraud transactions Genderwise

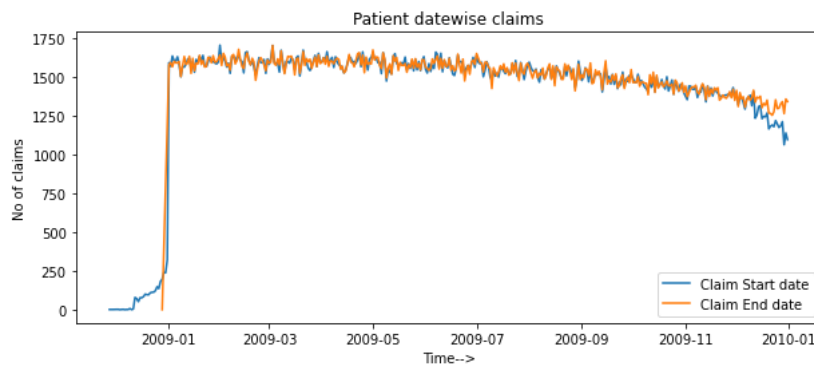
```
Out[68]: [(1, 0.38147232844315326), (2, 0.38102032100125655)]
```

Both genders are equally prone to fraud.

## Feature Engineering

```
In [69]: #Feature : settlement_Days
patient_fin['ClaimStartDt']=pd.to_datetime(patient_fin.ClaimStartDt,format='%Y-%m-%d')
patient_fin['ClaimEndDt']=pd.to_datetime(patient_fin.ClaimEndDt,format='%Y-%m-%d')
patient_fin['settlement_days']=patient_fin['ClaimEndDt']-patient_fin['ClaimStartDt']
patient_fin['settlement_days']=patient_fin['settlement_days'].dt.days
```

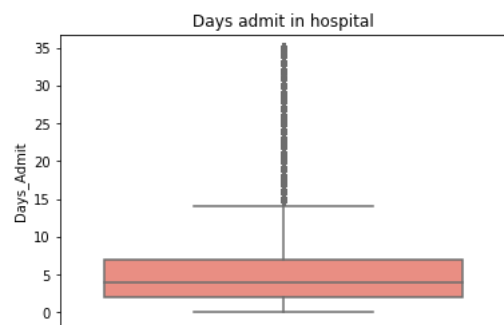
```
In [70]: fig,ax=plt.subplots(figsize=(10,4))
plt.title('Patient datewise claims')
plt.xlabel('Time-->')
plt.ylabel('No of claims')
# sns.set_palette('inferno',n_colors=2)
sns.lineplot(x=patient_fin.ClaimStartDt.value_counts().sort_index().index,y=patient_fin.ClaimStartDt.value_counts().sort_index().index)
sns.lineplot(x=patient_fin.ClaimEndDt.value_counts().sort_index().index,y=patient_fin.ClaimEndDt.value_counts().sort_index().index)
plt.show()
```



We see that patient wise claims are overall decreasing.

```
In [71]: #feature: days Admit
patient_fin['AdmissionDt']=pd.to_datetime(patient_fin['AdmissionDt'],format='%Y-%m-%d')
patient_fin['DischargeDt']=pd.to_datetime(patient_fin['DischargeDt'],format='%Y-%m-%d')
patient_fin['Days_Admit']=patient_fin['DischargeDt']-patient_fin['AdmissionDt']
patient_fin['Days_Admit']=patient_fin['Days_Admit'].dt.days
```

```
In [72]: plt.title('Days admit in hospital')
sns.boxplot(y=patient_fin.Days_Admit,palette='dark:salmon_r')
plt.show()
print('Max number of days a person was admitted=',max(patient_fin.Days_Admit))
```



Max number of days a person was admitted= 35.0

Most people were discharged in 15 days.

```
In [73]: #adding a feature inp_out signifying whether the patient was inpatient or outpatient
inp_out=patient_fin.Days_Admit.isnull()
```

```
inp_data=inp_out.map({True:1,False:0})
patient_fin['inp_out']=inp_data
```

```
In [74]: #handling nan values generated due to merging inpatient and outpatient
patient_fin.Days_Admit.fillna(0,inplace=True)
```

```
In [75]: #since no date is given in the problem statement we are taking last death as the latest day
last_death=max(patient_fin['DOD'][patient_fin['DOD'].notnull()])
```

```
In [76]: #adding a feature representing whether the person is alive or not
patient_fin['Alive_or_not']=np.where(patient_fin['DOD'].isnull(),1,0)
```

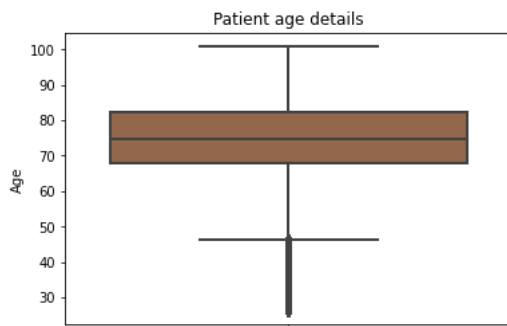
```
In [77]: patient_fin['DOD']=np.where(patient_fin['DOD'].isnull(),last_death,patient_fin['DOD'])
```

```
In [78]: # datetime.strptime(ben_data['DOD'], "%Y-%m-%d")
# ben_data.apply(lambda x:datetime.strptime(x['DOD'], "%Y-%m-%d"))
patient_fin['DOD']=pd.to_datetime(patient_fin['DOD'], format='%Y-%m-%d')
patient_fin['DOB']=pd.to_datetime(patient_fin['DOB'], format='%Y-%m-%d')
```

```
In [79]: #lets get the age of the patient
patient_fin=patient_fin.assign(Age=lambda x:(x['DOD']-x['DOB']))
```

```
In [80]: patient_fin['Age']=patient_fin['Age'].dt.days/365
```

```
In [81]: plt.title('Patient age details')
sns.boxplot(y=patient_fin.Age,palette='copper',linewidth=2)
plt.show()
```



Most people are having ages 45-100.

```
In [82]: tot=0
for i in cols:
    tot+=patient_fin[i]
patient_fin['Total_disease']=tot
```

```
In [83]: patient_fin['Total_deductible']=patient_fin['OPAnnualDeductibleAmt']+patient_fin['IPAnnualDeductibleAmt']
patient_fin['Total_reimbursible']=patient_fin['OPAnnualReimbursementAmt']+patient_fin['IPAnnualReimbursementAmt']
```

```
In [84]: #feature number of physician
val_op=[0 if i=='Not_Available' else 1 for i in patient_fin.OtherPhysician]
val_ap=[0 if i=='Not_Available' else 1 for i in patient_fin.AttendingPhysician]
val_opp=[0 if i=='Not_Available' else 1 for i in patient_fin.OperatingPhysician]
patient_fin['Num_physician_rq']=sum(x for x in zip(val_op,val_ap,val_opp))
```

### Handling missing values

```
In [85]: #before processing outliers lets drop irrelevant features
num_claims=patient_fin.groupby('Provider')['ClaimID'].nunique()
patient_fin.drop(['BeneID','DOB','DOD','ClaimID','ClaimStartDt','ClaimEndDt','AdmissionDt','DischargeDt'],axis=1,inplace=True)
```

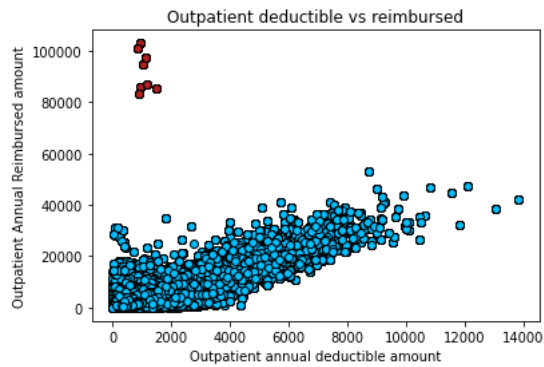
```
In [86]: #filling with zero representing out patient
patient_fin['Days_Admit'].fillna(0,inplace=True)
#for categorical columns we replace nan values as a class of its own
```

```
In [87]: col_nan=patient_fin.columns[patient_fin.isna().any()]
for i in col_nan:
    patient_fin[i].fillna('Not_Available',inplace=True)
```

### Outlier analysis

```
In [88]: fig=plt.figure()
ax=fig.add_subplot(111)
# plot points inside distribution's width
ax.scatter(patient_fin['OPAnnualDeductibleAmt'],patient_fin['OPAnnualReimbursementAmt'],
           edgecolors='black',color="deepskyblue")
ax.scatter(patient_fin['OPAnnualDeductibleAmt'][patient_fin['OPAnnualReimbursementAmt']>80000],
           patient_fin['OPAnnualReimbursementAmt'][patient_fin['OPAnnualReimbursementAmt']>80000],
           edgecolors='black',color="firebrick")
ax.set_xlabel('Outpatient annual deductible amount')
ax.set_ylabel('Outpatient Annual Reimbursed amount')
ax.set_title('Outpatient deductible vs reimbursed')
plt.show()
```





We see that points in red are very separated from the rest of the point exhibiting outlierish behaviour.

```
In [89]: patient_fin.drop(patient_fin[patient_fin['OPAnnualReimbursementAmt']>80000].index,inplace=True)
```

Other features too had outliers but they were conveying important information about data. So we decided to leave them as it is

```
In [90]: #label_encoder
def label_encoder(X):
    if patient_fin[X].dtype=='object' and X!='Provider':
        patient_fin[X]=patient_fin[X].astype('category')
        patient_fin[X]=patient_fin[X].cat.codes
        patient_fin[X]=patient_fin[X].astype('category')
```

```
In [91]: object_dtypes=patient_fin.select_dtypes(include='object').columns
```

```
In [92]: [label_encoder(i) for i in object_dtypes]
```

[illegible]

### Aggregating numerical features by provider

```
In [93]: #Insurance claim reimbursed
Avg_clm_reimbursed=patient_fin.groupby('Provider')['InscClaimAmtReimbursed'].mean()
Tot_clm_reimbursed=patient_fin.groupby('Provider')['InscClaimAmtReimbursed'].sum()
#IPAnnualReimbursementAmt
Avg_inpclm_reimbursed=patient_fin.groupby('Provider')['IPAnnualReimbursementAmt'].mean()
Tot_inpclm_reimbursed=patient_fin.groupby('Provider')['IPAnnualReimbursementAmt'].sum()
#IPAnnualDeductibleAmt
Avg_inp_deductible=patient_fin.groupby('Provider')['IPAnnualDeductibleAmt'].mean()
Tot_inp_deductible=patient_fin.groupby('Provider')['IPAnnualDeductibleAmt'].sum()
#OPAnnualReimbursementAmt
Avg_out_reimbursement=patient_fin.groupby('Provider')['OPAnnualReimbursementAmt'].mean()
Tot_out_deductible=patient_fin.groupby('Provider')['OPAnnualReimbursementAmt'].sum()
#OPAnnualDeductibleAmt
Avg_out_deductible=patient_fin.groupby('Provider')['IPAnnualDeductibleAmt'].mean()
Tot_out_deductible=patient_fin.groupby('Provider')['IPAnnualDeductibleAmt'].sum()
#Age
Avg_age=patient_fin.groupby('Provider')['Age'].mean()
#settlement_days
Avg_settlement=patient_fin.groupby('Provider')['settlement_days'].mean()
Freq_settlement=patient_fin.groupby('Provider')['settlement_days'].agg(lambda x:x.value_counts().index[0])
#Days_Admitt
Avg_days_admit=patient_fin.groupby('Provider')['Days_Admitt'].mean()
#Num_physician_rq
Num_phys_rq=patient_fin.groupby('Provider')['Num_physician_rq'].mean()
#Total_deductible
Avg_total_deductible=patient_fin.groupby('Provider')['Total_deductible'].mean()
Sum_total_deductible=patient_fin.groupby('Provider')['Total_deductible'].sum()
#Total_reimbursible
Avg_total_reimbursible=patient_fin.groupby('Provider')['Total_reimbursible'].mean()
Sum_total_reimbursible=patient_fin.groupby('Provider')['Total_reimbursible'].sum()
```

```
In [94]: Race_dummy=pd.get_dummies(patient_fin.Race)
patient_fin=pd.concat([patient_fin,Race_dummy],axis=1)
```

```
patient_fin.drop('Race',axis=1,inplace=True)
```

```
In [95]: #Gender
Num_males=patient_fin.groupby('Provider')['Gender'].sum()
#Race features
Num_race1=patient_fin.groupby('Provider')[1].sum()
Num_race2=patient_fin.groupby('Provider')[2].sum()
Num_race3=patient_fin.groupby('Provider')[3].sum()
Num_race5=patient_fin.groupby('Provider')[5].sum()
#RenalDiseaseIndicator
Ren_disease=patient_fin.groupby('Provider')['RenalDiseaseIndicator'].sum()
#
```

```
In [96]: Num_months_dummy=pd.get_dummies(patient_fin.NoOfMonths_PartACov)
Num_months_dummy.columns=['Month'+str(i) for i in range(13)]
patient_fin=pd.concat([patient_fin,Num_months_dummy],axis=1)
patient_fin.drop('NoOfMonths_PartACov',axis=1,inplace=True)
```

```
In [97]: Month0=patient_fin.groupby('Provider')['Month0'].sum()
Month1=patient_fin.groupby('Provider')['Month1'].sum()
Month2=patient_fin.groupby('Provider')['Month2'].sum()
Month3=patient_fin.groupby('Provider')['Month3'].sum()
Month4=patient_fin.groupby('Provider')['Month4'].sum()
Month5=patient_fin.groupby('Provider')['Month5'].sum()
Month6=patient_fin.groupby('Provider')['Month6'].sum()
Month7=patient_fin.groupby('Provider')['Month7'].sum()
Month8=patient_fin.groupby('Provider')['Month8'].sum()
Month9=patient_fin.groupby('Provider')['Month9'].sum()
Month10=patient_fin.groupby('Provider')['Month10'].sum()
Month11=patient_fin.groupby('Provider')['Month11'].sum()
Month12=patient_fin.groupby('Provider')['Month12'].sum()
```

```
In [98]: #medical cases counts
alzheimer_cnt=patient_fin.groupby('Provider')['ChronicCond_Alzheimer'].sum()
Hrt_failure=patient_fin.groupby('Provider')['ChronicCond_Heartfailure'].sum()
kidney_dis=patient_fin.groupby('Provider')['ChronicCond_KidneyDisease'].sum()
Cancer=patient_fin.groupby('Provider')['ChronicCond_Cancer'].sum()
Pulmonary=patient_fin.groupby('Provider')['ChronicCond_ObstrPulmonary'].sum()
Depression=patient_fin.groupby('Provider')['ChronicCond_Depression'].sum()
Diabetes=patient_fin.groupby('Provider')['ChronicCond_Diabetes'].sum()
chemicHeart=patient_fin.groupby('Provider')['ChronicCond_IschemicHeart'].sum()
Osteoporasis=patient_fin.groupby('Provider')['ChronicCond_Osteoporasis'].sum()
Rheumatoid=patient_fin.groupby('Provider')['ChronicCond_rheumatoidarthritis'].sum()
Stroke=patient_fin.groupby('Provider')['ChronicCond_stroke'].sum()
```

```
In [99]: #number of unique attending physicians per provider
att_phys=patient_fin.groupby('Provider')['AttendingPhysician'].nunique()
op_phys=patient_fin.groupby('Provider')['OperatingPhysician'].nunique()
othr_phys=patient_fin.groupby('Provider')['OtherPhysician'].nunique()
```

```
In [100]: #total number of unique diagnosis code per provider
diagnosis_codes=patient_fin.groupby('Provider')['ClmAdmitDiagnosisCode'].nunique()
diagnosis_grp_codes=patient_fin.groupby('Provider')['DiagnosisGroupCode'].nunique()
diagnosis_code1=patient_fin.groupby('Provider')['ClmDiagnosisCode_1'].nunique()
diagnosis_code2=patient_fin.groupby('Provider')['ClmDiagnosisCode_2'].nunique()
diagnosis_code3=patient_fin.groupby('Provider')['ClmDiagnosisCode_3'].nunique()
diagnosis_code4=patient_fin.groupby('Provider')['ClmDiagnosisCode_4'].nunique()
diagnosis_code5=patient_fin.groupby('Provider')['ClmDiagnosisCode_5'].nunique()
diagnosis_code6=patient_fin.groupby('Provider')['ClmDiagnosisCode_6'].nunique()
diagnosis_code7=patient_fin.groupby('Provider')['ClmDiagnosisCode_7'].nunique()
diagnosis_code8=patient_fin.groupby('Provider')['ClmDiagnosisCode_8'].nunique()
diagnosis_code9=patient_fin.groupby('Provider')['ClmDiagnosisCode_9'].nunique()
diagnosis_code10=patient_fin.groupby('Provider')['ClmDiagnosisCode_10'].nunique()
```

```
In [101]: #total number of unique procedure codes per provider
procedure_code_1=patient_fin.groupby('Provider')['ClmProcedureCode_1'].nunique()
procedure_code_2=patient_fin.groupby('Provider')['ClmProcedureCode_2'].nunique()
procedure_code_3=patient_fin.groupby('Provider')['ClmProcedureCode_3'].nunique()
procedure_code_4=patient_fin.groupby('Provider')['ClmProcedureCode_4'].nunique()
procedure_code_5=patient_fin.groupby('Provider')['ClmProcedureCode_5'].nunique()
procedure_code_6=patient_fin.groupby('Provider')['ClmProcedureCode_6'].nunique()
```

```
In [102]: num_inpatients=patient_fin.groupby('Provider')['inp_out'].sum()
num_outpatients=patient_fin.groupby('Provider')['inp_out'].count()-patient_fin.groupby('Provider')['inp_out'].sum()
```

```
In [103]: unq_state=patient_fin.groupby('Provider')['State'].nunique()
unq_county=patient_fin.groupby('Provider')['County'].nunique()
```

```
In [104]: patient_agg=pd.concat([procedure_code_1,procedure_code_2,procedure_code_3,
                                procedure_code_4,procedure_code_5,procedure_code_6,num_inpatients,
                                num_outpatients,diagnosis_codes,diagnosis_grp_codes,diagnosis_code1,
                                diagnosis_code2,diagnosis_code3,diagnosis_code4,diagnosis_code5,
                                diagnosis_code6,diagnosis_code7,diagnosis_code8,diagnosis_code9,diagnosis_code10,
                                att_phys,op_phys,othr_phys,alzheimer_cnt,Hrt_failure,
                                kidney_dis,Cancer,Pulmonary,Depression,Diabetes,chemicHeart,
                                Osteoporasis,Rheumatoid,Stroke,Month0,Month1,
                                Month2,Month3,Month4,Month5,Month6,Month7,Month8,
                                Month9,Month10,Month11,Month12,Num_males,Num_race1,
                                Num_race2,Num_race3,Num_race5,Ren_disease,Avg_clm_reimbursed,
                                Tot_clm_reimbursed,Avg_inpclm_reimbursed,Tot_inpclm_reimbursed,
                                Avg_inp_deductible,Tot_inp_deductible,Avg_out_reimbursement,
                                Tot_out_deductible,Avg_age,Avg_settlement,Freq_settlement,Avg_days_admit
```

```
,Avg_total_deductible,Sum_total_deductible,Avg_total_reimbursible,
Sum_total_reimbursible,num_claims,unq_state,unq_county
],axis=1)
```

```
In [105... provider=patient_agg.merge(train_data,how='inner',on='Provider')
```

```
In [106... provider.PotentialFraud=provider.PotentialFraud.map({'Yes':1,'No':0})
```

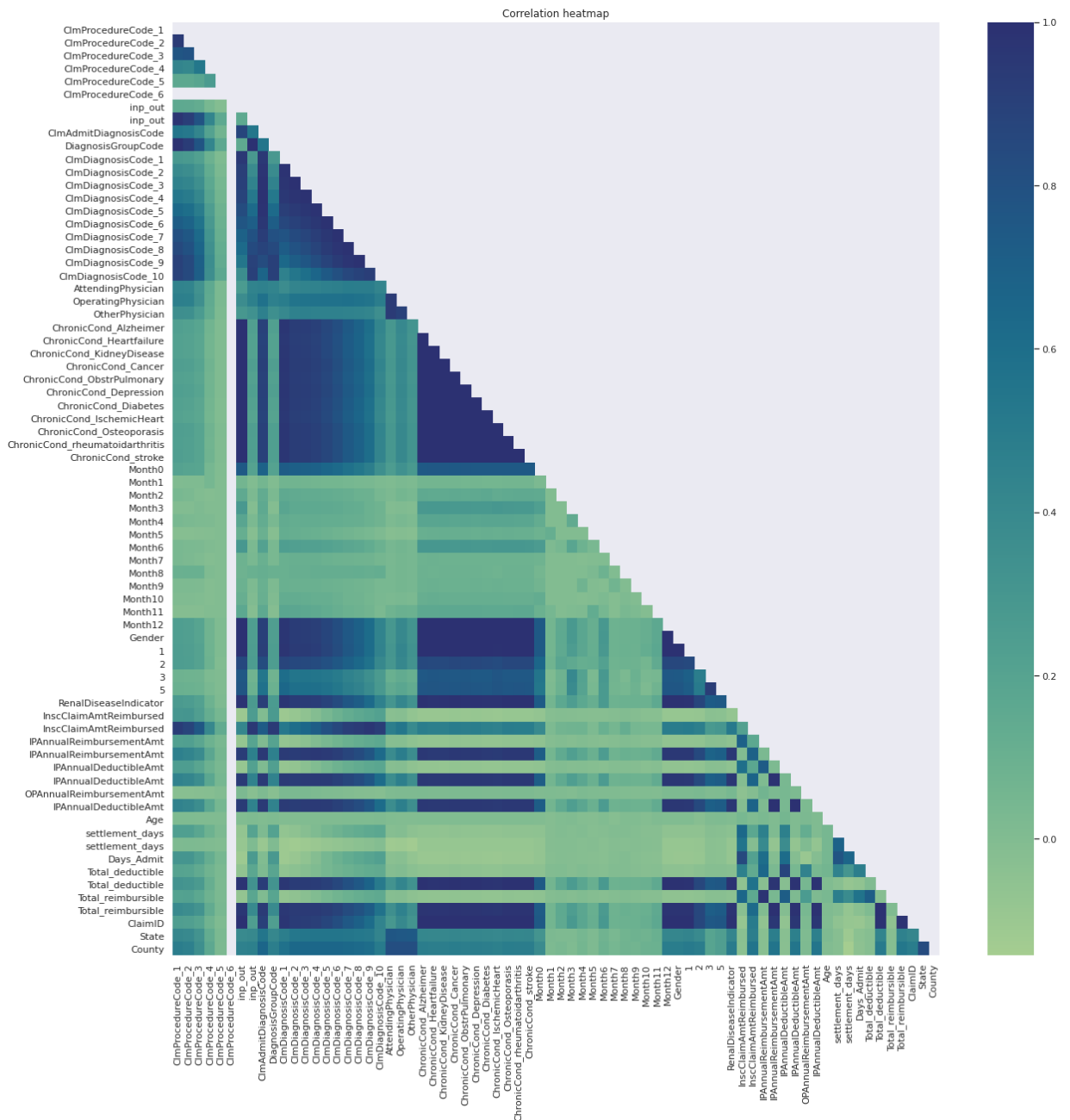
Now we have our aggregated features which can be used to predict whether a provider is fraudulent or not.This concludes our preprocessing and EDA. For further process we will first be splitting the dataset into train and test set in order to avoid data leakage.

```
In [140... #Doing the train test split
from sklearn.model_selection import train_test_split
X_train,X_test,y_train,y_test=train_test_split(provider.drop('PotentialFraud',axis=1),provider['PotentialFraud'],test_si
```

Lets find out correlation amongst feature variables.

### Feature selection

```
In [141... #finding the correlation amongst features
plt.figure(figsize=(20, 20))
plt.title('Correlation heatmap')
corr=X_train.corr()
mask=np.triu(corr)
sns.heatmap(corr,cmap='crest',mask=mask)
plt.show()
```



```
In [142... up=corr.where(np.triu(np.ones(corr.shape),k=1).astype(np.bool))
```

```
In [143... td=[col for col in up.columns if any(abs(up[col])>0.99)]
```

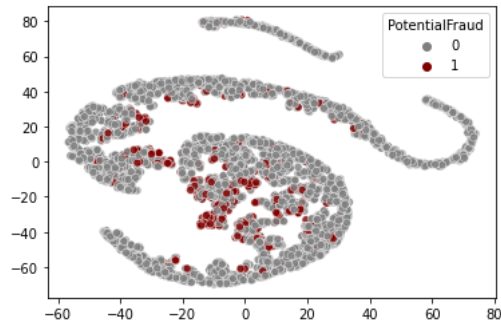
Dropping the highly correlated features..

```
In [144... X_train.drop(td,axis=1,inplace=True)
X_test.drop(td,axis=1,inplace=True)
```

Visualizing using a TSNE plot..

```
In [113... from sklearn.manifold import TSNE
colors=['gray','maroon']
customPalette = sns.set_palette(sns.color_palette(colors))
prov_emb=TSNE(n_components=2,perplexity=40,n_iter=1000).fit_transform(X_train.drop('Provider',axis=1))
sns.scatterplot(x=prov_emb[:,0],y=prov_emb[:,1],hue=y_train,palette=customPalette,alpha=0.8)
```

```
Out[113... <matplotlib.axes._subplots.AxesSubplot at 0x7ffab4eeaa90>
```



From TSNE plot we observe both classes are somewhat separable with non fraud class observation spread all over and fraudulent ones

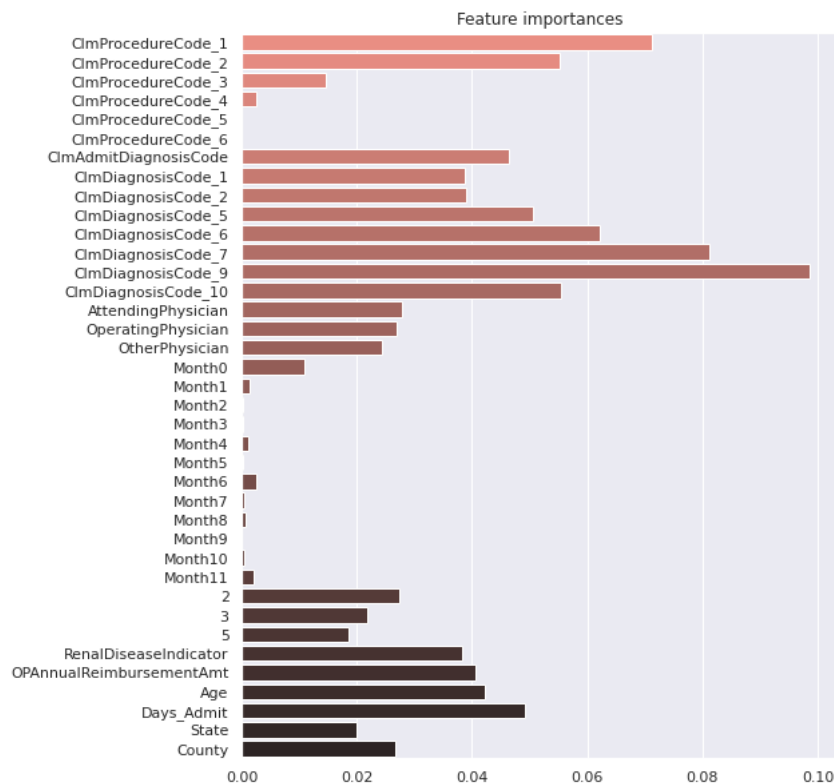
```
In [145... # prv_id=provider['Provider']
X_train.drop('Provider',axis=1,inplace=True)
X_test.drop('Provider',axis=1,inplace=True)
```

Lets find which features are important in making prediction..

```
In [146... from sklearn.ensemble import RandomForestClassifier
r_cfl=RandomForestClassifier(n_estimators=1000,random_state=42,n_jobs=-1)
r_cfl.fit(X_train,y_train)
# predict_y = r_cfl.predict(provider.drop('PotentialFraud',axis=1))
```

```
Out[146... RandomForestClassifier(bootstrap=True, ccp_alpha=0.0, class_weight=None,
                           criterion='gini', max_depth=None, max_features='auto',
                           max_leaf_nodes=None, max_samples=None,
                           min_impurity_decrease=0.0, min_impurity_split=None,
                           min_samples_leaf=1, min_samples_split=2,
                           min_weight_fraction_leaf=0.0, n_estimators=1000,
                           n_jobs=-1, oob_score=False, random_state=42, verbose=0,
                           warm_start=False)
```

```
In [147... features=X_train.columns
coef = pd.Series(r_cfl.feature_importances_,features).sort_values()
plt.figure(figsize=(8,10))
plt.title('Feature importances')
sns.barplot(x=r_cfl.feature_importances_,y=features,palette='dark:salmon_r')
plt.show()
```



We see that features like Month0-12, procedurecode5,6 and physician required are not contributing much in prediction of random forest model. So we decide to drop these features.

```
In [148... #dropping less important features
coef=coef[coef<0.005].index
X_train.drop(coef,axis=1,inplace=True)
X_test.drop(coef,axis=1,inplace=True)
```

As we have already seen there was class imbalance we need to address the issue before moving forward. We can try following approaches

- Resampling (Over sampling)
- Creating synthetic samples of minority class
- Balancing class weights
- Clustering based resampling
- Clustering based sampling and aggregation

## Modelling

```
In [149... def Heatmapgen(x):
#https://medium.com/@dtuk81/confusion-matrix-visualization-fc31e3f30fea referred from here
group_names = ['True -ve','False +ve','False -ve','True +ve']
group_counts = ['{0:0.0f}'.format(value) for value in x.flatten()]
labels = [f'{v1}\n{v2}' for v1, v2 in zip(group_names,group_counts)]
labels = np.asarray(labels).reshape(2,2)
sns.heatmap(x, annot=labels, fmt='', cmap='RdBu')
```

### Random Oversampling

```
In [150... #Random oversampling
from imblearn.over_sampling import RandomOverSampler
oversample = RandomOverSampler(sampling_strategy='minority')
X_over, y_over = oversample.fit_resample(X_train, y_train)

In [151... from sklearn.metrics import f1_score
r_cfl=RandomForestClassifier(n_estimators=1000,random_state=21,n_jobs=-1)
r_cfl.fit(X_over,y_over)
predict_y = r_cfl.predict(X_test)
print('F1 score on oversampled data:',f1_score(y_test,predict_y))
```

F1 score on oversampled data: 0.6464646464646465

### Synthetic minority oversampling(SMOTE)

```
In [152... #Synthetic oversampling
from imblearn.over_sampling import SMOTE
oversample = SMOTE()
X_synt, y_synt = oversample.fit_resample(X_train, y_train)

In [ ]: r_cfl=RandomForestClassifier(n_estimators=1000,random_state=42,n_jobs=-1)
```

```
r_cfl.fit(X_synt,y_synt)
predict_y = r_cfl.predict(X_test)
print('F1 score on oversampled data:',f1_score(y_test,predict_y))
```

F1 score on oversampled data: 0.5833333333333334

### Class weights balancing

```
In [ ]: #using balanced class weights
r_cfl=RandomForestClassifier(n_estimators=1000,random_state=42,n_jobs=-1,class_weight='balanced_subsample')
r_cfl.fit(X_train,y_train)
predict_y = r_cfl.predict(X_test)
print('F1 score on oversampled data:',f1_score(y_test,predict_y))
```

F1 score on oversampled data: 0.6046511627906976

### Cluster based resampling:

<https://www.quora.com/In-classification-how-do-you-handle-an-unbalanced-training-set>

#### Idea:

In this approach we will divide the majority class data into  $k$  clusters where  $k$  being the number of points in the minority class. Then of these cluster we can find the cluster centroids and use it instead of majority class data. Now due to resampling we have our classes balanced.

```
In [ ]: #clustering based resampling
from sklearn.cluster import KMeans
model = KMeans(n_clusters=y_train.value_counts()[1]) #making same number of clusters as minority class
model.fit(X_train)
```

```
Out[ ]: KMeans(algorithm='auto', copy_x=True, init='k-means++', max_iter=300,
              n_clusters=455, n_init=10, n_jobs=None, precompute_distances='auto',
              random_state=None, tol=0.0001, verbose=0)
```

```
In [ ]: X_clust=model.cluster_centers_
X_pos=X_train[y_train==1]
X_clust=np.vstack((X_pos.values,X_clust))
y_clust=[1 if i>455 else 0 for i in range(910)]
```

```
In [ ]: r_cfl=RandomForestClassifier(n_estimators=1000,random_state=42,n_jobs=-1)
r_cfl.fit(X_clust,y_clust)
predict_y = r_cfl.predict(X_test)
print('F1 score on oversampled data:',f1_score(y_test,predict_y))
```

F1 score on oversampled data: 0.27522935779816515

<https://www.quora.com/In-classification-how-do-you-handle-an-unbalanced-training-set>

### Clustering and aggregation:

#### Idea:

In order to handle class imbalance we can divide the abundant class labels into  $L$  number of clusters. Then we will build  $L$  models each of which will be trained on (individual cluster+minority class data). We will evaluate on test set data. After getting the predictions we will do a majority vote and predict the majority as class label

```
In [ ]: X_neg=X_train[y_train==0]
X_pos=X_train[y_train==1]
from sklearn.cluster import KMeans
model = KMeans(n_clusters=3,tol=0.001,max_iter=500,n_init=20) #making same number of clusters as minority class
model.fit(X_neg)
label=model.labels_
```

```
In [ ]: predictions=[]
for i in range(5):
    X_l=np.vstack((X_pos,X_neg[label==i]))
    y_l=[1 if i<455 else 0 for i in range(455+len(X_neg[label==i]))]
    r_cfl=RandomForestClassifier(n_estimators=1000,random_state=42,n_jobs=-1)
    r_cfl.fit(X_l,y_l)
    predict_y = r_cfl.predict(X_test)
    predictions.append(predict_y)
print('F1 score on oversampled data:',f1_score(y_test,predict_y,average='macro'))
# plot_confusion_matrix(y_test,predict_y)
```

F1 score on oversampled data: 0.7116204690831557

F1 score on oversampled data: 0.10278227010991048

F1 score on oversampled data: 0.20349709147691203

F1 score on oversampled data: 0.08614864864864864

F1 score on oversampled data: 0.08614864864864864

```
In [ ]: sum=0
for i in predictions:
    sum+=i
y_pred=np.where(sum>2,1,0)
f1_score(y_test,y_pred)
```

Out[ ]: 0.17229729729729729

### Repeated random undersampling and aggregation

#### Idea:

We can randomly sample points from majority class labels of size same as minority class labels. Then we will build  $k$  such classifiers on (sampled data+minority class data). We will get the predictions from  $k$  models and will do a majority vote to predict the final output.

```
In [ ]: predictions=[]
for i in range(11):
    ch=int(np.random.uniform(0,3900)) #randomly selecting samples from majority class
    X_samp=X_neg.iloc[ch:ch+455]
    X_clust=np.vstack((X_pos.values,X_samp)) #stacking both +ve sampled class and -ve class and training
    y_clust=[1 if i<455 else 0 for i in range(910)]
    r_cfl=RandomForestClassifier(n_estimators=1000,random_state=42,n_jobs=-1)
    r_cfl.fit(X_clust,y_clust)
    predict_y = r_cfl.predict(X_test) #predicting on test data
    predictions.append(predict_y)
    print('F1 score:',f1_score(y_test,predict_y))
```

```
F1 score: 0.48275862068965514
F1 score: 0.5030674846625767
F1 score: 0.49696969696969695
F1 score: 0.4938271604938272
F1 score: 0.49710982658959546
F1 score: 0.4912280701754386
F1 score: 0.49438202247191004
F1 score: 0.5185185185185186
F1 score: 0.4970414201183432
F1 score: 0.47953216374269014
F1 score: 0.5060240963855422
```

```
In [ ]: #based on majority votes predicting the f1 score
sum=0
for i in predictions:
    sum+=i
y_pred=np.where(sum>5,1,0)
f1_score(y_test,y_pred)
```

```
Out [ ]: 0.4939759036144578
```

From above trials we saw that simple oversampling of minority class labels gave a high F1 score the complex methods.

With this we are ready for modelling. We will use random oversampling and class weight balancing technique to address the class imbalance..

### Model Building

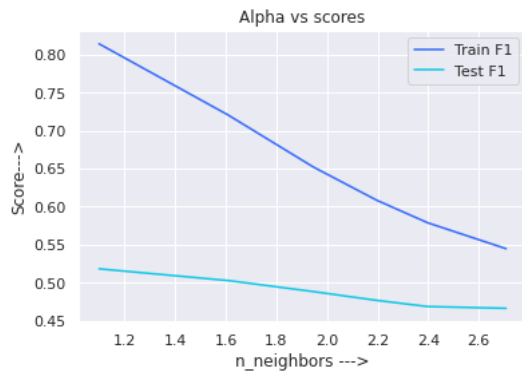
We will be using oversampling method in order to address class imbalance. But we cannot use oversampled data for validation as it will cause data leakage. Instead we will build a pipeline to ensure there is no leakage whatsoever..

Below blog explains it beautifully..

<https://medium.com/lumiata/cross-validation-for-imbalanced-datasets-9d203ba47e8#:~:text=Techniques%20like%20oversampling%2FSMOTE%20help,exclude%20some%20data%20for%20validation.>

### 1 K Nearest Neighbors

```
In [257]: from sklearn.model_selection import RepeatedStratifiedKFold
from sklearn.model_selection import cross_val_score
from imblearn.pipeline import Pipeline
import math
from sklearn.neighbors import KNeighborsClassifier
from sklearn.model_selection import GridSearchCV
steps=list()
param={'model__n_neighbors':[3,5,7,9,11,15]}
steps.append(('scaler', StandardScaler()))
steps.append(('sampling',RandomOverSampler()))
steps.append(('model', KNeighborsClassifier()))
pipeline = Pipeline(steps=steps)
clf = GridSearchCV(pipeline, param, cv=10, scoring='f1',return_train_score=True)
clf.fit(X_train,y_train)
result_clf=pd.DataFrame.from_dict(clf.cv_results_)
result_clf=result_clf.sort_values('param_model__n_neighbors')
result_cv=result_clf['mean_test_score']
result_train=result_clf['mean_train_score']
alpha_vals = [math.log(i) for i in result_clf['param_model__n_neighbors']]
plt.figure(figsize=(6,4))
sns.lineplot(x=alpha_vals,y=result_train,markers='o',label='Train F1')
sns.lineplot(x=alpha_vals,y=result_cv,markers='o',label='Test F1')
sns.set(palette='rainbow')
plt.xlabel('n_neighbors --->')
plt.ylabel('Score--->')
plt.title('Alpha vs scores')
plt.show()
print('Best estimator :',clf.best_params_)
print('Best score:',clf.best_score_)
```



Best estimator : {'model\_\_n\_neighbors': 3}  
Best score: 0.5182023224872998

```
In [258... q=clf.predict(X_test)
print('Test F1 score:',f1_score(y_test,q))
```

Test F1 score: 0.5

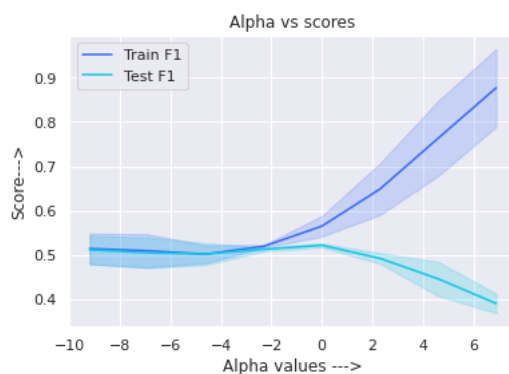
## 2 Naive Bayes classifier

```
In [267... from sklearn.naive_bayes import GaussianNB
clf=GaussianNB(priors=[0.9,0.1])
clf.fit(X_train,y_train)
ytr_pred=clf.predict(X_train)
print('Train set F1 score : ',f1_score(y_train,ytr_pred))
q=clf.predict(X_test)
print('Test set F1 score : ',f1_score(y_test,q))
```

Train set F1 score : 0.5449218750000001  
Test set F1 score : 0.5454545454545455

## 3 SVM

```
In [268... from sklearn.model_selection import RepeatedStratifiedKFold
from sklearn.model_selection import cross_val_score
from imblearn.pipeline import Pipeline
import math
from sklearn.svm import SVC
from sklearn.model_selection import GridSearchCV
steps=list()
param={'model__C':[10**i for i in range(-4,4)], 'model__gamma':['scale','auto']}
steps.append(('scaler', StandardScaler()))
steps.append(('sampling',RandomOverSampler()))
steps.append(('model', SVC()))
pipeline = Pipeline(steps=steps)
clf = GridSearchCV(pipeline, param, cv=10, scoring='f1',return_train_score=True)
clf.fit(X_train,y_train)
result_clf=pd.DataFrame.from_dict(clf.cv_results_)
result_clf=result_clf.sort_values('param_model__C')
result_cv=result_clf['mean_test_score']
result_train=result_clf['mean_train_score']
alpha_vals = [math.log(i) for i in result_clf['param_model__C']]
plt.figure(figsize=(6,4))
sns.lineplot(x=alpha_vals,y=result_train,markers='o',label='Train F1')
sns.lineplot(x=alpha_vals,y=result_cv,markers='o',label='Test F1')
sns.set(palette='rainbow')
plt.xlabel('Alpha values --->')
plt.ylabel('Score--->')
plt.title('Alpha vs scores')
plt.show()
print('Best estimator : ',clf.best_params_)
print('Best score:',clf.best_score_)
```



Best estimator : {'model\_\_C': 0.0001, 'model\_\_gamma': 'scale'}  
Best score: 0.5441427261880476

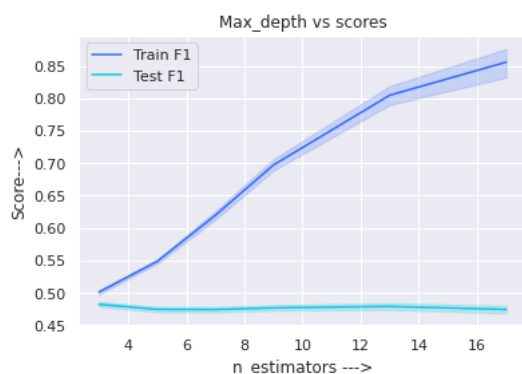
```
In [269... q=clf.predict(X_test)
print('Test F1 score:',f1_score(y_test,q))
```

Test F1 score: 0.5641025641025642

## 4.DecisionTree



```
In [ ]: from sklearn.tree import DecisionTreeClassifier
param={'model__max_depth':[3,5,7,9,13,17]
      , 'model__min_samples_split':[3,5,7,11]
      , 'model__criterion':['gini','entropy'],
      , 'model__min_samples_leaf':[1,3,5,7,11]
      }
steps=[]
steps.append(('sampling',RandomOverSampler()))
steps.append(('model', DecisionTreeClassifier()))
pipeline = Pipeline(steps=steps)
clf = GridSearchCV(pipeline, param, cv=3, scoring='f1',return_train_score=True)
clf.fit(X_train.values,y_train)
result_clf=pd.DataFrame.from_dict(clf.cv_results_)
result_clf=result_clf.sort_values('param_model__max_depth')
result_cv=result_clf['mean_test_score']
result_train=result_clf['mean_train_score']
alpha_vals = [i for i in result_clf['param_model__max_depth']]
plt.figure(figsize=(6,4))
sns.lineplot(x=alpha_vals,y=result_train,markers='o',label='Train F1')
sns.lineplot(x=alpha_vals,y=result_cv,markers='o',label='Test F1')
sns.set(palette='rainbow')
plt.xlabel('n_estimators --->')
plt.ylabel('Score--->')
plt.title('Max_depth vs scores')
plt.show()
print('Best estimator :',clf.best_params_)
print('Best score:',clf.best_score_)
```



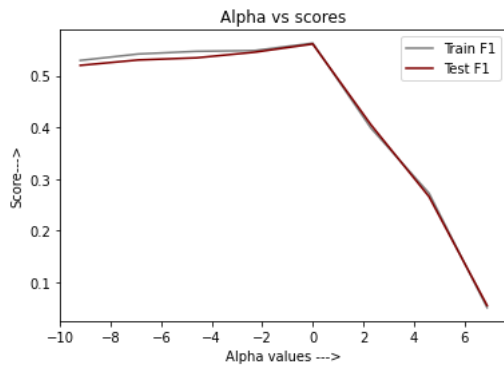
```
Best estimator : {'model__criterion': 'gini', 'model__max_depth': 13, 'model__min_samples_leaf': 11, 'model__min_samples_split': 5}
Best score: 0.536315045583449
```

```
In [ ]: q=clf.predict(X_test.values)
f1_score(q,y_test)
```

```
Out[ ]: 0.5448028673835126
```

## 5 Logistic Regression

```
In [124... from sklearn.model_selection import RepeatedStratifiedKFold
from sklearn.model_selection import cross_val_score
from imblearn.pipeline import Pipeline
import math
from sklearn.ensemble import RandomForestClassifier
from sklearn.model_selection import GridSearchCV
steps=list()
param={'model__alpha':[10**i for i in range(-4,4)]}
steps.append(('scaler', StandardScaler()))
steps.append(('sampling',RandomOverSampler()))
steps.append(('model', SGDClassifier()))
pipeline = Pipeline(steps=steps)
clf = GridSearchCV(pipeline, param, cv=10, scoring='f1',return_train_score=True)
clf.fit(X_train,y_train)
result_clf=pd.DataFrame.from_dict(clf.cv_results_)
result_clf=result_clf.sort_values('param_model__alpha')
result_cv=result_clf['mean_test_score']
result_train=result_clf['mean_train_score']
alpha_vals = [math.log(i) for i in result_clf['param_model__alpha']]
plt.figure(figsize=(6,4))
sns.lineplot(x=alpha_vals,y=result_train,markers='o',label='Train F1')
sns.lineplot(x=alpha_vals,y=result_cv,markers='o',label='Test F1')
sns.set(palette='rainbow')
plt.xlabel('Alpha values --->')
plt.ylabel('Score--->')
plt.title('Alpha vs scores')
plt.show()
print('Best estimator :',clf.best_params_)
print('Best score:',clf.best_score_)
```



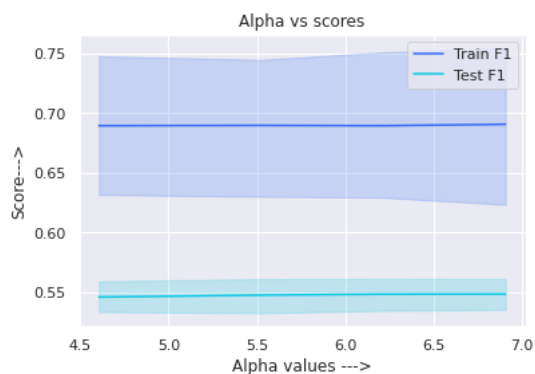
Best estimator : {'model\_\_alpha': 1}  
Best score: 0.5614456450637259

```
In [125... q=clf.predict(X_test)
print('Test F1 score:', f1_score(y_test,q))
```

Test F1 score: 0.5693430656934306

## 6. Random Forest Classifier

```
In [249... import math
from imblearn.over_sampling import SMOTE
from sklearn.ensemble import RandomForestClassifier
from sklearn.model_selection import GridSearchCV
param={'model__n_estimators':[100,250,500,1000],
       'model__max_depth':[3,5,7,9,13],
       'model__min_samples_split':[2,5,7,9]}
steps=[]
steps.append(('sampling',RandomOverSampler()))
steps.append(('model', RandomForestClassifier(random_state=21)))
pipeline = Pipeline(steps=steps)
clf = GridSearchCV(pipeline, param, cv=10, scoring='f1',return_train_score=True)
clf.fit(X_train,y_train)
result_clf=pd.DataFrame.from_dict(clf.cv_results_)
result_clf=result_clf.sort_values('param_model__n_estimators')
result_cv=result_clf['mean_test_score']
result_train=result_clf['mean_train_score']
alpha_vals = [math.log(i) for i in result_clf['param_model__n_estimators']]
plt.figure(figsize=(6,4))
sns.lineplot(x=alpha_vals,y=result_train,markers='o',label='Train F1')
sns.lineplot(x=alpha_vals,y=result_cv,markers='o',label='Test F1')
sns.set(palette='rainbow')
plt.xlabel('Alpha values --->')
plt.ylabel('Score--->')
plt.title('Alpha vs scores')
plt.show()
print('Best estimator :',clf.best_params_)
print('Best score:',clf.best_score_)
```



Best estimator : {'model\_\_max\_depth': 13, 'model\_\_min\_samples\_split': 7, 'model\_\_n\_estimators': 250}  
Best score: 0.5879258688393139

```
In [250... q=clf.predict(X_test)
print('Test F1 score:', f1_score(y_test,q))
```

Test F1 score: 0.6115702479338843

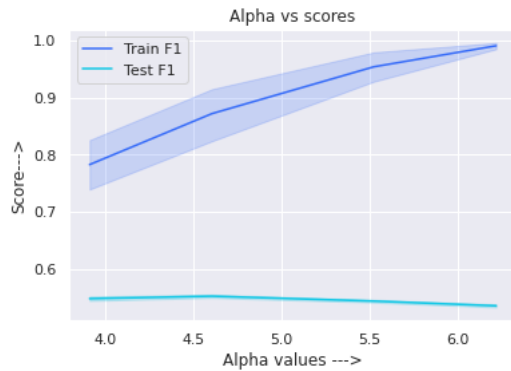
## 7 XgBoost with oversampling

```
In [255... import math
from xgboost import XGBClassifier
from sklearn.ensemble import RandomForestClassifier
from sklearn.model_selection import GridSearchCV
param={'model__n_estimators':[50,100,250,500],
       'model__max_depth':[3,5,7,9],
       'model__col_sample_bytree':[0.3,0.5,0.7],
       'model__subsample':[0.5,0.7,0.9]}
steps=[]
steps.append(('sampling',RandomOverSampler()))
steps.append(('model', XGBClassifier()))
```

```

pipeline = Pipeline(steps=steps)
clf = GridSearchCV(pipeline, param, cv=3, scoring='f1', return_train_score=True)
clf.fit(X_train.values, y_train)
result_clf = pd.DataFrame.from_dict(clf.cv_results_)
result_clf = result_clf.sort_values('param_model__n_estimators')
result_cv = result_clf['mean_test_score']
result_train = result_clf['mean_train_score']
alpha_vals = [math.log(i) for i in result_clf['param_model__n_estimators']]
plt.figure(figsize=(6,4))
sns.lineplot(x=alpha_vals, y=result_train, markers='o', label='Train F1')
sns.lineplot(x=alpha_vals, y=result_cv, markers='o', label='Test F1')
sns.set(palette='rainbow')
plt.xlabel('Alpha values --->')
plt.ylabel('Score--->')
plt.title('Alpha vs scores')
plt.show()
print('Best estimator :', clf.best_params_)
print('Best score:', clf.best_score_)

```



Best estimator : {'model\_\_col\_sample\_bytree': 0.7, 'model\_\_max\_depth': 7, 'model\_\_n\_estimators': 100, 'model\_\_subsample': 0.5}  
 Best score: 0.5723750673384669

```

In [256... q=clf.predict(X_test.values)
           f1_score(q,y_test)

```

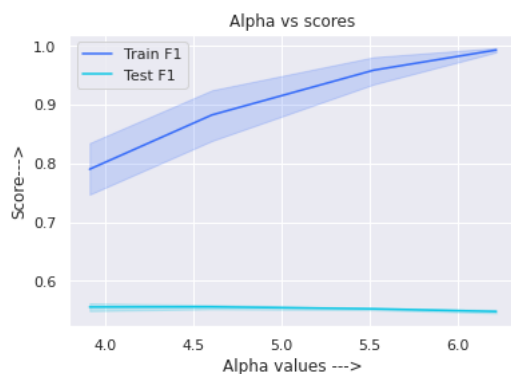
Out[256... 0.6050420168067226

## 8. XGBoost with class weight balancing

```

In [165... import math
from xgboost import XGBClassifier
from sklearn.model_selection import GridSearchCV
param={'model__n_estimators':[50,100,250,500]
      , 'model__max_depth':[3,5,7,9]
      , 'model__col_sample_bytree':[0.3,0.5,0.7]
      , 'model__subsample':[0.5,0.7,0.9]
      }
steps=[]
# steps.append(('sampling',RandomOverSampler()))
steps.append(('model', XGBClassifier(scale_pos_weight=9)))
pipeline = Pipeline(steps=steps)
clf = GridSearchCV(pipeline, param, cv=3, scoring='f1', return_train_score=True)
clf.fit(X_train.values, y_train)
result_clf = pd.DataFrame.from_dict(clf.cv_results_)
result_clf = result_clf.sort_values('param_model__n_estimators')
result_cv = result_clf['mean_test_score']
result_train = result_clf['mean_train_score']
alpha_vals = [math.log(i) for i in result_clf['param_model__n_estimators']]
plt.figure(figsize=(6,4))
sns.lineplot(x=alpha_vals, y=result_train, markers='o', label='Train F1')
sns.lineplot(x=alpha_vals, y=result_cv, markers='o', label='Test F1')
sns.set(palette='rainbow')
plt.xlabel('Alpha values --->')
plt.ylabel('Score--->')
plt.title('Alpha vs scores')
plt.show()
print('Best estimator :', clf.best_params_)
print('Best score:', clf.best_score_)

```



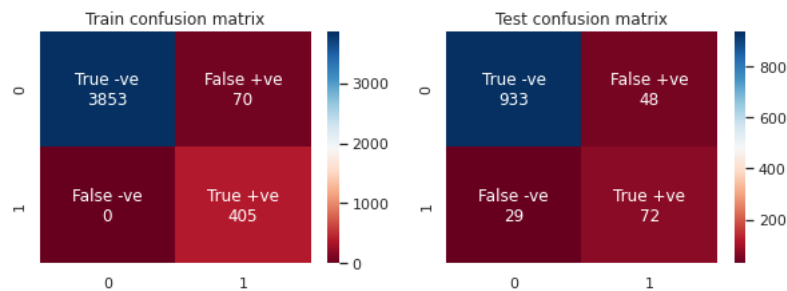
```
Best estimator : {'model__col_sample_bytree': 0.3, 'model__max_depth': 9, 'model__n_estimators': 50, 'model__subsampling': 0.7}
Best score: 0.5842871745411038
```

```
In [166... q=clf.predict(X_test.values)
           f1_score(q,y_test)
```

```
Out[166... 0.6515837104072398
```

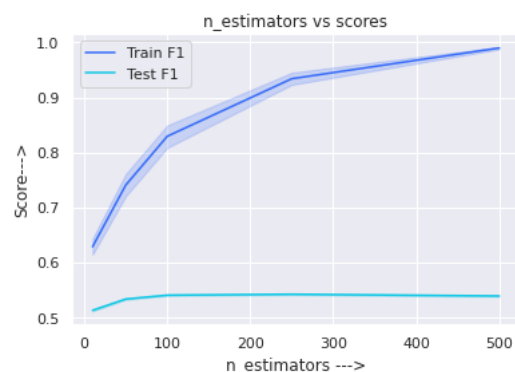
```
In [168... fig = plt.figure(figsize=(10,7))
ax1 = fig.add_subplot(221)
print("="*100)
from sklearn.metrics import confusion_matrix
cf_matr1=confusion_matrix(y_train,clf.predict(X_train.values))
plt.title('Train confusion matrix')
Heatmapgen(cf_matr1)
ax2 = fig.add_subplot(222)
cf_matr2=confusion_matrix(y_test,clf.predict(X_test.values))
plt.title('Test confusion matrix')
Heatmapgen(cf_matr2)
print('F1 score on test set =',f1_score(y_test,clf.predict(X_test.values)))
```

```
=====
F1 score on test set = 0.6515837104072398
```



## 9. LGBM classifier with oversampling

```
In [128... from lightgbm import LGBMClassifier
import math
from sklearn.ensemble import RandomForestClassifier
from sklearn.model_selection import GridSearchCV
param={ 'model__n_estimators':[10,50,100,250,500]
        , 'model__max_depth':[3,5,7,9]
        , 'model__min_data_in_leaf':[3,5,7,11]
        , 'model__min_gain_to_split':[0.0,0.1,0.3]
        , 'model__num_leaves':[8,32,64,96]
        }
steps=[]
steps.append(('sampling',RandomOverSampler()))
steps.append(('model', LGBMClassifier()))
pipeline = Pipeline(steps=steps)
clf = GridSearchCV(pipeline, param, cv=3, scoring='f1',return_train_score=True)
clf.fit(X_train.values,y_train)
result_clf=pd.DataFrame.from_dict(clf.cv_results_)
result_clf=result_clf.sort_values('param_model__n_estimators')
result_cv=result_clf['mean_test_score']
result_train=result_clf['mean_train_score']
alpha_vals = [i for i in result_clf['param_model__n_estimators']]
plt.figure(figsize=(6,4))
sns.lineplot(x=alpha_vals,y=result_train,markers='o',label='Train F1')
sns.lineplot(x=alpha_vals,y=result_cv,markers='o',label='Test F1')
sns.set(palette='rainbow')
plt.xlabel('n_estimators -->')
plt.ylabel('Score--->')
plt.title('n_estimators vs scores')
plt.show()
print('Best estimator :',clf.best_params_)
print('Best score:',clf.best_score_)
```



```
Best estimator : {'model__max_depth': 7, 'model__min_data_in_leaf': 11, 'model__min_gain_to_split': 0.3, 'model__n_estimators': 500, 'model__num_leaves': 32}
Best score: 0.5698382234096243
```

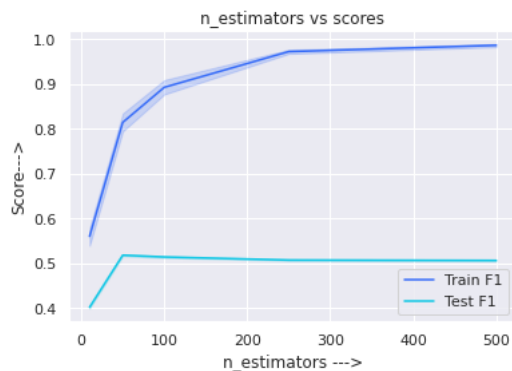
```
In [129... q=clf.predict(X_test.values)
```

```
f1_score(q,y_test)
```

Out[129... 0.5299145299145299

## 10. LightGBM with weight balancing

```
In [162... from lightgbm import LGBMClassifier
import math
from sklearn.ensemble import RandomForestClassifier
from sklearn.model_selection import GridSearchCV
param={ 'model__n_estimators':[10,50,100,250,500]
        , 'model__max_depth':[3,5,7,9]
        , 'model__min_data_in_leaf':[3,5,7,11]
        , 'model__min_gain_to_split':[0.0,0.1,0.3],
        , 'model__num_leaves':[8,32,64,96]
      }
steps=[]
# steps.append(('sampling',RandomOverSampler()))
steps.append(('model', LGBMClassifier()))
pipeline = Pipeline(steps=steps)
clf = GridSearchCV(pipeline, param, cv=3, scoring='f1',return_train_score=True)
clf.fit(X_train.values,y_train)
result_clf=pd.DataFrame.from_dict(clf.cv_results_)
result_clf=result_clf.sort_values('param_model__n_estimators')
result_cv=result_clf['mean_test_score']
result_train=result_clf['mean_train_score']
alpha_vals = [i for i in result_clf['param_model__n_estimators']]
plt.figure(figsize=(6,4))
sns.lineplot(x=alpha_vals,y=result_train,markers='o',label='Train F1')
sns.lineplot(x=alpha_vals,y=result_cv,markers='o',label='Test F1')
sns.set(palette='rainbow')
plt.xlabel('n_estimators --->')
plt.ylabel('Score--->')
plt.title('n_estimators vs scores')
plt.show()
print('Best estimator :',clf.best_params_)
print('Best score:',clf.best_score_)
```



Best estimator : {'model\_\_max\_depth': 3, 'model\_\_min\_data\_in\_leaf': 11, 'model\_\_min\_gain\_to\_split': 0.0, 'model\_\_n\_estimators': 50, 'model\_\_num\_leaves': 8}  
Best score: 0.554185582289079

```
In [163... q=clf.predict(X_test.values)
f1_score(q,y_test)
```

Out[163... 0.6551724137931033

```
In [164... fig = plt.figure(figsize=(10,7))
ax1 = fig.add_subplot(221)
print("="*100)
from sklearn.metrics import confusion_matrix
cf_matr1=confusion_matrix(y_train,clf.predict(X_train))
plt.title('Train confusion matrix')
Heatmapgen(cf_matr1)
ax2 = fig.add_subplot(222)
cf_matr2=confusion_matrix(y_test,clf.predict(X_test))
plt.title('Test confusion matrix')
Heatmapgen(cf_matr2)
print('F1 score on test set =',f1_score(y_test,clf.predict(X_test)))
```

=====

F1 score on test set = 0.6551724137931033



This model is giving comparable performance to Xgboost but at higher false negatives..

## 11. Catboost

```
In [ ]: !pip install catboost
```

```
In [172... from catboost import CatBoostClassifier
from lightgbm import LGBMClassifier
from sklearn.model_selection import GridSearchCV
param = {'model__depth' : [4,5,6,7,8,9, 10],
        'model__learning_rate' : [0.01,0.02,0.03,0.04],
        'model__iterations' : [10, 20,30,40,50,60,70,80,90, 100]
        }

steps=[]
# steps.append(('sampling',RandomOverSampler()))
steps.append(('model', CatBoostClassifier()))
pipeline = Pipeline(steps=steps)
clf = GridSearchCV(pipeline, param, cv=3, scoring='f1',return_train_score=True)
clf.fit(X_train.values,y_train)
result_clf=pd.DataFrame.from_dict(clf.cv_results_)
result_clf=result_clf.sort_values('param_model__depth')
result_cv=result_clf['mean_test_score']
result_train=result_clf['mean_train_score']
alpha_vals = [i for i in result_clf['param_model__depth']]
plt.figure(figsize=(6,4))
sns.lineplot(x=alpha_vals,y=result_train,markers='o',label='Train F1')
sns.lineplot(x=alpha_vals,y=result_cv,markers='o',label='Test F1')
sns.set(palette='rainbow')
plt.xlabel('n_estimators -->')
plt.ylabel('Score-->')
plt.title('De vs scores')
plt.show()
print('Best estimator :',clf.best_params_)
print('Best score:',clf.best_score_)
```

Streaming output truncated to the last 5000 lines.

0:	learn: 0.6374431	total: 36.9ms	remaining: 1.81s
1:	learn: 0.5752510	total: 72.7ms	remaining: 1.75s
2:	learn: 0.5299881	total: 107ms	remaining: 1.68s
3:	learn: 0.4868399	total: 142ms	remaining: 1.63s
4:	learn: 0.4476466	total: 177ms	remaining: 1.59s
5:	learn: 0.4194563	total: 211ms	remaining: 1.55s
6:	learn: 0.3957873	total: 253ms	remaining: 1.55s
7:	learn: 0.3706250	total: 287ms	remaining: 1.51s
8:	learn: 0.3433542	total: 322ms	remaining: 1.47s
9:	learn: 0.3192400	total: 356ms	remaining: 1.43s
10:	learn: 0.3003060	total: 391ms	remaining: 1.39s
11:	learn: 0.2837023	total: 426ms	remaining: 1.35s
12:	learn: 0.2738870	total: 468ms	remaining: 1.33s
13:	learn: 0.2590565	total: 509ms	remaining: 1.31s
14:	learn: 0.2509095	total: 544ms	remaining: 1.27s
15:	learn: 0.2417859	total: 581ms	remaining: 1.23s
16:	learn: 0.2320056	total: 618ms	remaining: 1.2s
17:	learn: 0.2246093	total: 661ms	remaining: 1.18s
18:	learn: 0.2181759	total: 708ms	remaining: 1.16s
19:	learn: 0.2108050	total: 744ms	remaining: 1.12s
20:	learn: 0.2034753	total: 782ms	remaining: 1.08s
21:	learn: 0.1992330	total: 818ms	remaining: 1.04s
22:	learn: 0.1932955	total: 854ms	remaining: 1s
23:	learn: 0.1896366	total: 891ms	remaining: 965ms
24:	learn: 0.1862890	total: 934ms	remaining: 934ms
25:	learn: 0.1832150	total: 970ms	remaining: 895ms
26:	learn: 0.1790708	total: 1s	remaining: 857ms
27:	learn: 0.1757052	total: 1.04s	remaining: 818ms
28:	learn: 0.1729793	total: 1.08s	remaining: 783ms
29:	learn: 0.1698562	total: 1.11s	remaining: 744ms
30:	learn: 0.1674814	total: 1.16s	remaining: 712ms
31:	learn: 0.1639651	total: 1.2s	remaining: 673ms
32:	learn: 0.1622546	total: 1.23s	remaining: 635ms
33:	learn: 0.1598741	total: 1.27s	remaining: 596ms
34:	learn: 0.1568186	total: 1.3s	remaining: 558ms
35:	learn: 0.1554774	total: 1.31s	remaining: 509ms
36:	learn: 0.1524067	total: 1.34s	remaining: 472ms
37:	learn: 0.1497032	total: 1.39s	remaining: 437ms
38:	learn: 0.1482602	total: 1.42s	remaining: 401ms
39:	learn: 0.1463871	total: 1.46s	remaining: 364ms
40:	learn: 0.1441313	total: 1.49s	remaining: 327ms
41:	learn: 0.1420593	total: 1.52s	remaining: 291ms
42:	learn: 0.1406964	total: 1.56s	remaining: 254ms
43:	learn: 0.1387918	total: 1.61s	remaining: 219ms
44:	learn: 0.1373152	total: 1.64s	remaining: 183ms
45:	learn: 0.1362762	total: 1.69s	remaining: 147ms
46:	learn: 0.1348280	total: 1.73s	remaining: 110ms
47:	learn: 0.1332868	total: 1.76s	remaining: 73.4ms
48:	learn: 0.1315807	total: 1.8s	remaining: 36.7ms
49:	learn: 0.1310403	total: 1.84s	remaining: 0us
0:	learn: 0.6372622	total: 35.9ms	remaining: 1.76s
1:	learn: 0.5821484	total: 71.5ms	remaining: 1.72s
2:	learn: 0.5311700	total: 116ms	remaining: 1.82s
3:	learn: 0.4847543	total: 156ms	remaining: 1.8s
4:	learn: 0.4424854	total: 193ms	remaining: 1.73s
5:	learn: 0.4155755	total: 229ms	remaining: 1.68s
6:	learn: 0.3923856	total: 266ms	remaining: 1.63s
7:	learn: 0.3672231	total: 303ms	remaining: 1.59s
8:	learn: 0.3396370	total: 348ms	remaining: 1.58s
9:	learn: 0.3190827	total: 384ms	remaining: 1.53s
10:	learn: 0.3014143	total: 420ms	remaining: 1.49s
11:	learn: 0.2851881	total: 458ms	remaining: 1.45s
12:	learn: 0.2731118	total: 494ms	remaining: 1.41s
13:	learn: 0.2589528	total: 531ms	remaining: 1.36s
14:	learn: 0.2477758	total: 575ms	remaining: 1.34s

15:	learn: 0.2378747	total: 613ms	remaining: 1.3s
16:	learn: 0.2285734	total: 649ms	remaining: 1.26s
17:	learn: 0.2202184	total: 689ms	remaining: 1.23s
18:	learn: 0.2134150	total: 736ms	remaining: 1.2s
19:	learn: 0.2059357	total: 775ms	remaining: 1.16s
20:	learn: 0.1996082	total: 823ms	remaining: 1.14s
21:	learn: 0.1955997	total: 859ms	remaining: 1.09s
22:	learn: 0.1921818	total: 894ms	remaining: 1.05s
23:	learn: 0.1884246	total: 931ms	remaining: 1.01s
24:	learn: 0.1851933	total: 967ms	remaining: 967ms
25:	learn: 0.1828785	total: 1.01s	remaining: 932ms
26:	learn: 0.1801108	total: 1.04s	remaining: 891ms
27:	learn: 0.1770605	total: 1.08s	remaining: 850ms
28:	learn: 0.1740757	total: 1.12s	remaining: 809ms
29:	learn: 0.1711643	total: 1.15s	remaining: 769ms
30:	learn: 0.1677197	total: 1.19s	remaining: 729ms
31:	learn: 0.1647914	total: 1.24s	remaining: 697ms
32:	learn: 0.1619562	total: 1.27s	remaining: 657ms
33:	learn: 0.1599197	total: 1.31s	remaining: 618ms
34:	learn: 0.1581559	total: 1.35s	remaining: 579ms
35:	learn: 0.1565452	total: 1.39s	remaining: 539ms
36:	learn: 0.1539540	total: 1.42s	remaining: 500ms
37:	learn: 0.1519285	total: 1.47s	remaining: 464ms
38:	learn: 0.1501880	total: 1.51s	remaining: 425ms
39:	learn: 0.1477981	total: 1.55s	remaining: 387ms
40:	learn: 0.1458797	total: 1.58s	remaining: 348ms
41:	learn: 0.1442349	total: 1.62s	remaining: 309ms
42:	learn: 0.1420435	total: 1.66s	remaining: 270ms
43:	learn: 0.1403873	total: 1.71s	remaining: 233ms
44:	learn: 0.1395320	total: 1.76s	remaining: 195ms
45:	learn: 0.1390222	total: 1.79s	remaining: 156ms
46:	learn: 0.1372055	total: 1.83s	remaining: 117ms
47:	learn: 0.1355598	total: 1.87s	remaining: 77.9ms
48:	learn: 0.1339611	total: 1.91s	remaining: 38.9ms
49:	learn: 0.1322620	total: 1.95s	remaining: 0us
0:	learn: 0.6791407	total: 35.8ms	remaining: 2.11s
1:	learn: 0.6627167	total: 80.9ms	remaining: 2.35s
2:	learn: 0.6477791	total: 116ms	remaining: 2.21s
3:	learn: 0.6325852	total: 151ms	remaining: 2.11s
4:	learn: 0.6181110	total: 188ms	remaining: 2.07s
5:	learn: 0.6063451	total: 223ms	remaining: 2.01s
6:	learn: 0.5923132	total: 257ms	remaining: 1.95s
7:	learn: 0.5801042	total: 299ms	remaining: 1.94s
8:	learn: 0.5684541	total: 333ms	remaining: 1.89s
9:	learn: 0.5560049	total: 368ms	remaining: 1.84s
10:	learn: 0.5442222	total: 403ms	remaining: 1.79s
11:	learn: 0.5324515	total: 437ms	remaining: 1.75s
12:	learn: 0.5232732	total: 472ms	remaining: 1.71s
13:	learn: 0.5117062	total: 513ms	remaining: 1.69s
14:	learn: 0.5006558	total: 550ms	remaining: 1.65s
15:	learn: 0.4921673	total: 586ms	remaining: 1.61s
16:	learn: 0.4836199	total: 605ms	remaining: 1.53s
17:	learn: 0.4748627	total: 639ms	remaining: 1.49s
18:	learn: 0.4667168	total: 682ms	remaining: 1.47s
19:	learn: 0.4578206	total: 723ms	remaining: 1.45s
20:	learn: 0.4486854	total: 759ms	remaining: 1.41s
21:	learn: 0.4410347	total: 803ms	remaining: 1.39s
22:	learn: 0.4325364	total: 839ms	remaining: 1.35s
23:	learn: 0.4265464	total: 874ms	remaining: 1.31s
24:	learn: 0.4200699	total: 909ms	remaining: 1.27s
25:	learn: 0.4142384	total: 954ms	remaining: 1.25s
26:	learn: 0.4072413	total: 989ms	remaining: 1.21s
27:	learn: 0.4009872	total: 1.02s	remaining: 1.17s
28:	learn: 0.3952050	total: 1.06s	remaining: 1.14s
29:	learn: 0.3889355	total: 1.12s	remaining: 1.12s
30:	learn: 0.3837602	total: 1.15s	remaining: 1.08s
31:	learn: 0.3779735	total: 1.2s	remaining: 1.05s
32:	learn: 0.3716509	total: 1.23s	remaining: 1.01s
33:	learn: 0.3658556	total: 1.27s	remaining: 972ms
34:	learn: 0.3601986	total: 1.31s	remaining: 936ms
35:	learn: 0.3556856	total: 1.34s	remaining: 897ms
36:	learn: 0.3506903	total: 1.39s	remaining: 864ms
37:	learn: 0.3454717	total: 1.43s	remaining: 825ms
38:	learn: 0.3400025	total: 1.46s	remaining: 787ms
39:	learn: 0.3359606	total: 1.5s	remaining: 749ms
40:	learn: 0.3319888	total: 1.53s	remaining: 711ms
41:	learn: 0.3281915	total: 1.57s	remaining: 673ms
42:	learn: 0.3234134	total: 1.62s	remaining: 642ms
43:	learn: 0.3196161	total: 1.66s	remaining: 604ms
44:	learn: 0.3148530	total: 1.71s	remaining: 569ms
45:	learn: 0.3105316	total: 1.74s	remaining: 531ms
46:	learn: 0.3072915	total: 1.78s	remaining: 492ms
47:	learn: 0.3028888	total: 1.82s	remaining: 455ms
48:	learn: 0.2997492	total: 1.87s	remaining: 419ms
49:	learn: 0.2963930	total: 1.9s	remaining: 381ms
50:	learn: 0.2936002	total: 1.94s	remaining: 342ms
51:	learn: 0.2905221	total: 1.97s	remaining: 304ms
52:	learn: 0.2868780	total: 2.01s	remaining: 266ms
53:	learn: 0.2836925	total: 2.05s	remaining: 227ms
54:	learn: 0.2817627	total: 2.05s	remaining: 186ms
55:	learn: 0.2791311	total: 2.1s	remaining: 150ms
56:	learn: 0.2758002	total: 2.13s	remaining: 112ms
57:	learn: 0.2733280	total: 2.17s	remaining: 74.8ms
58:	learn: 0.2711165	total: 2.2s	remaining: 37.4ms
59:	learn: 0.2685101	total: 2.24s	remaining: 0us
0:	learn: 0.6788236	total: 35.1ms	remaining: 2.07s
1:	learn: 0.6615390	total: 70.2ms	remaining: 2.04s
2:	learn: 0.6457778	total: 106ms	remaining: 2.01s
3:	learn: 0.6310168	total: 141ms	remaining: 1.97s
4:	learn: 0.6156249	total: 177ms	remaining: 1.94s
5:	learn: 0.5990069	total: 212ms	remaining: 1.91s
6:	learn: 0.5880764	total: 256ms	remaining: 1.93s

7:	learn: 0.5752112	total: 291ms	remaining: 1.89s
8:	learn: 0.5622940	total: 339ms	remaining: 1.92s
9:	learn: 0.5482712	total: 373ms	remaining: 1.87s
10:	learn: 0.5354771	total: 408ms	remaining: 1.82s
11:	learn: 0.5231399	total: 443ms	remaining: 1.77s
12:	learn: 0.5138478	total: 489ms	remaining: 1.77s
13:	learn: 0.5010520	total: 524ms	remaining: 1.72s
14:	learn: 0.4894648	total: 559ms	remaining: 1.68s
15:	learn: 0.4806031	total: 594ms	remaining: 1.63s
16:	learn: 0.4716255	total: 612ms	remaining: 1.55s
17:	learn: 0.4629426	total: 647ms	remaining: 1.51s
18:	learn: 0.4543146	total: 682ms	remaining: 1.47s
19:	learn: 0.4450274	total: 726ms	remaining: 1.45s
20:	learn: 0.4360269	total: 763ms	remaining: 1.42s
21:	learn: 0.4288315	total: 799ms	remaining: 1.38s
22:	learn: 0.4198105	total: 838ms	remaining: 1.35s
23:	learn: 0.4137630	total: 874ms	remaining: 1.31s
24:	learn: 0.4069434	total: 911ms	remaining: 1.27s
25:	learn: 0.4010151	total: 954ms	remaining: 1.25s
26:	learn: 0.3921870	total: 992ms	remaining: 1.21s
27:	learn: 0.3856900	total: 1.03s	remaining: 1.18s
28:	learn: 0.3794459	total: 1.06s	remaining: 1.14s
29:	learn: 0.3734359	total: 1.1s	remaining: 1.1s
30:	learn: 0.3676631	total: 1.14s	remaining: 1.06s
31:	learn: 0.3600506	total: 1.18s	remaining: 1.03s
32:	learn: 0.3547393	total: 1.22s	remaining: 999ms
33:	learn: 0.3490570	total: 1.26s	remaining: 962ms
34:	learn: 0.3434171	total: 1.29s	remaining: 924ms
35:	learn: 0.3388457	total: 1.34s	remaining: 893ms
36:	learn: 0.3329704	total: 1.38s	remaining: 855ms
37:	learn: 0.3275250	total: 1.42s	remaining: 823ms
38:	learn: 0.3233160	total: 1.46s	remaining: 785ms
39:	learn: 0.3194589	total: 1.49s	remaining: 746ms
40:	learn: 0.3153729	total: 1.53s	remaining: 708ms
41:	learn: 0.3118610	total: 1.56s	remaining: 670ms
42:	learn: 0.3068602	total: 1.6s	remaining: 632ms
43:	learn: 0.3034702	total: 1.65s	remaining: 598ms
44:	learn: 0.3001024	total: 1.68s	remaining: 560ms
45:	learn: 0.2954749	total: 1.72s	remaining: 522ms
46:	learn: 0.2923391	total: 1.75s	remaining: 484ms
47:	learn: 0.2874109	total: 1.78s	remaining: 446ms
48:	learn: 0.2848988	total: 1.82s	remaining: 409ms
49:	learn: 0.2811443	total: 1.86s	remaining: 372ms
50:	learn: 0.2782434	total: 1.9s	remaining: 335ms
51:	learn: 0.2747128	total: 1.93s	remaining: 298ms
52:	learn: 0.2711399	total: 1.97s	remaining: 260ms
53:	learn: 0.2677238	total: 2s	remaining: 223ms
54:	learn: 0.2643356	total: 2.04s	remaining: 185ms
55:	learn: 0.2611250	total: 2.09s	remaining: 149ms
56:	learn: 0.2582440	total: 2.12s	remaining: 112ms
57:	learn: 0.2552127	total: 2.17s	remaining: 74.7ms
58:	learn: 0.2523571	total: 2.2s	remaining: 37.3ms
59:	learn: 0.2500531	total: 2.24s	remaining: 0us
0:	learn: 0.6787769	total: 37.2ms	remaining: 2.2s
1:	learn: 0.6633095	total: 74.5ms	remaining: 2.16s
2:	learn: 0.6476976	total: 110ms	remaining: 2.09s
3:	learn: 0.6318681	total: 145ms	remaining: 2.04s
4:	learn: 0.6169129	total: 181ms	remaining: 1.99s
5:	learn: 0.6050231	total: 216ms	remaining: 1.95s
6:	learn: 0.5904710	total: 262ms	remaining: 1.98s
7:	learn: 0.5792131	total: 299ms	remaining: 1.94s
8:	learn: 0.5656212	total: 335ms	remaining: 1.9s
9:	learn: 0.5528361	total: 372ms	remaining: 1.86s
10:	learn: 0.5406429	total: 409ms	remaining: 1.82s
11:	learn: 0.5279326	total: 446ms	remaining: 1.78s
12:	learn: 0.5187412	total: 494ms	remaining: 1.78s
13:	learn: 0.5070674	total: 531ms	remaining: 1.75s
14:	learn: 0.4958112	total: 571ms	remaining: 1.71s
15:	learn: 0.4861740	total: 610ms	remaining: 1.68s
16:	learn: 0.4771374	total: 647ms	remaining: 1.64s
17:	learn: 0.4669238	total: 683ms	remaining: 1.59s
18:	learn: 0.4587888	total: 728ms	remaining: 1.57s
19:	learn: 0.4508015	total: 765ms	remaining: 1.53s
20:	learn: 0.4409232	total: 802ms	remaining: 1.49s
21:	learn: 0.4332028	total: 839ms	remaining: 1.45s
22:	learn: 0.4241961	total: 875ms	remaining: 1.41s
23:	learn: 0.4178312	total: 896ms	remaining: 1.34s
24:	learn: 0.4108071	total: 942ms	remaining: 1.32s
25:	learn: 0.4049407	total: 987ms	remaining: 1.29s
26:	learn: 0.3981404	total: 1.02s	remaining: 1.25s
27:	learn: 0.3910480	total: 1.06s	remaining: 1.21s
28:	learn: 0.3848455	total: 1.1s	remaining: 1.17s
29:	learn: 0.3784674	total: 1.13s	remaining: 1.13s
30:	learn: 0.3722911	total: 1.18s	remaining: 1.1s
31:	learn: 0.3650416	total: 1.22s	remaining: 1.06s
32:	learn: 0.3596298	total: 1.25s	remaining: 1.02s
33:	learn: 0.3535587	total: 1.29s	remaining: 985ms
34:	learn: 0.3479559	total: 1.32s	remaining: 945ms
35:	learn: 0.3436314	total: 1.36s	remaining: 906ms
36:	learn: 0.3386817	total: 1.4s	remaining: 873ms
37:	learn: 0.3332009	total: 1.44s	remaining: 833ms
38:	learn: 0.3284626	total: 1.48s	remaining: 794ms
39:	learn: 0.3243020	total: 1.51s	remaining: 755ms
40:	learn: 0.3203881	total: 1.55s	remaining: 717ms
41:	learn: 0.3164657	total: 1.58s	remaining: 680ms
42:	learn: 0.3115393	total: 1.63s	remaining: 644ms
43:	learn: 0.3078476	total: 1.67s	remaining: 606ms
44:	learn: 0.3029053	total: 1.7s	remaining: 568ms
45:	learn: 0.2979739	total: 1.74s	remaining: 529ms
46:	learn: 0.2945617	total: 1.77s	remaining: 491ms
47:	learn: 0.2903203	total: 1.81s	remaining: 453ms
48:	learn: 0.2874027	total: 1.85s	remaining: 416ms



49:	learn: 0.2837694	total: 1.89s	remaining: 378ms
50:	learn: 0.2806973	total: 1.93s	remaining: 340ms
51:	learn: 0.2774930	total: 1.96s	remaining: 302ms
52:	learn: 0.2738758	total: 2.01s	remaining: 265ms
53:	learn: 0.2708897	total: 2.04s	remaining: 227ms
54:	learn: 0.2688938	total: 2.04s	remaining: 186ms
55:	learn: 0.2653052	total: 2.09s	remaining: 149ms
56:	learn: 0.2627639	total: 2.12s	remaining: 112ms
57:	learn: 0.2598077	total: 2.16s	remaining: 74.4ms
58:	learn: 0.2571972	total: 2.19s	remaining: 37.2ms
59:	learn: 0.2549447	total: 2.23s	remaining: 0us
0:	learn: 0.6653901	total: 38.7ms	remaining: 2.28s
1:	learn: 0.6337522	total: 73.3ms	remaining: 2.12s
2:	learn: 0.6059190	total: 108ms	remaining: 2.04s
3:	learn: 0.5785004	total: 142ms	remaining: 1.98s
4:	learn: 0.5523715	total: 176ms	remaining: 1.94s
5:	learn: 0.5326429	total: 212ms	remaining: 1.91s
6:	learn: 0.5151196	total: 255ms	remaining: 1.93s
7:	learn: 0.4976233	total: 292ms	remaining: 1.9s
8:	learn: 0.4794307	total: 328ms	remaining: 1.86s
9:	learn: 0.4605170	total: 364ms	remaining: 1.82s
10:	learn: 0.4439954	total: 399ms	remaining: 1.78s
11:	learn: 0.4271142	total: 435ms	remaining: 1.74s
12:	learn: 0.4146596	total: 481ms	remaining: 1.74s
13:	learn: 0.3991062	total: 516ms	remaining: 1.69s
14:	learn: 0.3847093	total: 554ms	remaining: 1.66s
15:	learn: 0.3733216	total: 589ms	remaining: 1.62s
16:	learn: 0.3624527	total: 607ms	remaining: 1.53s
17:	learn: 0.3520358	total: 650ms	remaining: 1.52s
18:	learn: 0.3420739	total: 689ms	remaining: 1.49s
19:	learn: 0.3324052	total: 728ms	remaining: 1.46s
20:	learn: 0.3215518	total: 762ms	remaining: 1.42s
21:	learn: 0.3134324	total: 797ms	remaining: 1.38s
22:	learn: 0.3048180	total: 832ms	remaining: 1.34s
23:	learn: 0.2991114	total: 866ms	remaining: 1.3s
24:	learn: 0.2939805	total: 910ms	remaining: 1.27s
25:	learn: 0.2887437	total: 945ms	remaining: 1.24s
26:	learn: 0.2827361	total: 979ms	remaining: 1.2s
27:	learn: 0.2770809	total: 1.01s	remaining: 1.16s
28:	learn: 0.2719442	total: 1.05s	remaining: 1.12s
29:	learn: 0.2663294	total: 1.08s	remaining: 1.08s
30:	learn: 0.2614419	total: 1.12s	remaining: 1.05s
31:	learn: 0.2555074	total: 1.16s	remaining: 1.01s
32:	learn: 0.2505669	total: 1.2s	remaining: 980ms
33:	learn: 0.2465351	total: 1.23s	remaining: 943ms
34:	learn: 0.2421552	total: 1.27s	remaining: 907ms
35:	learn: 0.2390454	total: 1.3s	remaining: 870ms
36:	learn: 0.2353690	total: 1.35s	remaining: 840ms
37:	learn: 0.2319378	total: 1.39s	remaining: 803ms
38:	learn: 0.2293074	total: 1.42s	remaining: 767ms
39:	learn: 0.2265773	total: 1.46s	remaining: 732ms
40:	learn: 0.2239044	total: 1.5s	remaining: 695ms
41:	learn: 0.2214810	total: 1.54s	remaining: 659ms
42:	learn: 0.2180881	total: 1.58s	remaining: 625ms
43:	learn: 0.2154749	total: 1.62s	remaining: 588ms
44:	learn: 0.2122523	total: 1.66s	remaining: 554ms
45:	learn: 0.2091643	total: 1.7s	remaining: 517ms
46:	learn: 0.2073426	total: 1.73s	remaining: 480ms
47:	learn: 0.2043621	total: 1.77s	remaining: 443ms
48:	learn: 0.2018468	total: 1.81s	remaining: 407ms
49:	learn: 0.1990600	total: 1.85s	remaining: 370ms
50:	learn: 0.1975180	total: 1.89s	remaining: 333ms
51:	learn: 0.1953713	total: 1.92s	remaining: 296ms
52:	learn: 0.1931717	total: 1.96s	remaining: 259ms
53:	learn: 0.1910559	total: 2s	remaining: 222ms
54:	learn: 0.1893376	total: 2.04s	remaining: 186ms
55:	learn: 0.1875357	total: 2.08s	remaining: 149ms
56:	learn: 0.1856776	total: 2.11s	remaining: 111ms
57:	learn: 0.1841191	total: 2.15s	remaining: 74.1ms
58:	learn: 0.1830692	total: 2.18s	remaining: 37ms
59:	learn: 0.1820441	total: 2.22s	remaining: 0us
0:	learn: 0.6647653	total: 36.7ms	remaining: 2.17s
1:	learn: 0.6308751	total: 73.4ms	remaining: 2.13s
2:	learn: 0.6045444	total: 109ms	remaining: 2.08s
3:	learn: 0.5778500	total: 146ms	remaining: 2.05s
4:	learn: 0.5508174	total: 184ms	remaining: 2.02s
5:	learn: 0.5277074	total: 220ms	remaining: 1.98s
6:	learn: 0.5098412	total: 265ms	remaining: 2s
7:	learn: 0.4901300	total: 312ms	remaining: 2.03s
8:	learn: 0.4681178	total: 356ms	remaining: 2.02s
9:	learn: 0.4470315	total: 393ms	remaining: 1.97s
10:	learn: 0.4286698	total: 430ms	remaining: 1.91s
11:	learn: 0.4115424	total: 470ms	remaining: 1.88s
12:	learn: 0.3992533	total: 514ms	remaining: 1.86s
13:	learn: 0.3823769	total: 551ms	remaining: 1.81s
14:	learn: 0.3677396	total: 588ms	remaining: 1.76s
15:	learn: 0.3571496	total: 623ms	remaining: 1.71s
16:	learn: 0.3461820	total: 642ms	remaining: 1.62s
17:	learn: 0.3360846	total: 684ms	remaining: 1.59s
18:	learn: 0.3265848	total: 720ms	remaining: 1.55s
19:	learn: 0.3167481	total: 755ms	remaining: 1.51s
20:	learn: 0.3058838	total: 790ms	remaining: 1.47s
21:	learn: 0.2992202	total: 825ms	remaining: 1.42s
22:	learn: 0.2896502	total: 860ms	remaining: 1.38s
23:	learn: 0.2836389	total: 914ms	remaining: 1.37s
24:	learn: 0.2773137	total: 951ms	remaining: 1.33s
25:	learn: 0.2722424	total: 988ms	remaining: 1.29s
26:	learn: 0.2664217	total: 1.02s	remaining: 1.25s
27:	learn: 0.2609737	total: 1.06s	remaining: 1.21s
28:	learn: 0.2558042	total: 1.1s	remaining: 1.17s
29:	learn: 0.2502955	total: 1.14s	remaining: 1.14s
30:	learn: 0.2461421	total: 1.18s	remaining: 1.1s

31:	learn: 0.2397970	total: 1.22s	remaining: 1.06s
32:	learn: 0.2357047	total: 1.25s	remaining: 1.02s
33:	learn: 0.2310688	total: 1.28s	remaining: 982ms
34:	learn: 0.2261689	total: 1.32s	remaining: 947ms
35:	learn: 0.2231634	total: 1.37s	remaining: 914ms
36:	learn: 0.2190171	total: 1.41s	remaining: 874ms
37:	learn: 0.2156113	total: 1.44s	remaining: 834ms
38:	learn: 0.2115855	total: 1.48s	remaining: 795ms
39:	learn: 0.2083588	total: 1.51s	remaining: 755ms
40:	learn: 0.2059316	total: 1.54s	remaining: 716ms
41:	learn: 0.2029611	total: 1.59s	remaining: 682ms
42:	learn: 0.1996227	total: 1.63s	remaining: 643ms
43:	learn: 0.1978244	total: 1.66s	remaining: 604ms
44:	learn: 0.1944806	total: 1.7s	remaining: 565ms
45:	learn: 0.1913383	total: 1.73s	remaining: 527ms
46:	learn: 0.1899906	total: 1.77s	remaining: 489ms
47:	learn: 0.1875529	total: 1.81s	remaining: 453ms
48:	learn: 0.1862593	total: 1.85s	remaining: 415ms
49:	learn: 0.1836222	total: 1.88s	remaining: 377ms
50:	learn: 0.1813009	total: 1.92s	remaining: 339ms
51:	learn: 0.1786384	total: 1.96s	remaining: 301ms
52:	learn: 0.1772126	total: 2s	remaining: 264ms
53:	learn: 0.1752958	total: 2.04s	remaining: 227ms
54:	learn: 0.1732996	total: 2.08s	remaining: 189ms
55:	learn: 0.1719410	total: 2.11s	remaining: 151ms
56:	learn: 0.1702443	total: 2.15s	remaining: 113ms
57:	learn: 0.1684799	total: 2.18s	remaining: 75.2ms
58:	learn: 0.1668544	total: 2.22s	remaining: 37.6ms
59:	learn: 0.1656654	total: 2.27s	remaining: 0us
0:	learn: 0.6646729	total: 36.4ms	remaining: 2.15s
1:	learn: 0.6348887	total: 72.1ms	remaining: 2.09s
2:	learn: 0.6057415	total: 118ms	remaining: 2.24s
3:	learn: 0.5771231	total: 155ms	remaining: 2.17s
4:	learn: 0.5491032	total: 195ms	remaining: 2.14s
5:	learn: 0.5295906	total: 231ms	remaining: 2.08s
6:	learn: 0.5117232	total: 268ms	remaining: 2.03s
7:	learn: 0.4915744	total: 305ms	remaining: 1.98s
8:	learn: 0.4701710	total: 347ms	remaining: 1.97s
9:	learn: 0.4510586	total: 385ms	remaining: 1.93s
10:	learn: 0.4342654	total: 423ms	remaining: 1.89s
11:	learn: 0.4169922	total: 459ms	remaining: 1.83s
12:	learn: 0.4047689	total: 498ms	remaining: 1.8s
13:	learn: 0.3892958	total: 534ms	remaining: 1.75s
14:	learn: 0.3751923	total: 580ms	remaining: 1.74s
15:	learn: 0.3634858	total: 618ms	remaining: 1.7s
16:	learn: 0.3529017	total: 655ms	remaining: 1.66s
17:	learn: 0.3410812	total: 691ms	remaining: 1.61s
18:	learn: 0.3320536	total: 728ms	remaining: 1.57s
19:	learn: 0.3239706	total: 765ms	remaining: 1.53s
20:	learn: 0.3134735	total: 816ms	remaining: 1.51s
21:	learn: 0.3061444	total: 854ms	remaining: 1.48s
22:	learn: 0.2969195	total: 892ms	remaining: 1.43s
23:	learn: 0.2910119	total: 913ms	remaining: 1.37s
24:	learn: 0.2839389	total: 959ms	remaining: 1.34s
25:	learn: 0.2786662	total: 996ms	remaining: 1.3s
26:	learn: 0.2728345	total: 1.04s	remaining: 1.27s
27:	learn: 0.2672551	total: 1.08s	remaining: 1.23s
28:	learn: 0.2624970	total: 1.12s	remaining: 1.19s
29:	learn: 0.2553838	total: 1.15s	remaining: 1.15s
30:	learn: 0.2512006	total: 1.19s	remaining: 1.11s
31:	learn: 0.2451399	total: 1.23s	remaining: 1.07s
32:	learn: 0.2404142	total: 1.27s	remaining: 1.04s
33:	learn: 0.2357983	total: 1.31s	remaining: 1s
34:	learn: 0.2319253	total: 1.34s	remaining: 961ms
35:	learn: 0.2290277	total: 1.38s	remaining: 921ms
36:	learn: 0.2249938	total: 1.42s	remaining: 881ms
37:	learn: 0.2209740	total: 1.45s	remaining: 842ms
38:	learn: 0.2179076	total: 1.5s	remaining: 807ms
39:	learn: 0.2145454	total: 1.54s	remaining: 768ms
40:	learn: 0.2121858	total: 1.57s	remaining: 729ms
41:	learn: 0.2082461	total: 1.61s	remaining: 691ms
42:	learn: 0.2048335	total: 1.65s	remaining: 652ms
43:	learn: 0.2027585	total: 1.69s	remaining: 613ms
44:	learn: 0.1992589	total: 1.73s	remaining: 577ms
45:	learn: 0.1964910	total: 1.77s	remaining: 538ms
46:	learn: 0.1951188	total: 1.8s	remaining: 499ms
47:	learn: 0.1919594	total: 1.84s	remaining: 460ms
48:	learn: 0.1894465	total: 1.87s	remaining: 421ms
49:	learn: 0.1869043	total: 1.91s	remaining: 382ms
50:	learn: 0.1851982	total: 1.96s	remaining: 346ms
51:	learn: 0.1830122	total: 2s	remaining: 308ms
52:	learn: 0.1809379	total: 2.04s	remaining: 269ms
53:	learn: 0.1788723	total: 2.07s	remaining: 230ms
54:	learn: 0.1773426	total: 2.11s	remaining: 192ms
55:	learn: 0.1752839	total: 2.15s	remaining: 154ms
56:	learn: 0.1737877	total: 2.19s	remaining: 115ms
57:	learn: 0.1726799	total: 2.23s	remaining: 76.9ms
58:	learn: 0.1714130	total: 2.27s	remaining: 38.4ms
59:	learn: 0.1699208	total: 2.3s	remaining: 0us
0:	learn: 0.6518949	total: 36ms	remaining: 2.12s
1:	learn: 0.6062164	total: 71.6ms	remaining: 2.08s
2:	learn: 0.5673831	total: 106ms	remaining: 2.01s
3:	learn: 0.5303763	total: 141ms	remaining: 1.97s
4:	learn: 0.4994415	total: 175ms	remaining: 1.92s
5:	learn: 0.4757570	total: 209ms	remaining: 1.88s
6:	learn: 0.4541921	total: 250ms	remaining: 1.89s
7:	learn: 0.4331930	total: 285ms	remaining: 1.85s
8:	learn: 0.4115985	total: 320ms	remaining: 1.81s
9:	learn: 0.3898494	total: 354ms	remaining: 1.77s
10:	learn: 0.3717176	total: 389ms	remaining: 1.73s
11:	learn: 0.3536362	total: 423ms	remaining: 1.69s
12:	learn: 0.3414317	total: 466ms	remaining: 1.68s

13:	learn: 0.3300010	total: 503ms	remaining: 1.65s
14:	learn: 0.3153863	total: 539ms	remaining: 1.62s
15:	learn: 0.3044169	total: 587ms	remaining: 1.61s
16:	learn: 0.2942610	total: 618ms	remaining: 1.56s
17:	learn: 0.2828634	total: 655ms	remaining: 1.53s
18:	learn: 0.2752138	total: 700ms	remaining: 1.51s
19:	learn: 0.2665403	total: 736ms	remaining: 1.47s
20:	learn: 0.2569809	total: 771ms	remaining: 1.43s
21:	learn: 0.2512699	total: 806ms	remaining: 1.39s
22:	learn: 0.2441609	total: 844ms	remaining: 1.36s
23:	learn: 0.2398388	total: 879ms	remaining: 1.32s
24:	learn: 0.2354055	total: 882ms	remaining: 1.24s
25:	learn: 0.2311587	total: 924ms	remaining: 1.21s
26:	learn: 0.2256353	total: 959ms	remaining: 1.17s
27:	learn: 0.2205951	total: 994ms	remaining: 1.14s
28:	learn: 0.2167488	total: 1.03s	remaining: 1.1s
29:	learn: 0.2133685	total: 1.06s	remaining: 1.06s
30:	learn: 0.2093162	total: 1.1s	remaining: 1.03s
31:	learn: 0.2072354	total: 1.14s	remaining: 999ms
32:	learn: 0.2032979	total: 1.18s	remaining: 963ms
33:	learn: 0.1995165	total: 1.21s	remaining: 927ms
34:	learn: 0.1960965	total: 1.25s	remaining: 890ms
35:	learn: 0.1942163	total: 1.25s	remaining: 836ms
36:	learn: 0.1913105	total: 1.29s	remaining: 801ms
37:	learn: 0.1894032	total: 1.32s	remaining: 767ms
38:	learn: 0.1868027	total: 1.37s	remaining: 736ms
39:	learn: 0.1835597	total: 1.4s	remaining: 701ms
40:	learn: 0.1804997	total: 1.44s	remaining: 666ms
41:	learn: 0.1784591	total: 1.48s	remaining: 632ms
42:	learn: 0.1764678	total: 1.51s	remaining: 598ms
43:	learn: 0.1747860	total: 1.55s	remaining: 563ms
44:	learn: 0.1739712	total: 1.6s	remaining: 534ms
45:	learn: 0.1716544	total: 1.64s	remaining: 498ms
46:	learn: 0.1698876	total: 1.67s	remaining: 463ms
47:	learn: 0.1686328	total: 1.71s	remaining: 427ms
48:	learn: 0.1671131	total: 1.75s	remaining: 392ms
49:	learn: 0.1658188	total: 1.78s	remaining: 356ms
50:	learn: 0.1642036	total: 1.83s	remaining: 323ms
51:	learn: 0.1631039	total: 1.86s	remaining: 287ms
52:	learn: 0.1620387	total: 1.9s	remaining: 251ms
53:	learn: 0.1607973	total: 1.93s	remaining: 215ms
54:	learn: 0.1598126	total: 1.97s	remaining: 179ms
55:	learn: 0.1588643	total: 2s	remaining: 143ms
56:	learn: 0.1581679	total: 2.05s	remaining: 108ms
57:	learn: 0.1565681	total: 2.08s	remaining: 71.8ms
58:	learn: 0.1549369	total: 2.12s	remaining: 35.9ms
59:	learn: 0.1537222	total: 2.15s	remaining: 0us
0:	learn: 0.6509719	total: 36.7ms	remaining: 2.17s
1:	learn: 0.6020890	total: 73.7ms	remaining: 2.14s
2:	learn: 0.5654535	total: 109ms	remaining: 2.07s
3:	learn: 0.5294275	total: 145ms	remaining: 2.02s
4:	learn: 0.4956424	total: 180ms	remaining: 1.98s
5:	learn: 0.4661586	total: 217ms	remaining: 1.95s
6:	learn: 0.4445128	total: 259ms	remaining: 1.96s
7:	learn: 0.4211374	total: 296ms	remaining: 1.93s
8:	learn: 0.3955347	total: 334ms	remaining: 1.9s
9:	learn: 0.3720148	total: 369ms	remaining: 1.84s
10:	learn: 0.3523635	total: 403ms	remaining: 1.8s
11:	learn: 0.3347254	total: 437ms	remaining: 1.75s
12:	learn: 0.3230482	total: 480ms	remaining: 1.74s
13:	learn: 0.3065965	total: 516ms	remaining: 1.69s
14:	learn: 0.2970749	total: 551ms	remaining: 1.65s
15:	learn: 0.2871629	total: 587ms	remaining: 1.61s
16:	learn: 0.2770954	total: 606ms	remaining: 1.53s
17:	learn: 0.2679117	total: 643ms	remaining: 1.5s
18:	learn: 0.2601215	total: 679ms	remaining: 1.46s
19:	learn: 0.2514976	total: 721ms	remaining: 1.44s
20:	learn: 0.2431400	total: 756ms	remaining: 1.4s
21:	learn: 0.2372216	total: 791ms	remaining: 1.37s
22:	learn: 0.2289316	total: 826ms	remaining: 1.33s
23:	learn: 0.2245784	total: 861ms	remaining: 1.29s
24:	learn: 0.2197266	total: 895ms	remaining: 1.25s
25:	learn: 0.2159343	total: 939ms	remaining: 1.23s
26:	learn: 0.2115738	total: 975ms	remaining: 1.19s
27:	learn: 0.2078047	total: 1.01s	remaining: 1.16s
28:	learn: 0.2042431	total: 1.05s	remaining: 1.12s
29:	learn: 0.2002614	total: 1.08s	remaining: 1.08s
30:	learn: 0.1960065	total: 1.12s	remaining: 1.04s
31:	learn: 0.1920293	total: 1.16s	remaining: 1.01s
32:	learn: 0.1889482	total: 1.2s	remaining: 980ms
33:	learn: 0.1854658	total: 1.23s	remaining: 944ms
34:	learn: 0.1812703	total: 1.27s	remaining: 906ms
35:	learn: 0.1791590	total: 1.31s	remaining: 871ms
36:	learn: 0.1759942	total: 1.35s	remaining: 837ms
37:	learn: 0.1722047	total: 1.39s	remaining: 806ms
38:	learn: 0.1698119	total: 1.43s	remaining: 769ms
39:	learn: 0.1671544	total: 1.46s	remaining: 732ms
40:	learn: 0.1654468	total: 1.5s	remaining: 695ms
41:	learn: 0.1632825	total: 1.53s	remaining: 658ms
42:	learn: 0.1619266	total: 1.57s	remaining: 621ms
43:	learn: 0.1601512	total: 1.61s	remaining: 587ms
44:	learn: 0.1574705	total: 1.65s	remaining: 550ms
45:	learn: 0.1550155	total: 1.69s	remaining: 514ms
46:	learn: 0.1540709	total: 1.73s	remaining: 478ms
47:	learn: 0.1522576	total: 1.76s	remaining: 441ms
48:	learn: 0.1509553	total: 1.8s	remaining: 404ms
49:	learn: 0.1492534	total: 1.85s	remaining: 369ms
50:	learn: 0.1472910	total: 1.88s	remaining: 332ms
51:	learn: 0.1456915	total: 1.92s	remaining: 295ms
52:	learn: 0.1441786	total: 1.95s	remaining: 258ms
53:	learn: 0.1430157	total: 1.99s	remaining: 221ms
54:	learn: 0.1419859	total: 2.02s	remaining: 184ms

55:	learn: 0.1410462	total: 2.06s	remaining: 147ms
56:	learn: 0.1401587	total: 2.1s	remaining: 111ms
57:	learn: 0.1387045	total: 2.13s	remaining: 73.6ms
58:	learn: 0.1379444	total: 2.17s	remaining: 36.8ms
59:	learn: 0.1372372	total: 2.21s	remaining: 0us
0:	learn: 0.6508348	total: 37.1ms	remaining: 2.19s
1:	learn: 0.6078480	total: 73.8ms	remaining: 2.14s
2:	learn: 0.5670973	total: 111ms	remaining: 2.1s
3:	learn: 0.5283949	total: 148ms	remaining: 2.07s
4:	learn: 0.4959166	total: 183ms	remaining: 2.02s
5:	learn: 0.4712487	total: 219ms	remaining: 1.97s
6:	learn: 0.4493432	total: 264ms	remaining: 2s
7:	learn: 0.4251239	total: 299ms	remaining: 1.95s
8:	learn: 0.4000466	total: 335ms	remaining: 1.9s
9:	learn: 0.3790972	total: 370ms	remaining: 1.85s
10:	learn: 0.3608026	total: 406ms	remaining: 1.81s
11:	learn: 0.3426061	total: 441ms	remaining: 1.76s
12:	learn: 0.3307967	total: 486ms	remaining: 1.76s
13:	learn: 0.3152901	total: 523ms	remaining: 1.72s
14:	learn: 0.3016123	total: 560ms	remaining: 1.68s
15:	learn: 0.2907064	total: 597ms	remaining: 1.64s
16:	learn: 0.2790097	total: 634ms	remaining: 1.6s
17:	learn: 0.2687192	total: 671ms	remaining: 1.56s
18:	learn: 0.2604770	total: 716ms	remaining: 1.54s
19:	learn: 0.2538520	total: 753ms	remaining: 1.51s
20:	learn: 0.2452745	total: 791ms	remaining: 1.47s
21:	learn: 0.2397876	total: 827ms	remaining: 1.43s
22:	learn: 0.2323341	total: 866ms	remaining: 1.39s
23:	learn: 0.2281031	total: 886ms	remaining: 1.33s
24:	learn: 0.2239697	total: 930ms	remaining: 1.3s
25:	learn: 0.2177234	total: 969ms	remaining: 1.27s
26:	learn: 0.2136502	total: 1.01s	remaining: 1.24s
27:	learn: 0.2095310	total: 1.05s	remaining: 1.2s
28:	learn: 0.2062731	total: 1.09s	remaining: 1.16s
29:	learn: 0.2011577	total: 1.13s	remaining: 1.13s
30:	learn: 0.1975007	total: 1.17s	remaining: 1.1s
31:	learn: 0.1929600	total: 1.21s	remaining: 1.06s
32:	learn: 0.1897422	total: 1.25s	remaining: 1.02s
33:	learn: 0.1859675	total: 1.28s	remaining: 980ms
34:	learn: 0.1827021	total: 1.32s	remaining: 941ms
35:	learn: 0.1799893	total: 1.35s	remaining: 902ms
36:	learn: 0.1769820	total: 1.4s	remaining: 869ms
37:	learn: 0.1735673	total: 1.44s	remaining: 831ms
38:	learn: 0.1708026	total: 1.47s	remaining: 792ms
39:	learn: 0.1689116	total: 1.51s	remaining: 754ms
40:	learn: 0.1673618	total: 1.54s	remaining: 715ms
41:	learn: 0.1651040	total: 1.58s	remaining: 677ms
42:	learn: 0.1638129	total: 1.62s	remaining: 641ms
43:	learn: 0.1624469	total: 1.66s	remaining: 605ms
44:	learn: 0.1601504	total: 1.7s	remaining: 567ms
45:	learn: 0.1581727	total: 1.74s	remaining: 529ms
46:	learn: 0.1560981	total: 1.77s	remaining: 490ms
47:	learn: 0.1540697	total: 1.81s	remaining: 453ms
48:	learn: 0.1529908	total: 1.85s	remaining: 416ms
49:	learn: 0.1512204	total: 1.89s	remaining: 378ms
50:	learn: 0.1493843	total: 1.93s	remaining: 340ms
51:	learn: 0.1479547	total: 1.96s	remaining: 302ms
52:	learn: 0.1462726	total: 2.01s	remaining: 265ms
53:	learn: 0.1448924	total: 2.04s	remaining: 227ms
54:	learn: 0.1439185	total: 2.09s	remaining: 190ms
55:	learn: 0.1427119	total: 2.12s	remaining: 152ms
56:	learn: 0.1418941	total: 2.16s	remaining: 114ms
57:	learn: 0.1409165	total: 2.2s	remaining: 75.7ms
58:	learn: 0.1398811	total: 2.23s	remaining: 37.8ms
59:	learn: 0.1388896	total: 2.27s	remaining: 0us
0:	learn: 0.6386549	total: 34.9ms	remaining: 2.06s
1:	learn: 0.5794667	total: 74.2ms	remaining: 2.15s
2:	learn: 0.5350597	total: 109ms	remaining: 2.07s
3:	learn: 0.4902950	total: 146ms	remaining: 2.04s
4:	learn: 0.4542138	total: 181ms	remaining: 2s
5:	learn: 0.4276605	total: 217ms	remaining: 1.95s
6:	learn: 0.4042525	total: 263ms	remaining: 1.99s
7:	learn: 0.3819469	total: 300ms	remaining: 1.95s
8:	learn: 0.3594459	total: 337ms	remaining: 1.91s
9:	learn: 0.3372844	total: 373ms	remaining: 1.87s
10:	learn: 0.3195579	total: 409ms	remaining: 1.82s
11:	learn: 0.3025844	total: 444ms	remaining: 1.78s
12:	learn: 0.2914362	total: 489ms	remaining: 1.77s
13:	learn: 0.2812717	total: 525ms	remaining: 1.73s
14:	learn: 0.2681212	total: 561ms	remaining: 1.68s
15:	learn: 0.2576900	total: 596ms	remaining: 1.64s
16:	learn: 0.2477187	total: 642ms	remaining: 1.62s
17:	learn: 0.2396752	total: 677ms	remaining: 1.58s
18:	learn: 0.2331245	total: 723ms	remaining: 1.56s
19:	learn: 0.2258934	total: 759ms	remaining: 1.52s
20:	learn: 0.2202542	total: 794ms	remaining: 1.47s
21:	learn: 0.2158870	total: 828ms	remaining: 1.43s
22:	learn: 0.2099379	total: 863ms	remaining: 1.39s
23:	learn: 0.2056097	total: 898ms	remaining: 1.35s
24:	learn: 0.2019088	total: 941ms	remaining: 1.32s
25:	learn: 0.1984477	total: 983ms	remaining: 1.28s
26:	learn: 0.1953531	total: 1.02s	remaining: 1.25s
27:	learn: 0.1919639	total: 1.06s	remaining: 1.21s
28:	learn: 0.1886041	total: 1.09s	remaining: 1.17s
29:	learn: 0.1851554	total: 1.13s	remaining: 1.13s
30:	learn: 0.1823516	total: 1.17s	remaining: 1.1s
31:	learn: 0.1794975	total: 1.21s	remaining: 1.06s
32:	learn: 0.1772368	total: 1.26s	remaining: 1.03s
33:	learn: 0.1736062	total: 1.31s	remaining: 1s
34:	learn: 0.1703676	total: 1.35s	remaining: 962ms
35:	learn: 0.1690795	total: 1.39s	remaining: 928ms
36:	learn: 0.1662960	total: 1.43s	remaining: 888ms

37:	learn: 0.1643045	total: 1.47s	remaining: 849ms
38:	learn: 0.1625412	total: 1.5s	remaining: 809ms
39:	learn: 0.1609807	total: 1.54s	remaining: 771ms
40:	learn: 0.1600736	total: 1.56s	remaining: 724ms
41:	learn: 0.1586133	total: 1.6s	remaining: 688ms
42:	learn: 0.1576141	total: 1.65s	remaining: 652ms
43:	learn: 0.1556886	total: 1.68s	remaining: 612ms
44:	learn: 0.1543002	total: 1.72s	remaining: 573ms
45:	learn: 0.1531071	total: 1.75s	remaining: 533ms
46:	learn: 0.1513682	total: 1.79s	remaining: 494ms
47:	learn: 0.1499784	total: 1.83s	remaining: 458ms
48:	learn: 0.1486980	total: 1.87s	remaining: 419ms
49:	learn: 0.1478048	total: 1.9s	remaining: 380ms
50:	learn: 0.1467731	total: 1.94s	remaining: 342ms
51:	learn: 0.1458016	total: 1.97s	remaining: 303ms
52:	learn: 0.1448808	total: 2.01s	remaining: 265ms
53:	learn: 0.1439293	total: 2.05s	remaining: 228ms
54:	learn: 0.1432615	total: 2.09s	remaining: 190ms
55:	learn: 0.1427114	total: 2.13s	remaining: 152ms
56:	learn: 0.1413225	total: 2.16s	remaining: 114ms
57:	learn: 0.1402600	total: 2.2s	remaining: 75.7ms
58:	learn: 0.1397467	total: 2.23s	remaining: 37.8ms
59:	learn: 0.1388832	total: 2.27s	remaining: 0us
0:	learn: 0.6374431	total: 35.8ms	remaining: 2.11s
1:	learn: 0.5752510	total: 73.8ms	remaining: 2.14s
2:	learn: 0.5299881	total: 119ms	remaining: 2.25s
3:	learn: 0.4868399	total: 154ms	remaining: 2.15s
4:	learn: 0.4476466	total: 189ms	remaining: 2.08s
5:	learn: 0.4194563	total: 228ms	remaining: 2.05s
6:	learn: 0.3957873	total: 270ms	remaining: 2.05s
7:	learn: 0.3706250	total: 306ms	remaining: 1.99s
8:	learn: 0.3433542	total: 348ms	remaining: 1.97s
9:	learn: 0.3192400	total: 384ms	remaining: 1.92s
10:	learn: 0.3003060	total: 419ms	remaining: 1.86s
11:	learn: 0.2837023	total: 454ms	remaining: 1.81s
12:	learn: 0.2738870	total: 489ms	remaining: 1.77s
13:	learn: 0.2590565	total: 524ms	remaining: 1.72s
14:	learn: 0.2509095	total: 568ms	remaining: 1.7s
15:	learn: 0.2417859	total: 604ms	remaining: 1.66s
16:	learn: 0.2320056	total: 640ms	remaining: 1.62s
17:	learn: 0.2246093	total: 677ms	remaining: 1.58s
18:	learn: 0.2181759	total: 714ms	remaining: 1.54s
19:	learn: 0.2108050	total: 752ms	remaining: 1.5s
20:	learn: 0.2034753	total: 797ms	remaining: 1.48s
21:	learn: 0.1992330	total: 833ms	remaining: 1.44s
22:	learn: 0.1932955	total: 870ms	remaining: 1.4s
23:	learn: 0.1896366	total: 907ms	remaining: 1.36s
24:	learn: 0.1862890	total: 944ms	remaining: 1.32s
25:	learn: 0.1832150	total: 981ms	remaining: 1.28s
26:	learn: 0.1790708	total: 1.02s	remaining: 1.25s
27:	learn: 0.1757052	total: 1.06s	remaining: 1.21s
28:	learn: 0.1729793	total: 1.1s	remaining: 1.17s
29:	learn: 0.1698562	total: 1.14s	remaining: 1.14s
30:	learn: 0.1674814	total: 1.17s	remaining: 1.1s
31:	learn: 0.1639651	total: 1.21s	remaining: 1.06s
32:	learn: 0.1622546	total: 1.26s	remaining: 1.03s
33:	learn: 0.1598741	total: 1.29s	remaining: 991ms
34:	learn: 0.1568186	total: 1.33s	remaining: 952ms
35:	learn: 0.1554774	total: 1.34s	remaining: 893ms
36:	learn: 0.1524067	total: 1.38s	remaining: 856ms
37:	learn: 0.1497032	total: 1.42s	remaining: 822ms
38:	learn: 0.1482602	total: 1.46s	remaining: 785ms
39:	learn: 0.1463871	total: 1.5s	remaining: 751ms
40:	learn: 0.1441313	total: 1.54s	remaining: 714ms
41:	learn: 0.1420593	total: 1.58s	remaining: 676ms
42:	learn: 0.1406964	total: 1.61s	remaining: 638ms
43:	learn: 0.1387918	total: 1.65s	remaining: 600ms
44:	learn: 0.1373152	total: 1.69s	remaining: 562ms
45:	learn: 0.1362762	total: 1.73s	remaining: 528ms
46:	learn: 0.1348280	total: 1.77s	remaining: 490ms
47:	learn: 0.1332868	total: 1.8s	remaining: 451ms
48:	learn: 0.1315807	total: 1.84s	remaining: 413ms
49:	learn: 0.1310403	total: 1.87s	remaining: 375ms
50:	learn: 0.1302947	total: 1.91s	remaining: 337ms
51:	learn: 0.1296517	total: 1.95s	remaining: 301ms
52:	learn: 0.1283217	total: 1.99s	remaining: 263ms
53:	learn: 0.1269866	total: 2.03s	remaining: 226ms
54:	learn: 0.1264353	total: 2.06s	remaining: 188ms
55:	learn: 0.1258286	total: 2.1s	remaining: 150ms
56:	learn: 0.1253112	total: 2.13s	remaining: 112ms
57:	learn: 0.1246537	total: 2.18s	remaining: 75.2ms
58:	learn: 0.1243764	total: 2.22s	remaining: 37.6ms
59:	learn: 0.1226823	total: 2.25s	remaining: 0us
0:	learn: 0.6372622	total: 44.6ms	remaining: 2.63s
1:	learn: 0.5821484	total: 81.6ms	remaining: 2.37s
2:	learn: 0.5311700	total: 119ms	remaining: 2.26s
3:	learn: 0.4847543	total: 158ms	remaining: 2.22s
4:	learn: 0.4424854	total: 195ms	remaining: 2.15s
5:	learn: 0.4155755	total: 231ms	remaining: 2.08s
6:	learn: 0.3923856	total: 276ms	remaining: 2.09s
7:	learn: 0.3672231	total: 311ms	remaining: 2.02s
8:	learn: 0.3396370	total: 347ms	remaining: 1.97s
9:	learn: 0.3190827	total: 386ms	remaining: 1.93s
10:	learn: 0.3014143	total: 422ms	remaining: 1.88s
11:	learn: 0.2851881	total: 457ms	remaining: 1.83s
12:	learn: 0.2731118	total: 498ms	remaining: 1.8s
13:	learn: 0.2589528	total: 533ms	remaining: 1.75s
14:	learn: 0.2477758	total: 569ms	remaining: 1.71s
15:	learn: 0.2378747	total: 604ms	remaining: 1.66s
16:	learn: 0.2285734	total: 640ms	remaining: 1.62s
17:	learn: 0.2202184	total: 677ms	remaining: 1.58s
18:	learn: 0.2134150	total: 722ms	remaining: 1.56s

19:	learn: 0.2059357	total: 759ms	remaining: 1.52s
20:	learn: 0.1996082	total: 795ms	remaining: 1.48s
21:	learn: 0.1955997	total: 832ms	remaining: 1.44s
22:	learn: 0.1921818	total: 870ms	remaining: 1.4s
23:	learn: 0.1884246	total: 916ms	remaining: 1.37s
24:	learn: 0.1851933	total: 961ms	remaining: 1.34s
25:	learn: 0.1828785	total: 999ms	remaining: 1.3s
26:	learn: 0.1801108	total: 1.04s	remaining: 1.27s
27:	learn: 0.1770605	total: 1.08s	remaining: 1.23s
28:	learn: 0.1740757	total: 1.11s	remaining: 1.19s
29:	learn: 0.1711643	total: 1.15s	remaining: 1.15s
30:	learn: 0.1677197	total: 1.19s	remaining: 1.12s
31:	learn: 0.1647914	total: 1.23s	remaining: 1.08s
32:	learn: 0.1619562	total: 1.27s	remaining: 1.04s
33:	learn: 0.1599197	total: 1.3s	remaining: 997ms
34:	learn: 0.1581559	total: 1.34s	remaining: 958ms
35:	learn: 0.1565452	total: 1.38s	remaining: 918ms
36:	learn: 0.1539540	total: 1.43s	remaining: 887ms
37:	learn: 0.1519285	total: 1.46s	remaining: 846ms
38:	learn: 0.1501880	total: 1.5s	remaining: 806ms
39:	learn: 0.1477981	total: 1.53s	remaining: 767ms
40:	learn: 0.1458797	total: 1.57s	remaining: 727ms
41:	learn: 0.1442349	total: 1.61s	remaining: 689ms
42:	learn: 0.1420435	total: 1.66s	remaining: 657ms
43:	learn: 0.1403873	total: 1.7s	remaining: 618ms
44:	learn: 0.1395320	total: 1.74s	remaining: 579ms
45:	learn: 0.1390222	total: 1.77s	remaining: 540ms
46:	learn: 0.1372055	total: 1.81s	remaining: 501ms
47:	learn: 0.1355598	total: 1.85s	remaining: 462ms
48:	learn: 0.1339611	total: 1.9s	remaining: 426ms
49:	learn: 0.1322620	total: 1.94s	remaining: 387ms
50:	learn: 0.1306658	total: 1.97s	remaining: 348ms
51:	learn: 0.1293790	total: 2.01s	remaining: 309ms
52:	learn: 0.1285210	total: 2.04s	remaining: 270ms
53:	learn: 0.1275680	total: 2.08s	remaining: 231ms
54:	learn: 0.1266398	total: 2.12s	remaining: 193ms
55:	learn: 0.1259895	total: 2.16s	remaining: 155ms
56:	learn: 0.1249748	total: 2.2s	remaining: 116ms
57:	learn: 0.1246202	total: 2.24s	remaining: 77.2ms
58:	learn: 0.1241579	total: 2.27s	remaining: 38.5ms
59:	learn: 0.1234748	total: 2.31s	remaining: 0us
0:	learn: 0.6791407	total: 36.2ms	remaining: 2.5s
1:	learn: 0.6627167	total: 71.7ms	remaining: 2.44s
2:	learn: 0.6477791	total: 106ms	remaining: 2.37s
3:	learn: 0.6325852	total: 141ms	remaining: 2.33s
4:	learn: 0.6181110	total: 176ms	remaining: 2.28s
5:	learn: 0.6063451	total: 210ms	remaining: 2.24s
6:	learn: 0.5923132	total: 255ms	remaining: 2.3s
7:	learn: 0.5801042	total: 295ms	remaining: 2.29s
8:	learn: 0.5684541	total: 330ms	remaining: 2.24s
9:	learn: 0.5560049	total: 366ms	remaining: 2.19s
10:	learn: 0.5442222	total: 400ms	remaining: 2.15s
11:	learn: 0.5324515	total: 435ms	remaining: 2.1s
12:	learn: 0.5232732	total: 485ms	remaining: 2.13s
13:	learn: 0.5117062	total: 519ms	remaining: 2.08s
14:	learn: 0.5006558	total: 553ms	remaining: 2.03s
15:	learn: 0.4921673	total: 588ms	remaining: 1.98s
16:	learn: 0.4836199	total: 607ms	remaining: 1.89s
17:	learn: 0.4748627	total: 646ms	remaining: 1.87s
18:	learn: 0.4667168	total: 681ms	remaining: 1.83s
19:	learn: 0.4578206	total: 724ms	remaining: 1.81s
20:	learn: 0.4486854	total: 758ms	remaining: 1.77s
21:	learn: 0.4410347	total: 793ms	remaining: 1.73s
22:	learn: 0.4325364	total: 828ms	remaining: 1.69s
23:	learn: 0.4265464	total: 862ms	remaining: 1.65s
24:	learn: 0.4200699	total: 896ms	remaining: 1.61s
25:	learn: 0.4142384	total: 937ms	remaining: 1.58s
26:	learn: 0.4072413	total: 972ms	remaining: 1.55s
27:	learn: 0.4009872	total: 1s	remaining: 1.51s
28:	learn: 0.3952050	total: 1.04s	remaining: 1.47s
29:	learn: 0.3889355	total: 1.07s	remaining: 1.43s
30:	learn: 0.3837602	total: 1.11s	remaining: 1.39s
31:	learn: 0.3779735	total: 1.15s	remaining: 1.36s
32:	learn: 0.3716509	total: 1.19s	remaining: 1.33s
33:	learn: 0.3658556	total: 1.22s	remaining: 1.29s
34:	learn: 0.3601986	total: 1.26s	remaining: 1.26s
35:	learn: 0.3556856	total: 1.3s	remaining: 1.23s
36:	learn: 0.3506903	total: 1.34s	remaining: 1.19s
37:	learn: 0.3454717	total: 1.39s	remaining: 1.17s
38:	learn: 0.3400025	total: 1.43s	remaining: 1.13s
39:	learn: 0.3359606	total: 1.46s	remaining: 1.1s
40:	learn: 0.3319888	total: 1.5s	remaining: 1.06s
41:	learn: 0.3281915	total: 1.54s	remaining: 1.02s
42:	learn: 0.3234134	total: 1.57s	remaining: 988ms
43:	learn: 0.3196161	total: 1.62s	remaining: 957ms
44:	learn: 0.3148530	total: 1.66s	remaining: 920ms
45:	learn: 0.3105316	total: 1.69s	remaining: 882ms
46:	learn: 0.3072915	total: 1.73s	remaining: 845ms
47:	learn: 0.3028888	total: 1.76s	remaining: 808ms
48:	learn: 0.2997492	total: 1.8s	remaining: 771ms
49:	learn: 0.2963930	total: 1.84s	remaining: 738ms
50:	learn: 0.2936002	total: 1.88s	remaining: 700ms
51:	learn: 0.2905221	total: 1.92s	remaining: 663ms
52:	learn: 0.2868780	total: 1.96s	remaining: 627ms
53:	learn: 0.2836925	total: 1.99s	remaining: 590ms
54:	learn: 0.2817627	total: 1.99s	remaining: 544ms
55:	learn: 0.2791311	total: 2.03s	remaining: 507ms
56:	learn: 0.2758002	total: 2.07s	remaining: 473ms
57:	learn: 0.2733280	total: 2.11s	remaining: 436ms
58:	learn: 0.2711165	total: 2.14s	remaining: 400ms
59:	learn: 0.2685101	total: 2.18s	remaining: 363ms
60:	learn: 0.2664084	total: 2.21s	remaining: 327ms

61:	learn: 0.2635878	total: 2.25s	remaining: 290ms
62:	learn: 0.2611837	total: 2.29s	remaining: 255ms
63:	learn: 0.2587031	total: 2.33s	remaining: 218ms
64:	learn: 0.2560294	total: 2.36s	remaining: 182ms
65:	learn: 0.2534400	total: 2.4s	remaining: 145ms
66:	learn: 0.2509306	total: 2.43s	remaining: 109ms
67:	learn: 0.2490825	total: 2.46s	remaining: 72.5ms
68:	learn: 0.2474467	total: 2.52s	remaining: 36.5ms
69:	learn: 0.2453682	total: 2.56s	remaining: 0us
0:	learn: 0.6788236	total: 34.8ms	remaining: 2.4s
1:	learn: 0.6615390	total: 80.7ms	remaining: 2.74s
2:	learn: 0.6457778	total: 117ms	remaining: 2.6s
3:	learn: 0.6310168	total: 153ms	remaining: 2.52s
4:	learn: 0.6156249	total: 190ms	remaining: 2.46s
5:	learn: 0.5990069	total: 225ms	remaining: 2.4s
6:	learn: 0.5880764	total: 261ms	remaining: 2.35s
7:	learn: 0.5752112	total: 306ms	remaining: 2.37s
8:	learn: 0.5622940	total: 343ms	remaining: 2.32s
9:	learn: 0.5482712	total: 382ms	remaining: 2.29s
10:	learn: 0.5354771	total: 417ms	remaining: 2.24s
11:	learn: 0.5231399	total: 467ms	remaining: 2.26s
12:	learn: 0.5138478	total: 504ms	remaining: 2.21s
13:	learn: 0.5010520	total: 552ms	remaining: 2.21s
14:	learn: 0.4894648	total: 588ms	remaining: 2.15s
15:	learn: 0.4806031	total: 624ms	remaining: 2.1s
16:	learn: 0.4716255	total: 643ms	remaining: 2s
17:	learn: 0.4629426	total: 679ms	remaining: 1.96s
18:	learn: 0.4543146	total: 715ms	remaining: 1.92s
19:	learn: 0.4450274	total: 751ms	remaining: 1.88s
20:	learn: 0.4360269	total: 795ms	remaining: 1.85s
21:	learn: 0.4288315	total: 838ms	remaining: 1.83s
22:	learn: 0.4198105	total: 873ms	remaining: 1.78s
23:	learn: 0.4137630	total: 907ms	remaining: 1.74s
24:	learn: 0.4069434	total: 941ms	remaining: 1.69s
25:	learn: 0.4010151	total: 984ms	remaining: 1.67s
26:	learn: 0.3921870	total: 1.02s	remaining: 1.63s
27:	learn: 0.3856900	total: 1.06s	remaining: 1.58s
28:	learn: 0.3794459	total: 1.09s	remaining: 1.54s
29:	learn: 0.3734359	total: 1.13s	remaining: 1.5s
30:	learn: 0.3676631	total: 1.16s	remaining: 1.46s
31:	learn: 0.3600506	total: 1.21s	remaining: 1.44s
32:	learn: 0.3547393	total: 1.25s	remaining: 1.4s
33:	learn: 0.3490570	total: 1.28s	remaining: 1.36s
34:	learn: 0.3434171	total: 1.32s	remaining: 1.32s
35:	learn: 0.3388457	total: 1.36s	remaining: 1.28s
36:	learn: 0.3329704	total: 1.39s	remaining: 1.24s
37:	learn: 0.3275250	total: 1.44s	remaining: 1.21s
38:	learn: 0.3233160	total: 1.47s	remaining: 1.17s
39:	learn: 0.3194589	total: 1.51s	remaining: 1.13s
40:	learn: 0.3153729	total: 1.54s	remaining: 1.09s
41:	learn: 0.3118610	total: 1.58s	remaining: 1.05s
42:	learn: 0.3068602	total: 1.61s	remaining: 1.01s
43:	learn: 0.3034702	total: 1.66s	remaining: 979ms
44:	learn: 0.3001024	total: 1.69s	remaining: 940ms
45:	learn: 0.2954749	total: 1.73s	remaining: 901ms
46:	learn: 0.2923391	total: 1.76s	remaining: 862ms
47:	learn: 0.2874109	total: 1.79s	remaining: 823ms
48:	learn: 0.2848988	total: 1.83s	remaining: 786ms
49:	learn: 0.2811443	total: 1.88s	remaining: 753ms
50:	learn: 0.2782434	total: 1.92s	remaining: 715ms
51:	learn: 0.2747128	total: 1.95s	remaining: 677ms
52:	learn: 0.2711399	total: 2s	remaining: 640ms
53:	learn: 0.2677238	total: 2.04s	remaining: 605ms
54:	learn: 0.2643356	total: 2.08s	remaining: 567ms
55:	learn: 0.2611250	total: 2.12s	remaining: 531ms
56:	learn: 0.2582440	total: 2.16s	remaining: 493ms
57:	learn: 0.2552127	total: 2.2s	remaining: 455ms
58:	learn: 0.2523571	total: 2.24s	remaining: 417ms
59:	learn: 0.2500531	total: 2.27s	remaining: 379ms
60:	learn: 0.2475371	total: 2.31s	remaining: 341ms
61:	learn: 0.2444658	total: 2.35s	remaining: 304ms
62:	learn: 0.2417350	total: 2.39s	remaining: 265ms
63:	learn: 0.2396821	total: 2.42s	remaining: 227ms
64:	learn: 0.2369638	total: 2.46s	remaining: 189ms
65:	learn: 0.2353972	total: 2.5s	remaining: 151ms
66:	learn: 0.2334873	total: 2.53s	remaining: 113ms
67:	learn: 0.2310926	total: 2.58s	remaining: 75.9ms
68:	learn: 0.2285355	total: 2.61s	remaining: 37.9ms
69:	learn: 0.2263587	total: 2.65s	remaining: 0us
0:	learn: 0.6787769	total: 41.6ms	remaining: 2.87s
1:	learn: 0.6633095	total: 89.8ms	remaining: 3.05s
2:	learn: 0.6476976	total: 126ms	remaining: 2.82s
3:	learn: 0.6318681	total: 162ms	remaining: 2.67s
4:	learn: 0.6169129	total: 198ms	remaining: 2.57s
5:	learn: 0.6050231	total: 234ms	remaining: 2.49s
6:	learn: 0.5904710	total: 282ms	remaining: 2.54s
7:	learn: 0.5792131	total: 319ms	remaining: 2.47s
8:	learn: 0.5656212	total: 356ms	remaining: 2.41s
9:	learn: 0.5528361	total: 393ms	remaining: 2.35s
10:	learn: 0.5406429	total: 429ms	remaining: 2.3s
11:	learn: 0.5279326	total: 465ms	remaining: 2.25s
12:	learn: 0.5187412	total: 514ms	remaining: 2.25s
13:	learn: 0.5070674	total: 550ms	remaining: 2.2s
14:	learn: 0.4958112	total: 586ms	remaining: 2.15s
15:	learn: 0.4861740	total: 621ms	remaining: 2.1s
16:	learn: 0.4771374	total: 657ms	remaining: 2.05s
17:	learn: 0.4669238	total: 692ms	remaining: 2s
18:	learn: 0.4587888	total: 736ms	remaining: 1.98s
19:	learn: 0.4508015	total: 772ms	remaining: 1.93s
20:	learn: 0.4409232	total: 807ms	remaining: 1.88s
21:	learn: 0.4332028	total: 842ms	remaining: 1.84s
22:	learn: 0.4241961	total: 877ms	remaining: 1.79s

23:	learn: 0.4178312	total: 900ms	remaining: 1.73s
24:	learn: 0.4108071	total: 936ms	remaining: 1.69s
25:	learn: 0.4049407	total: 983ms	remaining: 1.66s
26:	learn: 0.3981404	total: 1.02s	remaining: 1.62s
27:	learn: 0.3910480	total: 1.06s	remaining: 1.58s
28:	learn: 0.3848455	total: 1.1s	remaining: 1.56s
29:	learn: 0.3784674	total: 1.14s	remaining: 1.52s
30:	learn: 0.3722911	total: 1.18s	remaining: 1.49s
31:	learn: 0.3650416	total: 1.22s	remaining: 1.45s
32:	learn: 0.3596298	total: 1.25s	remaining: 1.41s
33:	learn: 0.3535587	total: 1.29s	remaining: 1.37s
34:	learn: 0.3479559	total: 1.33s	remaining: 1.33s
35:	learn: 0.3436314	total: 1.36s	remaining: 1.29s
36:	learn: 0.3386817	total: 1.41s	remaining: 1.25s
37:	learn: 0.3332009	total: 1.44s	remaining: 1.22s
38:	learn: 0.3284626	total: 1.48s	remaining: 1.18s
39:	learn: 0.3243020	total: 1.52s	remaining: 1.14s
40:	learn: 0.3203881	total: 1.56s	remaining: 1.1s
41:	learn: 0.3164657	total: 1.59s	remaining: 1.06s
42:	learn: 0.3115393	total: 1.64s	remaining: 1.03s
43:	learn: 0.3078476	total: 1.68s	remaining: 993ms
44:	learn: 0.3029053	total: 1.72s	remaining: 955ms
45:	learn: 0.2979739	total: 1.76s	remaining: 917ms
46:	learn: 0.2945617	total: 1.79s	remaining: 877ms
47:	learn: 0.2903203	total: 1.83s	remaining: 838ms
48:	learn: 0.2874027	total: 1.87s	remaining: 802ms
49:	learn: 0.2837694	total: 1.91s	remaining: 763ms
50:	learn: 0.2806973	total: 1.94s	remaining: 724ms
51:	learn: 0.2774930	total: 1.98s	remaining: 685ms
52:	learn: 0.2738758	total: 2.01s	remaining: 646ms
53:	learn: 0.2708897	total: 2.05s	remaining: 607ms
54:	learn: 0.2688938	total: 2.05s	remaining: 559ms
55:	learn: 0.2653052	total: 2.1s	remaining: 525ms
56:	learn: 0.2627639	total: 2.14s	remaining: 489ms
57:	learn: 0.2598077	total: 2.18s	remaining: 451ms
58:	learn: 0.2571972	total: 2.21s	remaining: 413ms
59:	learn: 0.2549447	total: 2.25s	remaining: 375ms
60:	learn: 0.2523222	total: 2.28s	remaining: 337ms
61:	learn: 0.2493011	total: 2.33s	remaining: 300ms
62:	learn: 0.2475206	total: 2.36s	remaining: 263ms
63:	learn: 0.2451392	total: 2.4s	remaining: 225ms
64:	learn: 0.2425483	total: 2.43s	remaining: 187ms
65:	learn: 0.2403360	total: 2.47s	remaining: 150ms
66:	learn: 0.2378210	total: 2.51s	remaining: 112ms
67:	learn: 0.2363876	total: 2.55s	remaining: 75.1ms
68:	learn: 0.2347327	total: 2.59s	remaining: 37.5ms
69:	learn: 0.2325688	total: 2.63s	remaining: 0us
0:	learn: 0.6653901	total: 42.1ms	remaining: 2.91s
1:	learn: 0.6337522	total: 77.5ms	remaining: 2.64s
2:	learn: 0.6059190	total: 112ms	remaining: 2.5s
3:	learn: 0.5785004	total: 147ms	remaining: 2.42s
4:	learn: 0.5523715	total: 181ms	remaining: 2.35s
5:	learn: 0.5326429	total: 215ms	remaining: 2.3s
6:	learn: 0.5151196	total: 258ms	remaining: 2.32s
7:	learn: 0.4976233	total: 293ms	remaining: 2.27s
8:	learn: 0.4794307	total: 328ms	remaining: 2.22s
9:	learn: 0.4605170	total: 371ms	remaining: 2.23s
10:	learn: 0.4439954	total: 410ms	remaining: 2.2s
11:	learn: 0.4271142	total: 445ms	remaining: 2.15s
12:	learn: 0.4146596	total: 487ms	remaining: 2.14s
13:	learn: 0.3991062	total: 522ms	remaining: 2.09s
14:	learn: 0.3847093	total: 556ms	remaining: 2.04s
15:	learn: 0.3733216	total: 591ms	remaining: 1.99s
16:	learn: 0.3624527	total: 610ms	remaining: 1.9s
17:	learn: 0.3520358	total: 644ms	remaining: 1.86s
18:	learn: 0.3420739	total: 678ms	remaining: 1.82s
19:	learn: 0.3324052	total: 722ms	remaining: 1.8s
20:	learn: 0.3215518	total: 756ms	remaining: 1.76s
21:	learn: 0.3134324	total: 791ms	remaining: 1.73s
22:	learn: 0.3048180	total: 826ms	remaining: 1.69s
23:	learn: 0.2991114	total: 861ms	remaining: 1.65s
24:	learn: 0.2939805	total: 896ms	remaining: 1.61s
25:	learn: 0.2887437	total: 941ms	remaining: 1.59s
26:	learn: 0.2827361	total: 977ms	remaining: 1.56s
27:	learn: 0.2770809	total: 1.01s	remaining: 1.52s
28:	learn: 0.2719442	total: 1.05s	remaining: 1.48s
29:	learn: 0.2663294	total: 1.08s	remaining: 1.44s
30:	learn: 0.2614419	total: 1.11s	remaining: 1.4s
31:	learn: 0.2555074	total: 1.16s	remaining: 1.37s
32:	learn: 0.2505669	total: 1.19s	remaining: 1.34s
33:	learn: 0.2465351	total: 1.23s	remaining: 1.3s
34:	learn: 0.2421552	total: 1.26s	remaining: 1.26s
35:	learn: 0.2390454	total: 1.29s	remaining: 1.22s
36:	learn: 0.2353690	total: 1.33s	remaining: 1.19s
37:	learn: 0.2319378	total: 1.39s	remaining: 1.17s
38:	learn: 0.2293074	total: 1.42s	remaining: 1.13s
39:	learn: 0.2265773	total: 1.46s	remaining: 1.09s
40:	learn: 0.2239044	total: 1.49s	remaining: 1.05s
41:	learn: 0.2214810	total: 1.52s	remaining: 1.02s
42:	learn: 0.2180881	total: 1.56s	remaining: 979ms
43:	learn: 0.2154749	total: 1.6s	remaining: 945ms
44:	learn: 0.2122523	total: 1.64s	remaining: 910ms
45:	learn: 0.2091643	total: 1.67s	remaining: 873ms
46:	learn: 0.2073426	total: 1.71s	remaining: 835ms
47:	learn: 0.2043621	total: 1.74s	remaining: 798ms
48:	learn: 0.2018468	total: 1.77s	remaining: 761ms
49:	learn: 0.1990600	total: 1.82s	remaining: 728ms
50:	learn: 0.1975180	total: 1.86s	remaining: 691ms
51:	learn: 0.1953713	total: 1.89s	remaining: 654ms
52:	learn: 0.1931717	total: 1.93s	remaining: 618ms
53:	learn: 0.1910559	total: 1.96s	remaining: 582ms
54:	learn: 0.1893376	total: 2s	remaining: 545ms



55:	learn: 0.1875357	total: 2.04s	remaining: 510ms
56:	learn: 0.1856776	total: 2.08s	remaining: 474ms
57:	learn: 0.1841191	total: 2.11s	remaining: 437ms
58:	learn: 0.1830692	total: 2.15s	remaining: 400ms
59:	learn: 0.1820441	total: 2.18s	remaining: 364ms
60:	learn: 0.1809230	total: 2.22s	remaining: 327ms
61:	learn: 0.1797689	total: 2.26s	remaining: 292ms
62:	learn: 0.1785858	total: 2.3s	remaining: 255ms
63:	learn: 0.1777054	total: 2.33s	remaining: 219ms
64:	learn: 0.1762272	total: 2.38s	remaining: 183ms
65:	learn: 0.1751500	total: 2.42s	remaining: 147ms
66:	learn: 0.1736805	total: 2.46s	remaining: 110ms
67:	learn: 0.1725445	total: 2.5s	remaining: 73.7ms
68:	learn: 0.1710556	total: 2.54s	remaining: 36.8ms
69:	learn: 0.1699374	total: 2.58s	remaining: 0us
0:	learn: 0.6647653	total: 45.4ms	remaining: 3.13s
1:	learn: 0.6308751	total: 83.8ms	remaining: 2.85s
2:	learn: 0.6045444	total: 121ms	remaining: 2.71s
3:	learn: 0.5778500	total: 157ms	remaining: 2.59s
4:	learn: 0.5508174	total: 192ms	remaining: 2.49s
5:	learn: 0.5277074	total: 231ms	remaining: 2.47s
6:	learn: 0.5098412	total: 276ms	remaining: 2.48s
7:	learn: 0.4901300	total: 312ms	remaining: 2.42s
8:	learn: 0.4681178	total: 348ms	remaining: 2.36s
9:	learn: 0.4470315	total: 384ms	remaining: 2.3s
10:	learn: 0.4286698	total: 419ms	remaining: 2.25s
11:	learn: 0.4115424	total: 454ms	remaining: 2.19s
12:	learn: 0.3992533	total: 497ms	remaining: 2.18s
13:	learn: 0.3823769	total: 533ms	remaining: 2.13s
14:	learn: 0.3677396	total: 570ms	remaining: 2.09s
15:	learn: 0.3571496	total: 606ms	remaining: 2.05s
16:	learn: 0.3461820	total: 626ms	remaining: 1.95s
17:	learn: 0.3360846	total: 663ms	remaining: 1.91s
18:	learn: 0.3265848	total: 716ms	remaining: 1.92s
19:	learn: 0.3167481	total: 757ms	remaining: 1.89s
20:	learn: 0.3058838	total: 793ms	remaining: 1.85s
21:	learn: 0.2992202	total: 829ms	remaining: 1.81s
22:	learn: 0.2896502	total: 866ms	remaining: 1.77s
23:	learn: 0.2836389	total: 902ms	remaining: 1.73s
24:	learn: 0.2773137	total: 948ms	remaining: 1.71s
25:	learn: 0.2722424	total: 984ms	remaining: 1.66s
26:	learn: 0.2664217	total: 1.02s	remaining: 1.62s
27:	learn: 0.2609737	total: 1.06s	remaining: 1.58s
28:	learn: 0.2558042	total: 1.09s	remaining: 1.54s
29:	learn: 0.2502955	total: 1.13s	remaining: 1.5s
30:	learn: 0.2461421	total: 1.17s	remaining: 1.47s
31:	learn: 0.2397970	total: 1.21s	remaining: 1.43s
32:	learn: 0.2357047	total: 1.25s	remaining: 1.4s
33:	learn: 0.2310688	total: 1.28s	remaining: 1.36s
34:	learn: 0.2261689	total: 1.32s	remaining: 1.32s
35:	learn: 0.2231634	total: 1.35s	remaining: 1.28s
36:	learn: 0.2190171	total: 1.4s	remaining: 1.25s
37:	learn: 0.2156113	total: 1.43s	remaining: 1.21s
38:	learn: 0.2115855	total: 1.47s	remaining: 1.17s
39:	learn: 0.2083588	total: 1.51s	remaining: 1.13s
40:	learn: 0.2059316	total: 1.54s	remaining: 1.09s
41:	learn: 0.2029611	total: 1.58s	remaining: 1.05s
42:	learn: 0.1996227	total: 1.62s	remaining: 1.02s
43:	learn: 0.1978244	total: 1.66s	remaining: 978ms
44:	learn: 0.1944806	total: 1.69s	remaining: 939ms
45:	learn: 0.1913383	total: 1.73s	remaining: 904ms
46:	learn: 0.1899906	total: 1.77s	remaining: 865ms
47:	learn: 0.1875529	total: 1.8s	remaining: 826ms
48:	learn: 0.1862593	total: 1.85s	remaining: 791ms
49:	learn: 0.1836222	total: 1.88s	remaining: 753ms
50:	learn: 0.1813009	total: 1.92s	remaining: 714ms
51:	learn: 0.1786384	total: 1.95s	remaining: 676ms
52:	learn: 0.1772126	total: 1.99s	remaining: 638ms
53:	learn: 0.1752958	total: 2.03s	remaining: 600ms
54:	learn: 0.1732996	total: 2.07s	remaining: 564ms
55:	learn: 0.1719410	total: 2.1s	remaining: 526ms
56:	learn: 0.1702443	total: 2.14s	remaining: 487ms
57:	learn: 0.1684799	total: 2.17s	remaining: 449ms
58:	learn: 0.1668544	total: 2.21s	remaining: 411ms
59:	learn: 0.1656654	total: 2.24s	remaining: 374ms
60:	learn: 0.1644565	total: 2.28s	remaining: 337ms
61:	learn: 0.1627890	total: 2.32s	remaining: 300ms
62:	learn: 0.1616570	total: 2.36s	remaining: 262ms
63:	learn: 0.1606570	total: 2.39s	remaining: 225ms
64:	learn: 0.1592993	total: 2.43s	remaining: 187ms
65:	learn: 0.1586117	total: 2.47s	remaining: 149ms
66:	learn: 0.1570677	total: 2.52s	remaining: 113ms
67:	learn: 0.1560957	total: 2.55s	remaining: 75ms
68:	learn: 0.1547233	total: 2.58s	remaining: 37.5ms
69:	learn: 0.1534773	total: 2.62s	remaining: 0us
0:	learn: 0.6646729	total: 35.1ms	remaining: 2.42s
1:	learn: 0.6348887	total: 70ms	remaining: 2.38s
2:	learn: 0.6057415	total: 105ms	remaining: 2.34s
3:	learn: 0.5771231	total: 140ms	remaining: 2.31s
4:	learn: 0.5491032	total: 175ms	remaining: 2.27s
5:	learn: 0.5295906	total: 211ms	remaining: 2.25s
6:	learn: 0.5117232	total: 256ms	remaining: 2.3s
7:	learn: 0.4915744	total: 297ms	remaining: 2.3s
8:	learn: 0.4701710	total: 332ms	remaining: 2.25s
9:	learn: 0.4510586	total: 368ms	remaining: 2.21s
10:	learn: 0.4342654	total: 404ms	remaining: 2.17s
11:	learn: 0.4169922	total: 443ms	remaining: 2.14s
12:	learn: 0.4047689	total: 487ms	remaining: 2.13s
13:	learn: 0.3892958	total: 522ms	remaining: 2.09s
14:	learn: 0.3751923	total: 558ms	remaining: 2.04s
15:	learn: 0.3634858	total: 593ms	remaining: 2s
16:	learn: 0.3529017	total: 628ms	remaining: 1.96s

17:	learn: 0.3410812	total: 663ms	remaining: 1.92s
18:	learn: 0.3320536	total: 707ms	remaining: 1.9s
19:	learn: 0.3239706	total: 743ms	remaining: 1.86s
20:	learn: 0.3134735	total: 779ms	remaining: 1.82s
21:	learn: 0.3061444	total: 817ms	remaining: 1.78s
22:	learn: 0.2969195	total: 853ms	remaining: 1.74s
23:	learn: 0.2910119	total: 872ms	remaining: 1.67s
24:	learn: 0.2839389	total: 910ms	remaining: 1.64s
25:	learn: 0.2786662	total: 951ms	remaining: 1.61s
26:	learn: 0.2728345	total: 997ms	remaining: 1.59s
27:	learn: 0.2672551	total: 1.03s	remaining: 1.55s
28:	learn: 0.2624970	total: 1.07s	remaining: 1.51s
29:	learn: 0.2553838	total: 1.11s	remaining: 1.48s
30:	learn: 0.2512006	total: 1.16s	remaining: 1.45s
31:	learn: 0.2451399	total: 1.19s	remaining: 1.42s
32:	learn: 0.2404142	total: 1.23s	remaining: 1.38s
33:	learn: 0.2357983	total: 1.26s	remaining: 1.34s
34:	learn: 0.2319253	total: 1.3s	remaining: 1.3s
35:	learn: 0.2290277	total: 1.34s	remaining: 1.26s
36:	learn: 0.2249938	total: 1.38s	remaining: 1.23s
37:	learn: 0.2209740	total: 1.41s	remaining: 1.19s
38:	learn: 0.2179076	total: 1.45s	remaining: 1.15s
39:	learn: 0.2145454	total: 1.49s	remaining: 1.11s
40:	learn: 0.2121858	total: 1.52s	remaining: 1.08s
41:	learn: 0.2082461	total: 1.56s	remaining: 1.04s
42:	learn: 0.2048335	total: 1.6s	remaining: 1.01s
43:	learn: 0.2027585	total: 1.64s	remaining: 970ms
44:	learn: 0.1992589	total: 1.68s	remaining: 932ms
45:	learn: 0.1964910	total: 1.71s	remaining: 894ms
46:	learn: 0.1951188	total: 1.75s	remaining: 856ms
47:	learn: 0.1919594	total: 1.78s	remaining: 818ms
48:	learn: 0.1894465	total: 1.83s	remaining: 785ms
49:	learn: 0.1869043	total: 1.87s	remaining: 747ms
50:	learn: 0.1851982	total: 1.9s	remaining: 710ms
51:	learn: 0.1830122	total: 1.94s	remaining: 672ms
52:	learn: 0.1809379	total: 1.99s	remaining: 637ms
53:	learn: 0.1788723	total: 2.02s	remaining: 600ms
54:	learn: 0.1773426	total: 2.07s	remaining: 565ms
55:	learn: 0.1752839	total: 2.11s	remaining: 527ms
56:	learn: 0.1737877	total: 2.14s	remaining: 489ms
57:	learn: 0.1726799	total: 2.19s	remaining: 453ms
58:	learn: 0.1714130	total: 2.24s	remaining: 418ms
59:	learn: 0.1699208	total: 2.28s	remaining: 381ms
60:	learn: 0.1686267	total: 2.32s	remaining: 342ms
61:	learn: 0.1671627	total: 2.36s	remaining: 304ms
62:	learn: 0.1658349	total: 2.4s	remaining: 267ms
63:	learn: 0.1648268	total: 2.44s	remaining: 228ms
64:	learn: 0.1639074	total: 2.47s	remaining: 190ms
65:	learn: 0.1622544	total: 2.52s	remaining: 153ms
66:	learn: 0.1610816	total: 2.56s	remaining: 114ms
67:	learn: 0.1601877	total: 2.59s	remaining: 76.2ms
68:	learn: 0.1587445	total: 2.63s	remaining: 38.1ms
69:	learn: 0.1574988	total: 2.67s	remaining: 0us
0:	learn: 0.6518949	total: 34.2ms	remaining: 2.36s
1:	learn: 0.6062164	total: 69ms	remaining: 2.35s
2:	learn: 0.5673831	total: 103ms	remaining: 2.3s
3:	learn: 0.5303763	total: 141ms	remaining: 2.32s
4:	learn: 0.4994415	total: 175ms	remaining: 2.27s
5:	learn: 0.4757570	total: 217ms	remaining: 2.31s
6:	learn: 0.4541921	total: 262ms	remaining: 2.36s
7:	learn: 0.4331930	total: 297ms	remaining: 2.3s
8:	learn: 0.4115985	total: 333ms	remaining: 2.26s
9:	learn: 0.3898494	total: 368ms	remaining: 2.21s
10:	learn: 0.3717176	total: 404ms	remaining: 2.16s
11:	learn: 0.3536362	total: 439ms	remaining: 2.12s
12:	learn: 0.3414317	total: 485ms	remaining: 2.13s
13:	learn: 0.3300010	total: 519ms	remaining: 2.08s
14:	learn: 0.3153863	total: 554ms	remaining: 2.03s
15:	learn: 0.3044169	total: 590ms	remaining: 1.99s
16:	learn: 0.2942610	total: 609ms	remaining: 1.9s
17:	learn: 0.2828634	total: 644ms	remaining: 1.86s
18:	learn: 0.2752138	total: 690ms	remaining: 1.85s
19:	learn: 0.2665403	total: 733ms	remaining: 1.83s
20:	learn: 0.2569809	total: 769ms	remaining: 1.79s
21:	learn: 0.2512699	total: 804ms	remaining: 1.75s
22:	learn: 0.2441609	total: 837ms	remaining: 1.71s
23:	learn: 0.2398388	total: 872ms	remaining: 1.67s
24:	learn: 0.2354055	total: 876ms	remaining: 1.58s
25:	learn: 0.2311587	total: 920ms	remaining: 1.56s
26:	learn: 0.2256353	total: 956ms	remaining: 1.52s
27:	learn: 0.2205951	total: 991ms	remaining: 1.49s
28:	learn: 0.2167488	total: 1.03s	remaining: 1.45s
29:	learn: 0.2133685	total: 1.06s	remaining: 1.42s
30:	learn: 0.2093162	total: 1.1s	remaining: 1.38s
31:	learn: 0.2072354	total: 1.14s	remaining: 1.36s
32:	learn: 0.2032979	total: 1.18s	remaining: 1.33s
33:	learn: 0.1995165	total: 1.22s	remaining: 1.3s
34:	learn: 0.1960965	total: 1.26s	remaining: 1.26s
35:	learn: 0.1942163	total: 1.26s	remaining: 1.19s
36:	learn: 0.1913105	total: 1.3s	remaining: 1.16s
37:	learn: 0.1894032	total: 1.33s	remaining: 1.12s
38:	learn: 0.1868027	total: 1.38s	remaining: 1.09s
39:	learn: 0.1835597	total: 1.41s	remaining: 1.06s
40:	learn: 0.1804997	total: 1.45s	remaining: 1.02s
41:	learn: 0.1784591	total: 1.48s	remaining: 987ms
42:	learn: 0.1764678	total: 1.51s	remaining: 951ms
43:	learn: 0.1747860	total: 1.55s	remaining: 915ms
44:	learn: 0.1739712	total: 1.59s	remaining: 882ms
45:	learn: 0.1716544	total: 1.62s	remaining: 847ms
46:	learn: 0.1698876	total: 1.66s	remaining: 812ms
47:	learn: 0.1686328	total: 1.7s	remaining: 778ms
48:	learn: 0.1671131	total: 1.73s	remaining: 743ms

49:	learn: 0.1658188	total: 1.77s	remaining: 707ms
50:	learn: 0.1642036	total: 1.81s	remaining: 675ms
51:	learn: 0.1631039	total: 1.85s	remaining: 640ms
52:	learn: 0.1620387	total: 1.89s	remaining: 605ms
53:	learn: 0.1607973	total: 1.93s	remaining: 572ms
54:	learn: 0.1598126	total: 1.97s	remaining: 536ms
55:	learn: 0.1588643	total: 2s	remaining: 500ms
56:	learn: 0.1581679	total: 2.04s	remaining: 466ms
57:	learn: 0.1565681	total: 2.08s	remaining: 430ms
58:	learn: 0.1549369	total: 2.11s	remaining: 394ms
59:	learn: 0.1537222	total: 2.15s	remaining: 358ms
60:	learn: 0.1530963	total: 2.18s	remaining: 322ms
61:	learn: 0.1525169	total: 2.23s	remaining: 287ms
62:	learn: 0.1511220	total: 2.27s	remaining: 252ms
63:	learn: 0.1503056	total: 2.31s	remaining: 216ms
64:	learn: 0.1490784	total: 2.34s	remaining: 180ms
65:	learn: 0.1473700	total: 2.38s	remaining: 144ms
66:	learn: 0.1457683	total: 2.41s	remaining: 108ms
67:	learn: 0.1449296	total: 2.44s	remaining: 71.9ms
68:	learn: 0.1438806	total: 2.49s	remaining: 36ms
69:	learn: 0.1434154	total: 2.52s	remaining: 0us
0:	learn: 0.6509719	total: 37.2ms	remaining: 2.56s
1:	learn: 0.6020890	total: 84.1ms	remaining: 2.86s
2:	learn: 0.5654535	total: 121ms	remaining: 2.69s
3:	learn: 0.5294275	total: 156ms	remaining: 2.58s
4:	learn: 0.4956424	total: 190ms	remaining: 2.47s
5:	learn: 0.4661586	total: 225ms	remaining: 2.4s
6:	learn: 0.4445128	total: 260ms	remaining: 2.34s
7:	learn: 0.4211374	total: 301ms	remaining: 2.33s
8:	learn: 0.3955347	total: 336ms	remaining: 2.27s
9:	learn: 0.3720148	total: 370ms	remaining: 2.22s
10:	learn: 0.3523635	total: 405ms	remaining: 2.17s
11:	learn: 0.3347254	total: 439ms	remaining: 2.12s
12:	learn: 0.3230482	total: 475ms	remaining: 2.08s
13:	learn: 0.3065965	total: 517ms	remaining: 2.07s
14:	learn: 0.2970749	total: 554ms	remaining: 2.03s
15:	learn: 0.2871629	total: 602ms	remaining: 2.03s
16:	learn: 0.2770954	total: 621ms	remaining: 1.94s
17:	learn: 0.2679117	total: 657ms	remaining: 1.9s
18:	learn: 0.2601215	total: 693ms	remaining: 1.86s
19:	learn: 0.2514976	total: 737ms	remaining: 1.84s
20:	learn: 0.2431400	total: 775ms	remaining: 1.81s
21:	learn: 0.2372216	total: 811ms	remaining: 1.77s
22:	learn: 0.2289316	total: 848ms	remaining: 1.73s
23:	learn: 0.2245784	total: 884ms	remaining: 1.69s
24:	learn: 0.2197266	total: 920ms	remaining: 1.66s
25:	learn: 0.2159343	total: 966ms	remaining: 1.63s
26:	learn: 0.2115738	total: 1s	remaining: 1.6s
27:	learn: 0.2078047	total: 1.04s	remaining: 1.56s
28:	learn: 0.2042431	total: 1.07s	remaining: 1.52s
29:	learn: 0.2002614	total: 1.11s	remaining: 1.49s
30:	learn: 0.1960065	total: 1.15s	remaining: 1.45s
31:	learn: 0.1920293	total: 1.19s	remaining: 1.41s
32:	learn: 0.1889482	total: 1.23s	remaining: 1.38s
33:	learn: 0.1854658	total: 1.26s	remaining: 1.34s
34:	learn: 0.1812703	total: 1.3s	remaining: 1.3s
35:	learn: 0.1791590	total: 1.33s	remaining: 1.26s
36:	learn: 0.1759942	total: 1.37s	remaining: 1.22s
37:	learn: 0.1722047	total: 1.41s	remaining: 1.19s
38:	learn: 0.1698119	total: 1.44s	remaining: 1.15s
39:	learn: 0.1671544	total: 1.48s	remaining: 1.11s
40:	learn: 0.1654468	total: 1.51s	remaining: 1.07s
41:	learn: 0.1632825	total: 1.55s	remaining: 1.03s
42:	learn: 0.1619266	total: 1.59s	remaining: 999ms
43:	learn: 0.1601512	total: 1.64s	remaining: 967ms
44:	learn: 0.1574705	total: 1.67s	remaining: 928ms
45:	learn: 0.1550155	total: 1.71s	remaining: 890ms
46:	learn: 0.1540709	total: 1.74s	remaining: 852ms
47:	learn: 0.1522576	total: 1.77s	remaining: 814ms
48:	learn: 0.1509553	total: 1.81s	remaining: 776ms
49:	learn: 0.1492534	total: 1.86s	remaining: 744ms
50:	learn: 0.1472910	total: 1.9s	remaining: 707ms
51:	learn: 0.1456915	total: 1.93s	remaining: 670ms
52:	learn: 0.1441786	total: 1.97s	remaining: 632ms
53:	learn: 0.1430157	total: 2.01s	remaining: 595ms
54:	learn: 0.1419859	total: 2.04s	remaining: 557ms
55:	learn: 0.1410462	total: 2.09s	remaining: 522ms
56:	learn: 0.1401587	total: 2.12s	remaining: 484ms
57:	learn: 0.1387045	total: 2.16s	remaining: 447ms
58:	learn: 0.1379444	total: 2.19s	remaining: 409ms
59:	learn: 0.1372372	total: 2.23s	remaining: 371ms
60:	learn: 0.1362886	total: 2.26s	remaining: 334ms
61:	learn: 0.1348591	total: 2.31s	remaining: 297ms
62:	learn: 0.1341841	total: 2.34s	remaining: 260ms
63:	learn: 0.1333220	total: 2.38s	remaining: 223ms
64:	learn: 0.1320596	total: 2.42s	remaining: 186ms
65:	learn: 0.1314162	total: 2.45s	remaining: 149ms
66:	learn: 0.1299314	total: 2.49s	remaining: 111ms
67:	learn: 0.1286896	total: 2.53s	remaining: 74.5ms
68:	learn: 0.1277527	total: 2.57s	remaining: 37.2ms
69:	learn: 0.1262683	total: 2.61s	remaining: 0us
0:	learn: 0.6508348	total: 46.8ms	remaining: 3.23s
1:	learn: 0.6078480	total: 83.2ms	remaining: 2.83s
2:	learn: 0.5670973	total: 120ms	remaining: 2.67s
3:	learn: 0.5283949	total: 156ms	remaining: 2.57s
4:	learn: 0.4959166	total: 194ms	remaining: 2.52s
5:	learn: 0.4712487	total: 230ms	remaining: 2.45s
6:	learn: 0.4493432	total: 275ms	remaining: 2.48s
7:	learn: 0.4251239	total: 311ms	remaining: 2.41s
8:	learn: 0.4000466	total: 348ms	remaining: 2.36s
9:	learn: 0.3790972	total: 386ms	remaining: 2.31s
10:	learn: 0.3608026	total: 422ms	remaining: 2.26s

11:	learn: 0.3426061	total: 458ms	remaining: 2.21s
12:	learn: 0.3307967	total: 500ms	remaining: 2.19s
13:	learn: 0.3152901	total: 536ms	remaining: 2.15s
14:	learn: 0.3016123	total: 572ms	remaining: 2.1s
15:	learn: 0.2907064	total: 607ms	remaining: 2.05s
16:	learn: 0.2790097	total: 643ms	remaining: 2s
17:	learn: 0.2687192	total: 679ms	remaining: 1.96s
18:	learn: 0.2604770	total: 727ms	remaining: 1.95s
19:	learn: 0.2538520	total: 763ms	remaining: 1.91s
20:	learn: 0.2452745	total: 798ms	remaining: 1.86s
21:	learn: 0.2397876	total: 833ms	remaining: 1.82s
22:	learn: 0.2323341	total: 877ms	remaining: 1.79s
23:	learn: 0.2281031	total: 897ms	remaining: 1.72s
24:	learn: 0.2239697	total: 940ms	remaining: 1.69s
25:	learn: 0.2177234	total: 975ms	remaining: 1.65s
26:	learn: 0.2136502	total: 1.01s	remaining: 1.61s
27:	learn: 0.2095310	total: 1.05s	remaining: 1.57s
28:	learn: 0.2062731	total: 1.08s	remaining: 1.53s
29:	learn: 0.2011577	total: 1.12s	remaining: 1.49s
30:	learn: 0.1975007	total: 1.16s	remaining: 1.46s
31:	learn: 0.1929600	total: 1.2s	remaining: 1.42s
32:	learn: 0.1897422	total: 1.24s	remaining: 1.39s
33:	learn: 0.1859675	total: 1.27s	remaining: 1.35s
34:	learn: 0.1827021	total: 1.31s	remaining: 1.31s
35:	learn: 0.1799893	total: 1.34s	remaining: 1.27s
36:	learn: 0.1769820	total: 1.39s	remaining: 1.24s
37:	learn: 0.1735673	total: 1.43s	remaining: 1.2s
38:	learn: 0.1708026	total: 1.46s	remaining: 1.16s
39:	learn: 0.1689116	total: 1.5s	remaining: 1.12s
40:	learn: 0.1673618	total: 1.53s	remaining: 1.08s
41:	learn: 0.1651040	total: 1.57s	remaining: 1.05s
42:	learn: 0.1638129	total: 1.62s	remaining: 1.01s
43:	learn: 0.1624469	total: 1.65s	remaining: 977ms
44:	learn: 0.1601504	total: 1.69s	remaining: 939ms
45:	learn: 0.1581727	total: 1.73s	remaining: 901ms
46:	learn: 0.1560981	total: 1.76s	remaining: 863ms
47:	learn: 0.1540697	total: 1.8s	remaining: 826ms
48:	learn: 0.1529908	total: 1.85s	remaining: 792ms
49:	learn: 0.1512204	total: 1.89s	remaining: 757ms
50:	learn: 0.1493843	total: 1.93s	remaining: 718ms
51:	learn: 0.1479547	total: 1.96s	remaining: 679ms
52:	learn: 0.1462726	total: 2s	remaining: 641ms
53:	learn: 0.1448924	total: 2.03s	remaining: 602ms
54:	learn: 0.1439185	total: 2.08s	remaining: 567ms
55:	learn: 0.1427119	total: 2.12s	remaining: 529ms
56:	learn: 0.1418941	total: 2.15s	remaining: 491ms
57:	learn: 0.1409165	total: 2.19s	remaining: 452ms
58:	learn: 0.1398811	total: 2.22s	remaining: 414ms
59:	learn: 0.1388896	total: 2.26s	remaining: 376ms
60:	learn: 0.1375950	total: 2.31s	remaining: 340ms
61:	learn: 0.1359916	total: 2.34s	remaining: 302ms
62:	learn: 0.1352204	total: 2.38s	remaining: 264ms
63:	learn: 0.1343825	total: 2.41s	remaining: 226ms
64:	learn: 0.1336517	total: 2.45s	remaining: 188ms
65:	learn: 0.1329526	total: 2.48s	remaining: 151ms
66:	learn: 0.1322706	total: 2.53s	remaining: 113ms
67:	learn: 0.1309894	total: 2.57s	remaining: 75.5ms
68:	learn: 0.1303127	total: 2.6s	remaining: 37.7ms
69:	learn: 0.1293494	total: 2.64s	remaining: 0us
0:	learn: 0.6386549	total: 39.1ms	remaining: 2.7s
1:	learn: 0.5794667	total: 73.5ms	remaining: 2.5s
2:	learn: 0.5350597	total: 108ms	remaining: 2.4s
3:	learn: 0.4902950	total: 150ms	remaining: 2.48s
4:	learn: 0.4542138	total: 184ms	remaining: 2.39s
5:	learn: 0.4276605	total: 220ms	remaining: 2.34s
6:	learn: 0.4042525	total: 262ms	remaining: 2.36s
7:	learn: 0.3819469	total: 297ms	remaining: 2.3s
8:	learn: 0.3594459	total: 333ms	remaining: 2.25s
9:	learn: 0.3372844	total: 368ms	remaining: 2.21s
10:	learn: 0.3195579	total: 404ms	remaining: 2.17s
11:	learn: 0.3025844	total: 440ms	remaining: 2.12s
12:	learn: 0.2914362	total: 487ms	remaining: 2.13s
13:	learn: 0.2812717	total: 522ms	remaining: 2.09s
14:	learn: 0.2681212	total: 558ms	remaining: 2.04s
15:	learn: 0.2576900	total: 594ms	remaining: 2s
16:	learn: 0.2477187	total: 631ms	remaining: 1.97s
17:	learn: 0.2396752	total: 667ms	remaining: 1.93s
18:	learn: 0.2331245	total: 711ms	remaining: 1.91s
19:	learn: 0.2258934	total: 746ms	remaining: 1.87s
20:	learn: 0.2202542	total: 782ms	remaining: 1.82s
21:	learn: 0.2158870	total: 822ms	remaining: 1.79s
22:	learn: 0.2099379	total: 858ms	remaining: 1.75s
23:	learn: 0.2056097	total: 893ms	remaining: 1.71s
24:	learn: 0.2019088	total: 938ms	remaining: 1.69s
25:	learn: 0.1984477	total: 973ms	remaining: 1.65s
26:	learn: 0.1953531	total: 1.01s	remaining: 1.6s
27:	learn: 0.1919639	total: 1.04s	remaining: 1.56s
28:	learn: 0.1886041	total: 1.08s	remaining: 1.52s
29:	learn: 0.1851554	total: 1.11s	remaining: 1.48s
30:	learn: 0.1823516	total: 1.16s	remaining: 1.46s
31:	learn: 0.1794975	total: 1.2s	remaining: 1.42s
32:	learn: 0.1772368	total: 1.23s	remaining: 1.38s
33:	learn: 0.1736062	total: 1.27s	remaining: 1.34s
34:	learn: 0.1703676	total: 1.3s	remaining: 1.3s
35:	learn: 0.1690795	total: 1.34s	remaining: 1.26s
36:	learn: 0.1662960	total: 1.38s	remaining: 1.23s
37:	learn: 0.1643045	total: 1.42s	remaining: 1.2s
38:	learn: 0.1625412	total: 1.46s	remaining: 1.16s
39:	learn: 0.1609807	total: 1.49s	remaining: 1.12s
40:	learn: 0.1600736	total: 1.51s	remaining: 1.07s
41:	learn: 0.1586133	total: 1.54s	remaining: 1.03s
42:	learn: 0.1576141	total: 1.58s	remaining: 993ms

43:	learn: 0.1556886	total: 1.62s	remaining: 960ms
44:	learn: 0.1543002	total: 1.66s	remaining: 922ms
45:	learn: 0.1531071	total: 1.7s	remaining: 887ms
46:	learn: 0.1513682	total: 1.74s	remaining: 854ms
47:	learn: 0.1499784	total: 1.78s	remaining: 818ms
48:	learn: 0.1486980	total: 1.82s	remaining: 782ms
49:	learn: 0.1478048	total: 1.86s	remaining: 745ms
50:	learn: 0.1467731	total: 1.9s	remaining: 706ms
51:	learn: 0.1458016	total: 1.93s	remaining: 669ms
52:	learn: 0.1448808	total: 1.97s	remaining: 633ms
53:	learn: 0.1439293	total: 2.01s	remaining: 597ms
54:	learn: 0.1432615	total: 2.05s	remaining: 559ms
55:	learn: 0.1427114	total: 2.09s	remaining: 522ms
56:	learn: 0.1413225	total: 2.12s	remaining: 484ms
57:	learn: 0.1402600	total: 2.17s	remaining: 449ms
58:	learn: 0.1397467	total: 2.2s	remaining: 411ms
59:	learn: 0.1388832	total: 2.25s	remaining: 375ms
60:	learn: 0.1382990	total: 2.28s	remaining: 337ms
61:	learn: 0.1371017	total: 2.32s	remaining: 299ms
62:	learn: 0.1365238	total: 2.35s	remaining: 262ms
63:	learn: 0.1355235	total: 2.39s	remaining: 224ms
64:	learn: 0.1345921	total: 2.42s	remaining: 187ms
65:	learn: 0.1329527	total: 2.47s	remaining: 150ms
66:	learn: 0.1316435	total: 2.51s	remaining: 112ms
67:	learn: 0.1309579	total: 2.54s	remaining: 74.8ms
68:	learn: 0.1301546	total: 2.58s	remaining: 37.4ms
69:	learn: 0.1298815	total: 2.6s	remaining: 0us
0:	learn: 0.6374431	total: 36.4ms	remaining: 2.51s
1:	learn: 0.5752510	total: 73.6ms	remaining: 2.5s
2:	learn: 0.5299881	total: 110ms	remaining: 2.46s
3:	learn: 0.4868399	total: 146ms	remaining: 2.41s
4:	learn: 0.4476466	total: 182ms	remaining: 2.37s
5:	learn: 0.4194563	total: 218ms	remaining: 2.33s
6:	learn: 0.3957873	total: 262ms	remaining: 2.36s
7:	learn: 0.3706250	total: 298ms	remaining: 2.31s
8:	learn: 0.3433542	total: 334ms	remaining: 2.27s
9:	learn: 0.3192400	total: 371ms	remaining: 2.22s
10:	learn: 0.3003060	total: 407ms	remaining: 2.18s
11:	learn: 0.2837023	total: 453ms	remaining: 2.19s
12:	learn: 0.2738870	total: 502ms	remaining: 2.2s
13:	learn: 0.2590565	total: 537ms	remaining: 2.15s
14:	learn: 0.2509095	total: 573ms	remaining: 2.1s
15:	learn: 0.2417859	total: 608ms	remaining: 2.05s
16:	learn: 0.2320056	total: 643ms	remaining: 2s
17:	learn: 0.2246093	total: 678ms	remaining: 1.96s
18:	learn: 0.2181759	total: 723ms	remaining: 1.94s
19:	learn: 0.2108050	total: 759ms	remaining: 1.9s
20:	learn: 0.2034753	total: 794ms	remaining: 1.85s
21:	learn: 0.1992330	total: 829ms	remaining: 1.81s
22:	learn: 0.1932955	total: 864ms	remaining: 1.77s
23:	learn: 0.1896366	total: 900ms	remaining: 1.72s
24:	learn: 0.1862890	total: 941ms	remaining: 1.69s
25:	learn: 0.1832150	total: 976ms	remaining: 1.65s
26:	learn: 0.1790708	total: 1.01s	remaining: 1.62s
27:	learn: 0.1757052	total: 1.05s	remaining: 1.57s
28:	learn: 0.1729793	total: 1.09s	remaining: 1.54s
29:	learn: 0.1698562	total: 1.12s	remaining: 1.5s
30:	learn: 0.1674814	total: 1.17s	remaining: 1.47s
31:	learn: 0.1639651	total: 1.21s	remaining: 1.44s
32:	learn: 0.1622546	total: 1.25s	remaining: 1.4s
33:	learn: 0.1598741	total: 1.28s	remaining: 1.36s
34:	learn: 0.1568186	total: 1.32s	remaining: 1.32s
35:	learn: 0.1554774	total: 1.32s	remaining: 1.25s
36:	learn: 0.1524067	total: 1.36s	remaining: 1.21s
37:	learn: 0.1497032	total: 1.41s	remaining: 1.18s
38:	learn: 0.1482602	total: 1.45s	remaining: 1.15s
39:	learn: 0.1463871	total: 1.48s	remaining: 1.11s
40:	learn: 0.1441313	total: 1.52s	remaining: 1.07s
41:	learn: 0.1420593	total: 1.56s	remaining: 1.04s
42:	learn: 0.1406964	total: 1.59s	remaining: 999ms
43:	learn: 0.1387918	total: 1.64s	remaining: 966ms
44:	learn: 0.1373152	total: 1.67s	remaining: 928ms
45:	learn: 0.1362762	total: 1.71s	remaining: 890ms
46:	learn: 0.1348280	total: 1.74s	remaining: 852ms
47:	learn: 0.1332868	total: 1.77s	remaining: 814ms
48:	learn: 0.1315807	total: 1.81s	remaining: 775ms
49:	learn: 0.1310403	total: 1.85s	remaining: 741ms
50:	learn: 0.1302947	total: 1.89s	remaining: 704ms
51:	learn: 0.1296517	total: 1.93s	remaining: 667ms
52:	learn: 0.1283217	total: 1.96s	remaining: 629ms
53:	learn: 0.1269866	total: 2s	remaining: 592ms
54:	learn: 0.1264353	total: 2.03s	remaining: 554ms
55:	learn: 0.1258286	total: 2.08s	remaining: 520ms
56:	learn: 0.1253112	total: 2.11s	remaining: 482ms
57:	learn: 0.1246537	total: 2.15s	remaining: 445ms
58:	learn: 0.1243764	total: 2.19s	remaining: 408ms
59:	learn: 0.1226823	total: 2.22s	remaining: 371ms
60:	learn: 0.1212926	total: 2.26s	remaining: 333ms
61:	learn: 0.1205019	total: 2.3s	remaining: 297ms
62:	learn: 0.1195329	total: 2.34s	remaining: 260ms
63:	learn: 0.1183307	total: 2.37s	remaining: 223ms
64:	learn: 0.1171004	total: 2.41s	remaining: 185ms
65:	learn: 0.1160221	total: 2.45s	remaining: 149ms
66:	learn: 0.1146497	total: 2.49s	remaining: 111ms
67:	learn: 0.1137710	total: 2.53s	remaining: 74.5ms
68:	learn: 0.1132005	total: 2.57s	remaining: 37.3ms
69:	learn: 0.1124286	total: 2.61s	remaining: 0us
0:	learn: 0.6372622	total: 44.6ms	remaining: 3.08s
1:	learn: 0.5821484	total: 80.6ms	remaining: 2.74s
2:	learn: 0.5311700	total: 117ms	remaining: 2.62s
3:	learn: 0.4847543	total: 154ms	remaining: 2.54s
4:	learn: 0.4424854	total: 190ms	remaining: 2.47s

5:	learn: 0.4155755	total: 226ms	remaining: 2.4s
6:	learn: 0.3923856	total: 270ms	remaining: 2.43s
7:	learn: 0.3672231	total: 306ms	remaining: 2.37s
8:	learn: 0.3396370	total: 342ms	remaining: 2.32s
9:	learn: 0.3190827	total: 378ms	remaining: 2.27s
10:	learn: 0.3014143	total: 413ms	remaining: 2.22s
11:	learn: 0.2851881	total: 448ms	remaining: 2.17s
12:	learn: 0.2731118	total: 492ms	remaining: 2.16s
13:	learn: 0.2589528	total: 528ms	remaining: 2.11s
14:	learn: 0.2477758	total: 564ms	remaining: 2.07s
15:	learn: 0.2378747	total: 600ms	remaining: 2.02s
16:	learn: 0.2285734	total: 635ms	remaining: 1.98s
17:	learn: 0.2202184	total: 670ms	remaining: 1.94s
18:	learn: 0.2134150	total: 724ms	remaining: 1.94s
19:	learn: 0.2059357	total: 759ms	remaining: 1.9s
20:	learn: 0.1996082	total: 794ms	remaining: 1.85s
21:	learn: 0.1955997	total: 829ms	remaining: 1.81s
22:	learn: 0.1921818	total: 864ms	remaining: 1.77s
23:	learn: 0.1884246	total: 900ms	remaining: 1.73s
24:	learn: 0.1851933	total: 942ms	remaining: 1.7s
25:	learn: 0.1828785	total: 980ms	remaining: 1.66s
26:	learn: 0.1801108	total: 1.01s	remaining: 1.62s
27:	learn: 0.1770605	total: 1.05s	remaining: 1.58s
28:	learn: 0.1740757	total: 1.09s	remaining: 1.54s
29:	learn: 0.1711643	total: 1.13s	remaining: 1.51s
30:	learn: 0.1677197	total: 1.18s	remaining: 1.48s
31:	learn: 0.1647914	total: 1.21s	remaining: 1.44s
32:	learn: 0.1619562	total: 1.25s	remaining: 1.4s
33:	learn: 0.1599197	total: 1.28s	remaining: 1.36s
34:	learn: 0.1581559	total: 1.32s	remaining: 1.32s
35:	learn: 0.1565452	total: 1.36s	remaining: 1.28s
36:	learn: 0.1539540	total: 1.4s	remaining: 1.25s
37:	learn: 0.1519285	total: 1.43s	remaining: 1.21s
38:	learn: 0.1501880	total: 1.47s	remaining: 1.17s
39:	learn: 0.1477981	total: 1.5s	remaining: 1.13s
40:	learn: 0.1458797	total: 1.54s	remaining: 1.09s
41:	learn: 0.1442349	total: 1.57s	remaining: 1.05s
42:	learn: 0.1420435	total: 1.62s	remaining: 1.02s
43:	learn: 0.1403873	total: 1.66s	remaining: 982ms
44:	learn: 0.1395320	total: 1.7s	remaining: 944ms
45:	learn: 0.1390222	total: 1.74s	remaining: 910ms
46:	learn: 0.1372055	total: 1.78s	remaining: 871ms
47:	learn: 0.1355598	total: 1.82s	remaining: 833ms
48:	learn: 0.1339611	total: 1.86s	remaining: 799ms
49:	learn: 0.1322620	total: 1.9s	remaining: 761ms
50:	learn: 0.1306658	total: 1.94s	remaining: 722ms
51:	learn: 0.1293790	total: 1.97s	remaining: 683ms
52:	learn: 0.1285210	total: 2.01s	remaining: 645ms
53:	learn: 0.1275680	total: 2.04s	remaining: 606ms
54:	learn: 0.1266398	total: 2.09s	remaining: 570ms
55:	learn: 0.1259895	total: 2.12s	remaining: 531ms
56:	learn: 0.1249748	total: 2.16s	remaining: 493ms
57:	learn: 0.1246202	total: 2.2s	remaining: 454ms
58:	learn: 0.1241579	total: 2.23s	remaining: 416ms
59:	learn: 0.1234748	total: 2.27s	remaining: 378ms
60:	learn: 0.1223103	total: 2.31s	remaining: 341ms
61:	learn: 0.1212888	total: 2.35s	remaining: 303ms
62:	learn: 0.1204776	total: 2.38s	remaining: 265ms
63:	learn: 0.1193016	total: 2.42s	remaining: 227ms
64:	learn: 0.1181517	total: 2.45s	remaining: 189ms
65:	learn: 0.1171216	total: 2.49s	remaining: 151ms
66:	learn: 0.1169030	total: 2.54s	remaining: 114ms
67:	learn: 0.1154282	total: 2.57s	remaining: 75.7ms
68:	learn: 0.1143278	total: 2.61s	remaining: 37.8ms
69:	learn: 0.1131315	total: 2.65s	remaining: 0us
0:	learn: 0.6791407	total: 37.3ms	remaining: 2.95s
1:	learn: 0.6627167	total: 72.1ms	remaining: 2.81s
2:	learn: 0.6477791	total: 108ms	remaining: 2.76s
3:	learn: 0.6325852	total: 143ms	remaining: 2.72s
4:	learn: 0.6181110	total: 179ms	remaining: 2.68s
5:	learn: 0.6063451	total: 224ms	remaining: 2.76s
6:	learn: 0.5923132	total: 269ms	remaining: 2.81s
7:	learn: 0.5801042	total: 304ms	remaining: 2.74s
8:	learn: 0.5684541	total: 339ms	remaining: 2.68s
9:	learn: 0.5560049	total: 375ms	remaining: 2.62s
10:	learn: 0.5442222	total: 410ms	remaining: 2.57s
11:	learn: 0.5324515	total: 445ms	remaining: 2.52s
12:	learn: 0.5232732	total: 487ms	remaining: 2.51s
13:	learn: 0.5117062	total: 527ms	remaining: 2.48s
14:	learn: 0.5006558	total: 563ms	remaining: 2.44s
15:	learn: 0.4921673	total: 599ms	remaining: 2.4s
16:	learn: 0.4836199	total: 619ms	remaining: 2.29s
17:	learn: 0.4748627	total: 654ms	remaining: 2.25s
18:	learn: 0.4667168	total: 694ms	remaining: 2.23s
19:	learn: 0.4578206	total: 734ms	remaining: 2.2s
20:	learn: 0.4486854	total: 769ms	remaining: 2.16s
21:	learn: 0.4410347	total: 805ms	remaining: 2.12s
22:	learn: 0.4325364	total: 839ms	remaining: 2.08s
23:	learn: 0.4265464	total: 874ms	remaining: 2.04s
24:	learn: 0.4200699	total: 919ms	remaining: 2.02s
25:	learn: 0.4142384	total: 959ms	remaining: 1.99s
26:	learn: 0.4072413	total: 995ms	remaining: 1.95s
27:	learn: 0.4009872	total: 1.03s	remaining: 1.92s
28:	learn: 0.3952050	total: 1.07s	remaining: 1.88s
29:	learn: 0.3889355	total: 1.1s	remaining: 1.84s
30:	learn: 0.3837602	total: 1.15s	remaining: 1.81s
31:	learn: 0.3779735	total: 1.18s	remaining: 1.77s
32:	learn: 0.3716509	total: 1.22s	remaining: 1.73s
33:	learn: 0.3658556	total: 1.25s	remaining: 1.69s
34:	learn: 0.3601986	total: 1.28s	remaining: 1.65s
35:	learn: 0.3556856	total: 1.32s	remaining: 1.61s
36:	learn: 0.3506903	total: 1.36s	remaining: 1.58s

37:	learn: 0.3454717	total: 1.4s	remaining: 1.54s
38:	learn: 0.3400025	total: 1.43s	remaining: 1.5s
39:	learn: 0.3359606	total: 1.46s	remaining: 1.46s
40:	learn: 0.3319888	total: 1.5s	remaining: 1.43s
41:	learn: 0.3281915	total: 1.53s	remaining: 1.39s
42:	learn: 0.3234134	total: 1.58s	remaining: 1.36s
43:	learn: 0.3196161	total: 1.62s	remaining: 1.33s
44:	learn: 0.3148530	total: 1.66s	remaining: 1.29s
45:	learn: 0.3105316	total: 1.7s	remaining: 1.25s
46:	learn: 0.3072915	total: 1.73s	remaining: 1.22s
47:	learn: 0.3028888	total: 1.77s	remaining: 1.18s
48:	learn: 0.2997492	total: 1.82s	remaining: 1.15s
49:	learn: 0.2963930	total: 1.86s	remaining: 1.11s
50:	learn: 0.2936002	total: 1.89s	remaining: 1.08s
51:	learn: 0.2905221	total: 1.93s	remaining: 1.04s
52:	learn: 0.2868780	total: 1.97s	remaining: 1s
53:	learn: 0.2836925	total: 2.01s	remaining: 967ms
54:	learn: 0.2817627	total: 2.01s	remaining: 914ms
55:	learn: 0.2791311	total: 2.06s	remaining: 881ms
56:	learn: 0.2758002	total: 2.1s	remaining: 845ms
57:	learn: 0.2733280	total: 2.13s	remaining: 808ms
58:	learn: 0.2711165	total: 2.17s	remaining: 771ms
59:	learn: 0.2685101	total: 2.2s	remaining: 734ms
60:	learn: 0.2664084	total: 2.24s	remaining: 696ms
61:	learn: 0.2635878	total: 2.28s	remaining: 661ms
62:	learn: 0.2611837	total: 2.31s	remaining: 624ms
63:	learn: 0.2587031	total: 2.35s	remaining: 587ms
64:	learn: 0.2560294	total: 2.38s	remaining: 550ms
65:	learn: 0.2534400	total: 2.42s	remaining: 513ms
66:	learn: 0.2509306	total: 2.45s	remaining: 475ms
67:	learn: 0.2490825	total: 2.49s	remaining: 440ms
68:	learn: 0.2474467	total: 2.53s	remaining: 403ms
69:	learn: 0.2453682	total: 2.57s	remaining: 367ms
70:	learn: 0.2436531	total: 2.59s	remaining: 328ms
71:	learn: 0.2412899	total: 2.62s	remaining: 291ms
72:	learn: 0.2396590	total: 2.66s	remaining: 255ms
73:	learn: 0.2380467	total: 2.69s	remaining: 218ms
74:	learn: 0.2360038	total: 2.73s	remaining: 182ms
75:	learn: 0.2340706	total: 2.77s	remaining: 146ms
76:	learn: 0.2320108	total: 2.81s	remaining: 109ms
77:	learn: 0.2305639	total: 2.84s	remaining: 72.8ms
78:	learn: 0.2291253	total: 2.87s	remaining: 36.4ms
79:	learn: 0.2277258	total: 2.92s	remaining: 0us
0:	learn: 0.6788236	total: 35.7ms	remaining: 2.82s
1:	learn: 0.6615390	total: 70.5ms	remaining: 2.75s
2:	learn: 0.6457778	total: 114ms	remaining: 2.93s
3:	learn: 0.6310168	total: 150ms	remaining: 2.85s
4:	learn: 0.6156249	total: 184ms	remaining: 2.77s
5:	learn: 0.5990069	total: 219ms	remaining: 2.7s
6:	learn: 0.5880764	total: 257ms	remaining: 2.68s
7:	learn: 0.5752112	total: 292ms	remaining: 2.63s
8:	learn: 0.5622940	total: 334ms	remaining: 2.64s
9:	learn: 0.5482712	total: 369ms	remaining: 2.58s
10:	learn: 0.5354771	total: 403ms	remaining: 2.53s
11:	learn: 0.5231399	total: 438ms	remaining: 2.48s
12:	learn: 0.5138478	total: 472ms	remaining: 2.43s
13:	learn: 0.5010520	total: 507ms	remaining: 2.39s
14:	learn: 0.4894648	total: 548ms	remaining: 2.37s
15:	learn: 0.4806031	total: 586ms	remaining: 2.34s
16:	learn: 0.4716255	total: 605ms	remaining: 2.24s
17:	learn: 0.4629426	total: 641ms	remaining: 2.21s
18:	learn: 0.4543146	total: 676ms	remaining: 2.17s
19:	learn: 0.4450274	total: 711ms	remaining: 2.13s
20:	learn: 0.4360269	total: 751ms	remaining: 2.11s
21:	learn: 0.4288315	total: 791ms	remaining: 2.09s
22:	learn: 0.4198105	total: 826ms	remaining: 2.04s
23:	learn: 0.4137630	total: 861ms	remaining: 2.01s
24:	learn: 0.4069434	total: 895ms	remaining: 1.97s
25:	learn: 0.4010151	total: 938ms	remaining: 1.95s
26:	learn: 0.3921870	total: 982ms	remaining: 1.93s
27:	learn: 0.3856900	total: 1.02s	remaining: 1.89s
28:	learn: 0.3794459	total: 1.05s	remaining: 1.85s
29:	learn: 0.3734359	total: 1.09s	remaining: 1.82s
30:	learn: 0.3676631	total: 1.14s	remaining: 1.81s
31:	learn: 0.3600506	total: 1.18s	remaining: 1.77s
32:	learn: 0.3547393	total: 1.23s	remaining: 1.75s
33:	learn: 0.3490570	total: 1.26s	remaining: 1.71s
34:	learn: 0.3434171	total: 1.3s	remaining: 1.67s
35:	learn: 0.3388457	total: 1.34s	remaining: 1.64s
36:	learn: 0.3329704	total: 1.38s	remaining: 1.6s
37:	learn: 0.3275250	total: 1.41s	remaining: 1.56s
38:	learn: 0.3233160	total: 1.46s	remaining: 1.53s
39:	learn: 0.3194589	total: 1.49s	remaining: 1.49s
40:	learn: 0.3153729	total: 1.53s	remaining: 1.45s
41:	learn: 0.3118610	total: 1.56s	remaining: 1.42s
42:	learn: 0.3068602	total: 1.6s	remaining: 1.38s
43:	learn: 0.3034702	total: 1.64s	remaining: 1.34s
44:	learn: 0.3001024	total: 1.68s	remaining: 1.31s
45:	learn: 0.2954749	total: 1.72s	remaining: 1.27s
46:	learn: 0.2923391	total: 1.75s	remaining: 1.23s
47:	learn: 0.2874109	total: 1.79s	remaining: 1.19s
48:	learn: 0.2848988	total: 1.83s	remaining: 1.16s
49:	learn: 0.2811443	total: 1.86s	remaining: 1.12s
50:	learn: 0.2782434	total: 1.91s	remaining: 1.08s
51:	learn: 0.2747128	total: 1.95s	remaining: 1.05s
52:	learn: 0.2711399	total: 1.98s	remaining: 1.01s
53:	learn: 0.2677238	total: 2.02s	remaining: 972ms
54:	learn: 0.2643356	total: 2.05s	remaining: 934ms
55:	learn: 0.2611250	total: 2.09s	remaining: 896ms
56:	learn: 0.2582440	total: 2.13s	remaining: 862ms
57:	learn: 0.2552127	total: 2.17s	remaining: 823ms
58:	learn: 0.2523571	total: 2.2s	remaining: 784ms

59:	learn: 0.2500531	total: 2.24s	remaining: 746ms
60:	learn: 0.2475371	total: 2.27s	remaining: 708ms
61:	learn: 0.2444658	total: 2.31s	remaining: 670ms
62:	learn: 0.2417350	total: 2.35s	remaining: 635ms
63:	learn: 0.2396821	total: 2.39s	remaining: 597ms
64:	learn: 0.2369638	total: 2.42s	remaining: 559ms
65:	learn: 0.2353972	total: 2.46s	remaining: 521ms
66:	learn: 0.2334873	total: 2.49s	remaining: 483ms
67:	learn: 0.2310926	total: 2.52s	remaining: 446ms
68:	learn: 0.2285355	total: 2.57s	remaining: 410ms
69:	learn: 0.2263587	total: 2.6s	remaining: 372ms
70:	learn: 0.2241709	total: 2.64s	remaining: 335ms
71:	learn: 0.2224292	total: 2.68s	remaining: 298ms
72:	learn: 0.2207751	total: 2.71s	remaining: 260ms
73:	learn: 0.2185800	total: 2.75s	remaining: 223ms
74:	learn: 0.2167469	total: 2.79s	remaining: 186ms
75:	learn: 0.2154204	total: 2.83s	remaining: 149ms
76:	learn: 0.2139871	total: 2.86s	remaining: 112ms
77:	learn: 0.2129553	total: 2.9s	remaining: 74.3ms
78:	learn: 0.2111018	total: 2.93s	remaining: 37.1ms
79:	learn: 0.2092030	total: 2.98s	remaining: 0us
0:	learn: 0.6787769	total: 36.8ms	remaining: 2.9s
1:	learn: 0.6633095	total: 73.3ms	remaining: 2.86s
2:	learn: 0.6476976	total: 110ms	remaining: 2.81s
3:	learn: 0.6318681	total: 146ms	remaining: 2.77s
4:	learn: 0.6169129	total: 182ms	remaining: 2.73s
5:	learn: 0.6050231	total: 219ms	remaining: 2.7s
6:	learn: 0.5904710	total: 266ms	remaining: 2.77s
7:	learn: 0.5792131	total: 301ms	remaining: 2.71s
8:	learn: 0.5656212	total: 336ms	remaining: 2.65s
9:	learn: 0.5528361	total: 371ms	remaining: 2.6s
10:	learn: 0.5406429	total: 407ms	remaining: 2.55s
11:	learn: 0.5279326	total: 447ms	remaining: 2.53s
12:	learn: 0.5187412	total: 491ms	remaining: 2.53s
13:	learn: 0.5070674	total: 527ms	remaining: 2.48s
14:	learn: 0.4958112	total: 564ms	remaining: 2.44s
15:	learn: 0.4861740	total: 601ms	remaining: 2.4s
16:	learn: 0.4771374	total: 638ms	remaining: 2.36s
17:	learn: 0.4669238	total: 673ms	remaining: 2.32s
18:	learn: 0.4587888	total: 716ms	remaining: 2.3s
19:	learn: 0.4508015	total: 752ms	remaining: 2.25s
20:	learn: 0.4409232	total: 787ms	remaining: 2.21s
21:	learn: 0.4332028	total: 822ms	remaining: 2.17s
22:	learn: 0.4241961	total: 867ms	remaining: 2.15s
23:	learn: 0.4178312	total: 886ms	remaining: 2.07s
24:	learn: 0.4108071	total: 930ms	remaining: 2.04s
25:	learn: 0.4049407	total: 969ms	remaining: 2.01s
26:	learn: 0.3981404	total: 1s	remaining: 1.97s
27:	learn: 0.3910480	total: 1.04s	remaining: 1.93s
28:	learn: 0.3848455	total: 1.08s	remaining: 1.9s
29:	learn: 0.3784674	total: 1.11s	remaining: 1.86s
30:	learn: 0.3722911	total: 1.16s	remaining: 1.83s
31:	learn: 0.3650416	total: 1.2s	remaining: 1.79s
32:	learn: 0.3596298	total: 1.23s	remaining: 1.75s
33:	learn: 0.3535587	total: 1.27s	remaining: 1.72s
34:	learn: 0.3479559	total: 1.3s	remaining: 1.68s
35:	learn: 0.3436314	total: 1.34s	remaining: 1.64s
36:	learn: 0.3386817	total: 1.39s	remaining: 1.61s
37:	learn: 0.3332009	total: 1.42s	remaining: 1.57s
38:	learn: 0.3284626	total: 1.46s	remaining: 1.53s
39:	learn: 0.3243020	total: 1.49s	remaining: 1.49s
40:	learn: 0.3203881	total: 1.53s	remaining: 1.45s
41:	learn: 0.3164657	total: 1.56s	remaining: 1.41s
42:	learn: 0.3115393	total: 1.61s	remaining: 1.39s
43:	learn: 0.3078476	total: 1.65s	remaining: 1.35s
44:	learn: 0.3029053	total: 1.68s	remaining: 1.31s
45:	learn: 0.2979739	total: 1.72s	remaining: 1.27s
46:	learn: 0.2945617	total: 1.75s	remaining: 1.23s
47:	learn: 0.2903203	total: 1.79s	remaining: 1.19s
48:	learn: 0.2874027	total: 1.84s	remaining: 1.16s
49:	learn: 0.2837694	total: 1.88s	remaining: 1.13s
50:	learn: 0.2806973	total: 1.92s	remaining: 1.09s
51:	learn: 0.2774930	total: 1.96s	remaining: 1.05s
52:	learn: 0.2738758	total: 1.99s	remaining: 1.01s
53:	learn: 0.2708897	total: 2.03s	remaining: 976ms
54:	learn: 0.2688938	total: 2.03s	remaining: 923ms
55:	learn: 0.2653052	total: 2.07s	remaining: 888ms
56:	learn: 0.2627639	total: 2.11s	remaining: 850ms
57:	learn: 0.2598077	total: 2.14s	remaining: 813ms
58:	learn: 0.2571972	total: 2.18s	remaining: 775ms
59:	learn: 0.2549447	total: 2.21s	remaining: 738ms
60:	learn: 0.2523222	total: 2.25s	remaining: 700ms
61:	learn: 0.2493011	total: 2.29s	remaining: 666ms
62:	learn: 0.2475206	total: 2.33s	remaining: 629ms
63:	learn: 0.2451392	total: 2.37s	remaining: 592ms
64:	learn: 0.2425483	total: 2.4s	remaining: 555ms
65:	learn: 0.2403360	total: 2.44s	remaining: 518ms
66:	learn: 0.2378210	total: 2.48s	remaining: 481ms
67:	learn: 0.2363876	total: 2.52s	remaining: 445ms
68:	learn: 0.2347327	total: 2.56s	remaining: 408ms
69:	learn: 0.2325688	total: 2.6s	remaining: 371ms
70:	learn: 0.2302148	total: 2.64s	remaining: 334ms
71:	learn: 0.2283729	total: 2.67s	remaining: 297ms
72:	learn: 0.2268576	total: 2.71s	remaining: 260ms
73:	learn: 0.2253032	total: 2.75s	remaining: 223ms
74:	learn: 0.2232964	total: 2.79s	remaining: 186ms
75:	learn: 0.2211278	total: 2.83s	remaining: 149ms
76:	learn: 0.2193355	total: 2.87s	remaining: 112ms
77:	learn: 0.2176989	total: 2.9s	remaining: 74.4ms
78:	learn: 0.2164480	total: 2.94s	remaining: 37.2ms
79:	learn: 0.2152935	total: 2.98s	remaining: 0us
0:	learn: 0.6653901	total: 34.3ms	remaining: 2.71s



1:	learn: 0.6337522	total: 71.6ms	remaining: 2.79s
2:	learn: 0.6059190	total: 115ms	remaining: 2.94s
3:	learn: 0.5785004	total: 150ms	remaining: 2.86s
4:	learn: 0.5523715	total: 186ms	remaining: 2.79s
5:	learn: 0.5326429	total: 222ms	remaining: 2.73s
6:	learn: 0.5151196	total: 257ms	remaining: 2.68s
7:	learn: 0.4976233	total: 292ms	remaining: 2.63s
8:	learn: 0.4794307	total: 338ms	remaining: 2.67s
9:	learn: 0.4605170	total: 372ms	remaining: 2.6s
10:	learn: 0.4439954	total: 407ms	remaining: 2.55s
11:	learn: 0.4271142	total: 441ms	remaining: 2.5s
12:	learn: 0.4146596	total: 475ms	remaining: 2.45s
13:	learn: 0.3991062	total: 510ms	remaining: 2.4s
14:	learn: 0.3847093	total: 551ms	remaining: 2.39s
15:	learn: 0.3733216	total: 586ms	remaining: 2.35s
16:	learn: 0.3624527	total: 605ms	remaining: 2.24s
17:	learn: 0.3520358	total: 640ms	remaining: 2.2s
18:	learn: 0.3420739	total: 674ms	remaining: 2.17s
19:	learn: 0.3324052	total: 709ms	remaining: 2.13s
20:	learn: 0.3215518	total: 744ms	remaining: 2.09s
21:	learn: 0.3134324	total: 798ms	remaining: 2.1s
22:	learn: 0.3048180	total: 835ms	remaining: 2.07s
23:	learn: 0.2991114	total: 870ms	remaining: 2.03s
24:	learn: 0.2939805	total: 905ms	remaining: 1.99s
25:	learn: 0.2887437	total: 940ms	remaining: 1.95s
26:	learn: 0.2827361	total: 978ms	remaining: 1.92s
27:	learn: 0.2770809	total: 1.02s	remaining: 1.9s
28:	learn: 0.2719442	total: 1.06s	remaining: 1.86s
29:	learn: 0.2663294	total: 1.09s	remaining: 1.82s
30:	learn: 0.2614419	total: 1.13s	remaining: 1.78s
31:	learn: 0.2555074	total: 1.16s	remaining: 1.75s
32:	learn: 0.2505669	total: 1.2s	remaining: 1.71s
33:	learn: 0.2465351	total: 1.24s	remaining: 1.68s
34:	learn: 0.2421552	total: 1.28s	remaining: 1.64s
35:	learn: 0.2390454	total: 1.31s	remaining: 1.6s
36:	learn: 0.2353690	total: 1.35s	remaining: 1.57s
37:	learn: 0.2319378	total: 1.39s	remaining: 1.53s
38:	learn: 0.2293074	total: 1.42s	remaining: 1.5s
39:	learn: 0.2265773	total: 1.47s	remaining: 1.47s
40:	learn: 0.2239044	total: 1.51s	remaining: 1.44s
41:	learn: 0.2214810	total: 1.54s	remaining: 1.4s
42:	learn: 0.2180881	total: 1.58s	remaining: 1.36s
43:	learn: 0.2154749	total: 1.62s	remaining: 1.32s
44:	learn: 0.2122523	total: 1.65s	remaining: 1.28s
45:	learn: 0.2091643	total: 1.7s	remaining: 1.25s
46:	learn: 0.2073426	total: 1.73s	remaining: 1.22s
47:	learn: 0.2043621	total: 1.78s	remaining: 1.18s
48:	learn: 0.2018468	total: 1.81s	remaining: 1.15s
49:	learn: 0.1990600	total: 1.85s	remaining: 1.11s
50:	learn: 0.1975180	total: 1.88s	remaining: 1.07s
51:	learn: 0.1953713	total: 1.92s	remaining: 1.04s
52:	learn: 0.1931717	total: 1.96s	remaining: 999ms
53:	learn: 0.1910559	total: 2s	remaining: 963ms
54:	learn: 0.1893376	total: 2.04s	remaining: 925ms
55:	learn: 0.1875357	total: 2.07s	remaining: 887ms
56:	learn: 0.1856776	total: 2.11s	remaining: 850ms
57:	learn: 0.1841191	total: 2.15s	remaining: 816ms
58:	learn: 0.1830692	total: 2.19s	remaining: 779ms
59:	learn: 0.1820441	total: 2.22s	remaining: 741ms
60:	learn: 0.1809230	total: 2.26s	remaining: 703ms
61:	learn: 0.1797689	total: 2.29s	remaining: 665ms
62:	learn: 0.1785858	total: 2.33s	remaining: 628ms
63:	learn: 0.1777054	total: 2.37s	remaining: 593ms
64:	learn: 0.1762272	total: 2.4s	remaining: 555ms
65:	learn: 0.1751500	total: 2.44s	remaining: 518ms
66:	learn: 0.1736805	total: 2.47s	remaining: 480ms
67:	learn: 0.1725445	total: 2.51s	remaining: 443ms
68:	learn: 0.1710556	total: 2.54s	remaining: 406ms
69:	learn: 0.1699374	total: 2.59s	remaining: 370ms
70:	learn: 0.1686846	total: 2.63s	remaining: 333ms
71:	learn: 0.1674237	total: 2.66s	remaining: 296ms
72:	learn: 0.1661013	total: 2.7s	remaining: 259ms
73:	learn: 0.1651333	total: 2.74s	remaining: 222ms
74:	learn: 0.1641162	total: 2.78s	remaining: 185ms
75:	learn: 0.1634472	total: 2.83s	remaining: 149ms
76:	learn: 0.1627456	total: 2.86s	remaining: 112ms
77:	learn: 0.1617878	total: 2.9s	remaining: 74.3ms
78:	learn: 0.1611872	total: 2.93s	remaining: 37.1ms
79:	learn: 0.1603547	total: 2.97s	remaining: 0us
0:	learn: 0.6647653	total: 36.6ms	remaining: 2.89s
1:	learn: 0.6308751	total: 71.8ms	remaining: 2.8s
2:	learn: 0.6045444	total: 107ms	remaining: 2.74s
3:	learn: 0.5778500	total: 141ms	remaining: 2.69s
4:	learn: 0.5508174	total: 176ms	remaining: 2.64s
5:	learn: 0.5277074	total: 211ms	remaining: 2.61s
6:	learn: 0.5098412	total: 255ms	remaining: 2.65s
7:	learn: 0.4901300	total: 291ms	remaining: 2.62s
8:	learn: 0.4681178	total: 327ms	remaining: 2.58s
9:	learn: 0.4470315	total: 362ms	remaining: 2.54s
10:	learn: 0.4286698	total: 399ms	remaining: 2.5s
11:	learn: 0.4115424	total: 435ms	remaining: 2.46s
12:	learn: 0.3992533	total: 484ms	remaining: 2.49s
13:	learn: 0.3823769	total: 523ms	remaining: 2.47s
14:	learn: 0.3677396	total: 559ms	remaining: 2.42s
15:	learn: 0.3571496	total: 594ms	remaining: 2.38s
16:	learn: 0.3461820	total: 614ms	remaining: 2.27s
17:	learn: 0.3360846	total: 650ms	remaining: 2.24s
18:	learn: 0.3265848	total: 701ms	remaining: 2.25s
19:	learn: 0.3167481	total: 736ms	remaining: 2.21s
20:	learn: 0.3058838	total: 771ms	remaining: 2.16s
21:	learn: 0.2992202	total: 806ms	remaining: 2.12s
22:	learn: 0.2896502	total: 842ms	remaining: 2.08s

23:	learn: 0.2836389	total: 877ms	remaining: 2.05s
24:	learn: 0.2773137	total: 924ms	remaining: 2.03s
25:	learn: 0.2722424	total: 959ms	remaining: 1.99s
26:	learn: 0.2664217	total: 995ms	remaining: 1.95s
27:	learn: 0.2609737	total: 1.03s	remaining: 1.92s
28:	learn: 0.2558042	total: 1.07s	remaining: 1.88s
29:	learn: 0.2502955	total: 1.1s	remaining: 1.84s
30:	learn: 0.2461421	total: 1.15s	remaining: 1.81s
31:	learn: 0.2397970	total: 1.18s	remaining: 1.77s
32:	learn: 0.2357047	total: 1.22s	remaining: 1.74s
33:	learn: 0.2310688	total: 1.25s	remaining: 1.7s
34:	learn: 0.2261689	total: 1.29s	remaining: 1.66s
35:	learn: 0.2231634	total: 1.33s	remaining: 1.62s
36:	learn: 0.2190171	total: 1.38s	remaining: 1.6s
37:	learn: 0.2156113	total: 1.41s	remaining: 1.56s
38:	learn: 0.2115855	total: 1.45s	remaining: 1.52s
39:	learn: 0.2083588	total: 1.48s	remaining: 1.48s
40:	learn: 0.2059316	total: 1.52s	remaining: 1.44s
41:	learn: 0.2029611	total: 1.55s	remaining: 1.4s
42:	learn: 0.1996227	total: 1.59s	remaining: 1.37s
43:	learn: 0.1978244	total: 1.64s	remaining: 1.34s
44:	learn: 0.1944806	total: 1.69s	remaining: 1.32s
45:	learn: 0.1913383	total: 1.73s	remaining: 1.28s
46:	learn: 0.1899906	total: 1.76s	remaining: 1.24s
47:	learn: 0.1875529	total: 1.81s	remaining: 1.2s
48:	learn: 0.1862593	total: 1.85s	remaining: 1.17s
49:	learn: 0.1836222	total: 1.89s	remaining: 1.13s
50:	learn: 0.1813009	total: 1.93s	remaining: 1.09s
51:	learn: 0.1786384	total: 1.96s	remaining: 1.06s
52:	learn: 0.1772126	total: 2s	remaining: 1.02s
53:	learn: 0.1752958	total: 2.05s	remaining: 986ms
54:	learn: 0.1732996	total: 2.08s	remaining: 948ms
55:	learn: 0.1719410	total: 2.12s	remaining: 910ms
56:	learn: 0.1702443	total: 2.16s	remaining: 873ms
57:	learn: 0.1684799	total: 2.2s	remaining: 834ms
58:	learn: 0.1668544	total: 2.24s	remaining: 796ms
59:	learn: 0.1656654	total: 2.28s	remaining: 760ms
60:	learn: 0.1644565	total: 2.33s	remaining: 725ms
61:	learn: 0.1627890	total: 2.37s	remaining: 689ms
62:	learn: 0.1616570	total: 2.41s	remaining: 650ms
63:	learn: 0.1606570	total: 2.44s	remaining: 611ms
64:	learn: 0.1592993	total: 2.48s	remaining: 573ms
65:	learn: 0.1586117	total: 2.53s	remaining: 537ms
66:	learn: 0.1570677	total: 2.57s	remaining: 499ms
67:	learn: 0.1560957	total: 2.61s	remaining: 460ms
68:	learn: 0.1547233	total: 2.64s	remaining: 421ms
69:	learn: 0.1534773	total: 2.69s	remaining: 384ms
70:	learn: 0.1529685	total: 2.73s	remaining: 346ms
71:	learn: 0.1517012	total: 2.77s	remaining: 308ms
72:	learn: 0.1509364	total: 2.81s	remaining: 269ms
73:	learn: 0.1500064	total: 2.84s	remaining: 230ms
74:	learn: 0.1491997	total: 2.88s	remaining: 192ms
75:	learn: 0.1483295	total: 2.92s	remaining: 154ms
76:	learn: 0.1477017	total: 2.96s	remaining: 115ms
77:	learn: 0.1472446	total: 2.99s	remaining: 76.7ms
78:	learn: 0.1465247	total: 3.03s	remaining: 38.4ms
79:	learn: 0.1455177	total: 3.07s	remaining: 0us
0:	learn: 0.6646729	total: 38.3ms	remaining: 3.03s
1:	learn: 0.6348887	total: 76.7ms	remaining: 2.99s
2:	learn: 0.6057415	total: 115ms	remaining: 2.94s
3:	learn: 0.5771231	total: 153ms	remaining: 2.91s
4:	learn: 0.5491032	total: 193ms	remaining: 2.9s
5:	learn: 0.5295906	total: 232ms	remaining: 2.86s
6:	learn: 0.5117232	total: 277ms	remaining: 2.89s
7:	learn: 0.4915744	total: 318ms	remaining: 2.86s
8:	learn: 0.4701710	total: 356ms	remaining: 2.81s
9:	learn: 0.4510586	total: 394ms	remaining: 2.75s
10:	learn: 0.4342654	total: 431ms	remaining: 2.7s
11:	learn: 0.4169922	total: 467ms	remaining: 2.64s
12:	learn: 0.4047689	total: 522ms	remaining: 2.69s
13:	learn: 0.3892958	total: 566ms	remaining: 2.67s
14:	learn: 0.3751923	total: 604ms	remaining: 2.62s
15:	learn: 0.3634858	total: 642ms	remaining: 2.57s
16:	learn: 0.3529017	total: 680ms	remaining: 2.52s
17:	learn: 0.3410812	total: 717ms	remaining: 2.47s
18:	learn: 0.3320536	total: 762ms	remaining: 2.44s
19:	learn: 0.3239706	total: 801ms	remaining: 2.4s
20:	learn: 0.3134735	total: 838ms	remaining: 2.35s
21:	learn: 0.3061444	total: 874ms	remaining: 2.3s
22:	learn: 0.2969195	total: 912ms	remaining: 2.26s
23:	learn: 0.2910119	total: 931ms	remaining: 2.17s
24:	learn: 0.2839389	total: 977ms	remaining: 2.15s
25:	learn: 0.2786662	total: 1.01s	remaining: 2.11s
26:	learn: 0.2728345	total: 1.05s	remaining: 2.07s
27:	learn: 0.2672551	total: 1.09s	remaining: 2.02s
28:	learn: 0.2624970	total: 1.13s	remaining: 1.99s
29:	learn: 0.2553838	total: 1.17s	remaining: 1.95s
30:	learn: 0.2512006	total: 1.22s	remaining: 1.93s
31:	learn: 0.2451399	total: 1.26s	remaining: 1.88s
32:	learn: 0.2404142	total: 1.29s	remaining: 1.84s
33:	learn: 0.2357983	total: 1.33s	remaining: 1.8s
34:	learn: 0.2319253	total: 1.37s	remaining: 1.76s
35:	learn: 0.2290277	total: 1.41s	remaining: 1.72s
36:	learn: 0.2249938	total: 1.45s	remaining: 1.69s
37:	learn: 0.2209740	total: 1.49s	remaining: 1.65s
38:	learn: 0.2179076	total: 1.53s	remaining: 1.61s
39:	learn: 0.2145454	total: 1.57s	remaining: 1.57s
40:	learn: 0.2121858	total: 1.6s	remaining: 1.53s
41:	learn: 0.2082461	total: 1.65s	remaining: 1.49s
42:	learn: 0.2048335	total: 1.69s	remaining: 1.46s
43:	learn: 0.2027585	total: 1.73s	remaining: 1.42s
44:	learn: 0.1992589	total: 1.77s	remaining: 1.38s

45:	learn: 0.1964910	total: 1.8s	remaining: 1.33s
46:	learn: 0.1951188	total: 1.84s	remaining: 1.29s
47:	learn: 0.1919594	total: 1.88s	remaining: 1.25s
48:	learn: 0.1894465	total: 1.93s	remaining: 1.22s
49:	learn: 0.1869043	total: 1.97s	remaining: 1.18s
50:	learn: 0.1851982	total: 2s	remaining: 1.14s
51:	learn: 0.1830122	total: 2.04s	remaining: 1.1s
52:	learn: 0.1809379	total: 2.08s	remaining: 1.06s
53:	learn: 0.1788723	total: 2.12s	remaining: 1.02s
54:	learn: 0.1773426	total: 2.17s	remaining: 986ms
55:	learn: 0.1752839	total: 2.21s	remaining: 945ms
56:	learn: 0.1737877	total: 2.24s	remaining: 904ms
57:	learn: 0.1726799	total: 2.28s	remaining: 864ms
58:	learn: 0.1714130	total: 2.32s	remaining: 825ms
59:	learn: 0.1699208	total: 2.36s	remaining: 786ms
60:	learn: 0.1686267	total: 2.4s	remaining: 749ms
61:	learn: 0.1671627	total: 2.44s	remaining: 709ms
62:	learn: 0.1658349	total: 2.48s	remaining: 669ms
63:	learn: 0.1648268	total: 2.52s	remaining: 629ms
64:	learn: 0.1639074	total: 2.56s	remaining: 591ms
65:	learn: 0.1622544	total: 2.6s	remaining: 551ms
66:	learn: 0.1610816	total: 2.65s	remaining: 514ms
67:	learn: 0.1601877	total: 2.68s	remaining: 474ms
68:	learn: 0.1587445	total: 2.72s	remaining: 434ms
69:	learn: 0.1574988	total: 2.76s	remaining: 394ms
70:	learn: 0.1567376	total: 2.8s	remaining: 355ms
71:	learn: 0.1553454	total: 2.84s	remaining: 315ms
72:	learn: 0.1547836	total: 2.88s	remaining: 277ms
73:	learn: 0.1535685	total: 2.92s	remaining: 237ms
74:	learn: 0.1527625	total: 2.96s	remaining: 197ms
75:	learn: 0.1515653	total: 3s	remaining: 158ms
76:	learn: 0.1507346	total: 3.04s	remaining: 118ms
77:	learn: 0.1497179	total: 3.08s	remaining: 78.9ms
78:	learn: 0.1485490	total: 3.12s	remaining: 39.5ms
79:	learn: 0.1477469	total: 3.16s	remaining: 0us
0:	learn: 0.6518949	total: 38.9ms	remaining: 3.07s
1:	learn: 0.6062164	total: 87.5ms	remaining: 3.41s
2:	learn: 0.5673831	total: 126ms	remaining: 3.23s
3:	learn: 0.5303763	total: 163ms	remaining: 3.09s
4:	learn: 0.4994415	total: 199ms	remaining: 2.98s
5:	learn: 0.4757570	total: 234ms	remaining: 2.89s
6:	learn: 0.4541921	total: 279ms	remaining: 2.91s
7:	learn: 0.4331930	total: 323ms	remaining: 2.9s
8:	learn: 0.4115985	total: 358ms	remaining: 2.83s
9:	learn: 0.3898494	total: 395ms	remaining: 2.77s
10:	learn: 0.3717176	total: 431ms	remaining: 2.7s
11:	learn: 0.3536362	total: 466ms	remaining: 2.64s
12:	learn: 0.3414317	total: 502ms	remaining: 2.59s
13:	learn: 0.3300010	total: 545ms	remaining: 2.57s
14:	learn: 0.3153863	total: 584ms	remaining: 2.53s
15:	learn: 0.3044169	total: 622ms	remaining: 2.49s
16:	learn: 0.2942610	total: 641ms	remaining: 2.38s
17:	learn: 0.2828634	total: 676ms	remaining: 2.33s
18:	learn: 0.2752138	total: 712ms	remaining: 2.28s
19:	learn: 0.2665403	total: 756ms	remaining: 2.27s
20:	learn: 0.2569809	total: 794ms	remaining: 2.23s
21:	learn: 0.2512699	total: 830ms	remaining: 2.19s
22:	learn: 0.2441609	total: 867ms	remaining: 2.15s
23:	learn: 0.2398388	total: 904ms	remaining: 2.11s
24:	learn: 0.2354055	total: 908ms	remaining: 2s
25:	learn: 0.2311587	total: 945ms	remaining: 1.96s
26:	learn: 0.2256353	total: 991ms	remaining: 1.94s
27:	learn: 0.2205951	total: 1.03s	remaining: 1.91s
28:	learn: 0.2167488	total: 1.06s	remaining: 1.87s
29:	learn: 0.2133685	total: 1.1s	remaining: 1.83s
30:	learn: 0.2093162	total: 1.14s	remaining: 1.8s
31:	learn: 0.2072354	total: 1.18s	remaining: 1.76s
32:	learn: 0.2032979	total: 1.22s	remaining: 1.74s
33:	learn: 0.1995165	total: 1.26s	remaining: 1.7s
34:	learn: 0.1960965	total: 1.3s	remaining: 1.67s
35:	learn: 0.1942163	total: 1.31s	remaining: 1.6s
36:	learn: 0.1913105	total: 1.34s	remaining: 1.56s
37:	learn: 0.1894032	total: 1.38s	remaining: 1.52s
38:	learn: 0.1868027	total: 1.42s	remaining: 1.49s
39:	learn: 0.1835597	total: 1.47s	remaining: 1.47s
40:	learn: 0.1804997	total: 1.5s	remaining: 1.43s
41:	learn: 0.1784591	total: 1.54s	remaining: 1.4s
42:	learn: 0.1764678	total: 1.58s	remaining: 1.36s
43:	learn: 0.1747860	total: 1.62s	remaining: 1.32s
44:	learn: 0.1739712	total: 1.66s	remaining: 1.29s
45:	learn: 0.1716544	total: 1.7s	remaining: 1.26s
46:	learn: 0.1698876	total: 1.74s	remaining: 1.22s
47:	learn: 0.1686328	total: 1.77s	remaining: 1.18s
48:	learn: 0.1671131	total: 1.81s	remaining: 1.15s
49:	learn: 0.1658188	total: 1.85s	remaining: 1.11s
50:	learn: 0.1642036	total: 1.89s	remaining: 1.07s
51:	learn: 0.1631039	total: 1.93s	remaining: 1.04s
52:	learn: 0.1620387	total: 1.97s	remaining: 1s
53:	learn: 0.1607973	total: 2s	remaining: 965ms
54:	learn: 0.1598126	total: 2.04s	remaining: 927ms
55:	learn: 0.1588643	total: 2.08s	remaining: 890ms
56:	learn: 0.1581679	total: 2.11s	remaining: 852ms
57:	learn: 0.1565681	total: 2.16s	remaining: 819ms
58:	learn: 0.1549369	total: 2.19s	remaining: 782ms
59:	learn: 0.1537222	total: 2.23s	remaining: 744ms
60:	learn: 0.1530963	total: 2.27s	remaining: 708ms
61:	learn: 0.1525169	total: 2.31s	remaining: 671ms
62:	learn: 0.1511220	total: 2.35s	remaining: 633ms
63:	learn: 0.1503056	total: 2.39s	remaining: 598ms
64:	learn: 0.1490784	total: 2.43s	remaining: 561ms
65:	learn: 0.1473700	total: 2.46s	remaining: 523ms
66:	learn: 0.1457683	total: 2.5s	remaining: 485ms

67:	learn: 0.1449296	total: 2.54s	remaining: 448ms
68:	learn: 0.1438806	total: 2.58s	remaining: 411ms
69:	learn: 0.1434154	total: 2.62s	remaining: 374ms
70:	learn: 0.1419217	total: 2.66s	remaining: 337ms
71:	learn: 0.1411224	total: 2.69s	remaining: 299ms
72:	learn: 0.1406366	total: 2.73s	remaining: 262ms
73:	learn: 0.1402358	total: 2.76s	remaining: 224ms
74:	learn: 0.1389942	total: 2.8s	remaining: 187ms
75:	learn: 0.1385297	total: 2.84s	remaining: 150ms
76:	learn: 0.1380696	total: 2.88s	remaining: 112ms
77:	learn: 0.1369878	total: 2.92s	remaining: 74.8ms
78:	learn: 0.1361059	total: 2.95s	remaining: 37.4ms
79:	learn: 0.1354258	total: 2.99s	remaining: 0us
0:	learn: 0.6509719	total: 36.9ms	remaining: 2.92s
1:	learn: 0.6020890	total: 76.6ms	remaining: 2.99s
2:	learn: 0.5654535	total: 113ms	remaining: 2.9s
3:	learn: 0.5294275	total: 154ms	remaining: 2.92s
4:	learn: 0.4956424	total: 194ms	remaining: 2.91s
5:	learn: 0.4661586	total: 230ms	remaining: 2.83s
6:	learn: 0.4445128	total: 280ms	remaining: 2.92s
7:	learn: 0.4211374	total: 316ms	remaining: 2.85s
8:	learn: 0.3955347	total: 353ms	remaining: 2.79s
9:	learn: 0.3720148	total: 393ms	remaining: 2.75s
10:	learn: 0.3523635	total: 437ms	remaining: 2.74s
11:	learn: 0.3347254	total: 474ms	remaining: 2.69s
12:	learn: 0.3230482	total: 520ms	remaining: 2.68s
13:	learn: 0.3065965	total: 557ms	remaining: 2.62s
14:	learn: 0.2970749	total: 594ms	remaining: 2.57s
15:	learn: 0.2871629	total: 632ms	remaining: 2.53s
16:	learn: 0.2770954	total: 652ms	remaining: 2.42s
17:	learn: 0.2679117	total: 689ms	remaining: 2.37s
18:	learn: 0.2601215	total: 734ms	remaining: 2.36s
19:	learn: 0.2514976	total: 770ms	remaining: 2.31s
20:	learn: 0.2431400	total: 807ms	remaining: 2.27s
21:	learn: 0.2372216	total: 843ms	remaining: 2.22s
22:	learn: 0.2289316	total: 879ms	remaining: 2.18s
23:	learn: 0.2245784	total: 916ms	remaining: 2.14s
24:	learn: 0.2197266	total: 963ms	remaining: 2.12s
25:	learn: 0.2159343	total: 1000ms	remaining: 2.08s
26:	learn: 0.2115738	total: 1.04s	remaining: 2.03s
27:	learn: 0.2078047	total: 1.07s	remaining: 1.99s
28:	learn: 0.2042431	total: 1.11s	remaining: 1.95s
29:	learn: 0.2002614	total: 1.15s	remaining: 1.91s
30:	learn: 0.1960065	total: 1.2s	remaining: 1.9s
31:	learn: 0.1920293	total: 1.24s	remaining: 1.86s
32:	learn: 0.1889482	total: 1.27s	remaining: 1.82s
33:	learn: 0.1854658	total: 1.31s	remaining: 1.78s
34:	learn: 0.1812703	total: 1.35s	remaining: 1.74s
35:	learn: 0.1791590	total: 1.39s	remaining: 1.7s
36:	learn: 0.1759942	total: 1.44s	remaining: 1.67s
37:	learn: 0.1722047	total: 1.47s	remaining: 1.63s
38:	learn: 0.1698119	total: 1.51s	remaining: 1.59s
39:	learn: 0.1671544	total: 1.55s	remaining: 1.55s
40:	learn: 0.1654468	total: 1.58s	remaining: 1.5s
41:	learn: 0.1632825	total: 1.62s	remaining: 1.46s
42:	learn: 0.1619266	total: 1.66s	remaining: 1.43s
43:	learn: 0.1601512	total: 1.7s	remaining: 1.39s
44:	learn: 0.1574705	total: 1.74s	remaining: 1.35s
45:	learn: 0.1550155	total: 1.77s	remaining: 1.31s
46:	learn: 0.1540709	total: 1.81s	remaining: 1.27s
47:	learn: 0.1522576	total: 1.84s	remaining: 1.23s
48:	learn: 0.1509553	total: 1.89s	remaining: 1.2s
49:	learn: 0.1492534	total: 1.93s	remaining: 1.16s
50:	learn: 0.1472910	total: 1.96s	remaining: 1.12s
51:	learn: 0.1456915	total: 2s	remaining: 1.08s
52:	learn: 0.1441786	total: 2.04s	remaining: 1.04s
53:	learn: 0.1430157	total: 2.08s	remaining: 1000ms
54:	learn: 0.1419859	total: 2.12s	remaining: 965ms
55:	learn: 0.1410462	total: 2.16s	remaining: 926ms
56:	learn: 0.1401587	total: 2.21s	remaining: 891ms
57:	learn: 0.1387045	total: 2.24s	remaining: 851ms
58:	learn: 0.1379444	total: 2.28s	remaining: 811ms
59:	learn: 0.1372372	total: 2.31s	remaining: 772ms
60:	learn: 0.1362886	total: 2.37s	remaining: 737ms
61:	learn: 0.1348591	total: 2.4s	remaining: 698ms
62:	learn: 0.1341841	total: 2.44s	remaining: 659ms
63:	learn: 0.1333220	total: 2.48s	remaining: 620ms
64:	learn: 0.1320596	total: 2.52s	remaining: 581ms
65:	learn: 0.1314162	total: 2.55s	remaining: 542ms
66:	learn: 0.1299314	total: 2.6s	remaining: 505ms
67:	learn: 0.1286896	total: 2.64s	remaining: 466ms
68:	learn: 0.1277527	total: 2.68s	remaining: 427ms
69:	learn: 0.1262683	total: 2.72s	remaining: 388ms
70:	learn: 0.1259701	total: 2.75s	remaining: 349ms
71:	learn: 0.1248108	total: 2.79s	remaining: 310ms
72:	learn: 0.1243836	total: 2.84s	remaining: 272ms
73:	learn: 0.1234801	total: 2.87s	remaining: 233ms
74:	learn: 0.1226632	total: 2.91s	remaining: 194ms
75:	learn: 0.1220415	total: 2.95s	remaining: 155ms
76:	learn: 0.1213101	total: 2.98s	remaining: 116ms
77:	learn: 0.1208564	total: 3.02s	remaining: 77.5ms
78:	learn: 0.1201675	total: 3.07s	remaining: 38.9ms
79:	learn: 0.1195695	total: 3.11s	remaining: 0us
0:	learn: 0.6508348	total: 58ms	remaining: 4.58s
1:	learn: 0.6078480	total: 94ms	remaining: 3.67s
2:	learn: 0.5670973	total: 129ms	remaining: 3.32s
3:	learn: 0.5283949	total: 165ms	remaining: 3.14s
4:	learn: 0.4959166	total: 202ms	remaining: 3.02s
5:	learn: 0.4712487	total: 245ms	remaining: 3.02s
6:	learn: 0.4493432	total: 291ms	remaining: 3.03s
7:	learn: 0.4251239	total: 329ms	remaining: 2.96s
8:	learn: 0.4000466	total: 366ms	remaining: 2.89s

9:	learn: 0.3790972	total: 403ms	remaining: 2.82s
10:	learn: 0.3608026	total: 441ms	remaining: 2.77s
11:	learn: 0.3426061	total: 479ms	remaining: 2.71s
12:	learn: 0.3307967	total: 525ms	remaining: 2.71s
13:	learn: 0.3152901	total: 564ms	remaining: 2.66s
14:	learn: 0.3016123	total: 603ms	remaining: 2.61s
15:	learn: 0.2907064	total: 641ms	remaining: 2.56s
16:	learn: 0.2790097	total: 678ms	remaining: 2.51s
17:	learn: 0.2687192	total: 717ms	remaining: 2.47s
18:	learn: 0.2604770	total: 766ms	remaining: 2.46s
19:	learn: 0.2538520	total: 804ms	remaining: 2.41s
20:	learn: 0.2452745	total: 841ms	remaining: 2.36s
21:	learn: 0.2397876	total: 877ms	remaining: 2.31s
22:	learn: 0.2323341	total: 914ms	remaining: 2.26s
23:	learn: 0.2281031	total: 933ms	remaining: 2.18s
24:	learn: 0.2239697	total: 985ms	remaining: 2.17s
25:	learn: 0.2177234	total: 1.02s	remaining: 2.13s
26:	learn: 0.2136502	total: 1.06s	remaining: 2.08s
27:	learn: 0.2095310	total: 1.1s	remaining: 2.04s
28:	learn: 0.2062731	total: 1.14s	remaining: 2s
29:	learn: 0.2011577	total: 1.17s	remaining: 1.95s
30:	learn: 0.1975007	total: 1.21s	remaining: 1.92s
31:	learn: 0.1929600	total: 1.25s	remaining: 1.88s
32:	learn: 0.1897422	total: 1.29s	remaining: 1.84s
33:	learn: 0.1859675	total: 1.33s	remaining: 1.8s
34:	learn: 0.1827021	total: 1.36s	remaining: 1.75s
35:	learn: 0.1799893	total: 1.4s	remaining: 1.71s
36:	learn: 0.1769820	total: 1.45s	remaining: 1.69s
37:	learn: 0.1735673	total: 1.49s	remaining: 1.65s
38:	learn: 0.1708026	total: 1.53s	remaining: 1.61s
39:	learn: 0.1689116	total: 1.57s	remaining: 1.57s
40:	learn: 0.1673618	total: 1.6s	remaining: 1.53s
41:	learn: 0.1651040	total: 1.65s	remaining: 1.49s
42:	learn: 0.1638129	total: 1.69s	remaining: 1.46s
43:	learn: 0.1624469	total: 1.73s	remaining: 1.41s
44:	learn: 0.1601504	total: 1.77s	remaining: 1.38s
45:	learn: 0.1581727	total: 1.81s	remaining: 1.34s
46:	learn: 0.1560981	total: 1.85s	remaining: 1.3s
47:	learn: 0.1540697	total: 1.89s	remaining: 1.26s
48:	learn: 0.1529908	total: 1.94s	remaining: 1.22s
49:	learn: 0.1512204	total: 1.98s	remaining: 1.19s
50:	learn: 0.1493843	total: 2.02s	remaining: 1.15s
51:	learn: 0.1479547	total: 2.06s	remaining: 1.11s
52:	learn: 0.1462726	total: 2.1s	remaining: 1.07s
53:	learn: 0.1448924	total: 2.14s	remaining: 1.03s
54:	learn: 0.1439185	total: 2.18s	remaining: 993ms
55:	learn: 0.1427119	total: 2.22s	remaining: 953ms
56:	learn: 0.1418941	total: 2.26s	remaining: 912ms
57:	learn: 0.1409165	total: 2.3s	remaining: 872ms
58:	learn: 0.1398811	total: 2.34s	remaining: 833ms
59:	learn: 0.1388896	total: 2.39s	remaining: 796ms
60:	learn: 0.1375950	total: 2.42s	remaining: 756ms
61:	learn: 0.1359916	total: 2.46s	remaining: 715ms
62:	learn: 0.1352204	total: 2.5s	remaining: 674ms
63:	learn: 0.1343825	total: 2.54s	remaining: 634ms
64:	learn: 0.1336517	total: 2.57s	remaining: 594ms
65:	learn: 0.1329526	total: 2.62s	remaining: 556ms
66:	learn: 0.1322706	total: 2.66s	remaining: 516ms
67:	learn: 0.1309894	total: 2.69s	remaining: 475ms
68:	learn: 0.1303127	total: 2.73s	remaining: 435ms
69:	learn: 0.1293494	total: 2.77s	remaining: 395ms
70:	learn: 0.1287864	total: 2.8s	remaining: 355ms
71:	learn: 0.1280322	total: 2.85s	remaining: 317ms
72:	learn: 0.1271478	total: 2.89s	remaining: 277ms
73:	learn: 0.1267795	total: 2.92s	remaining: 237ms
74:	learn: 0.1264190	total: 2.96s	remaining: 198ms
75:	learn: 0.1257775	total: 3s	remaining: 158ms
76:	learn: 0.1252302	total: 3.05s	remaining: 119ms
77:	learn: 0.1247103	total: 3.09s	remaining: 79.3ms
78:	learn: 0.1243571	total: 3.13s	remaining: 39.6ms
79:	learn: 0.1235042	total: 3.17s	remaining: 0us
0:	learn: 0.6386549	total: 45.5ms	remaining: 3.59s
1:	learn: 0.5794667	total: 81.5ms	remaining: 3.18s
2:	learn: 0.5350597	total: 117ms	remaining: 3.01s
3:	learn: 0.4902950	total: 153ms	remaining: 2.91s
4:	learn: 0.4542138	total: 189ms	remaining: 2.84s
5:	learn: 0.4276605	total: 224ms	remaining: 2.76s
6:	learn: 0.4042525	total: 269ms	remaining: 2.8s
7:	learn: 0.3819469	total: 305ms	remaining: 2.75s
8:	learn: 0.3594459	total: 341ms	remaining: 2.69s
9:	learn: 0.3372844	total: 376ms	remaining: 2.63s
10:	learn: 0.3195579	total: 410ms	remaining: 2.57s
11:	learn: 0.3025844	total: 446ms	remaining: 2.53s
12:	learn: 0.2914362	total: 491ms	remaining: 2.53s
13:	learn: 0.2812717	total: 527ms	remaining: 2.48s
14:	learn: 0.2681212	total: 563ms	remaining: 2.44s
15:	learn: 0.2576900	total: 599ms	remaining: 2.4s
16:	learn: 0.2477187	total: 635ms	remaining: 2.35s
17:	learn: 0.2396752	total: 672ms	remaining: 2.31s
18:	learn: 0.2331245	total: 725ms	remaining: 2.33s
19:	learn: 0.2258934	total: 761ms	remaining: 2.28s
20:	learn: 0.2202542	total: 797ms	remaining: 2.24s
21:	learn: 0.2158870	total: 834ms	remaining: 2.2s
22:	learn: 0.2099379	total: 871ms	remaining: 2.16s
23:	learn: 0.2056097	total: 907ms	remaining: 2.12s
24:	learn: 0.2019088	total: 951ms	remaining: 2.09s
25:	learn: 0.1984477	total: 987ms	remaining: 2.05s
26:	learn: 0.1953531	total: 1.03s	remaining: 2.01s
27:	learn: 0.1919639	total: 1.06s	remaining: 1.97s
28:	learn: 0.1886041	total: 1.1s	remaining: 1.93s
29:	learn: 0.1851554	total: 1.13s	remaining: 1.89s
30:	learn: 0.1823516	total: 1.18s	remaining: 1.86s

31:	learn: 0.1794975	total: 1.21s	remaining: 1.82s
32:	learn: 0.1772368	total: 1.25s	remaining: 1.78s
33:	learn: 0.1736062	total: 1.28s	remaining: 1.73s
34:	learn: 0.1703676	total: 1.32s	remaining: 1.69s
35:	learn: 0.1690795	total: 1.35s	remaining: 1.65s
36:	learn: 0.1662960	total: 1.4s	remaining: 1.62s
37:	learn: 0.1643045	total: 1.43s	remaining: 1.58s
38:	learn: 0.1625412	total: 1.47s	remaining: 1.54s
39:	learn: 0.1609807	total: 1.51s	remaining: 1.51s
40:	learn: 0.1600736	total: 1.52s	remaining: 1.45s
41:	learn: 0.1586133	total: 1.56s	remaining: 1.41s
42:	learn: 0.1576141	total: 1.61s	remaining: 1.39s
43:	learn: 0.1556886	total: 1.65s	remaining: 1.35s
44:	learn: 0.1543002	total: 1.69s	remaining: 1.31s
45:	learn: 0.1531071	total: 1.73s	remaining: 1.28s
46:	learn: 0.1513682	total: 1.76s	remaining: 1.24s
47:	learn: 0.1499784	total: 1.8s	remaining: 1.2s
48:	learn: 0.1486980	total: 1.84s	remaining: 1.17s
49:	learn: 0.1478048	total: 1.88s	remaining: 1.13s
50:	learn: 0.1467731	total: 1.91s	remaining: 1.09s
51:	learn: 0.1458016	total: 1.95s	remaining: 1.05s
52:	learn: 0.1448808	total: 1.99s	remaining: 1.01s
53:	learn: 0.1439293	total: 2.03s	remaining: 977ms
54:	learn: 0.1432615	total: 2.07s	remaining: 942ms
55:	learn: 0.1427114	total: 2.11s	remaining: 904ms
56:	learn: 0.1413225	total: 2.15s	remaining: 867ms
57:	learn: 0.1402600	total: 2.18s	remaining: 828ms
58:	learn: 0.1397467	total: 2.22s	remaining: 790ms
59:	learn: 0.1388832	total: 2.25s	remaining: 752ms
60:	learn: 0.1382990	total: 2.3s	remaining: 717ms
61:	learn: 0.1371017	total: 2.34s	remaining: 678ms
62:	learn: 0.1365238	total: 2.37s	remaining: 640ms
63:	learn: 0.1355235	total: 2.41s	remaining: 602ms
64:	learn: 0.1345921	total: 2.44s	remaining: 564ms
65:	learn: 0.1329527	total: 2.48s	remaining: 526ms
66:	learn: 0.1316435	total: 2.52s	remaining: 489ms
67:	learn: 0.1309579	total: 2.56s	remaining: 451ms
68:	learn: 0.1301546	total: 2.59s	remaining: 413ms
69:	learn: 0.1298815	total: 2.61s	remaining: 373ms
70:	learn: 0.1290126	total: 2.65s	remaining: 336ms
71:	learn: 0.1284422	total: 2.68s	remaining: 298ms
72:	learn: 0.1278460	total: 2.73s	remaining: 262ms
73:	learn: 0.1271819	total: 2.77s	remaining: 225ms
74:	learn: 0.1260777	total: 2.81s	remaining: 187ms
75:	learn: 0.1252168	total: 2.85s	remaining: 150ms
76:	learn: 0.1250987	total: 2.86s	remaining: 111ms
77:	learn: 0.1237966	total: 2.89s	remaining: 74.2ms
78:	learn: 0.1230022	total: 2.93s	remaining: 37.1ms
79:	learn: 0.1223144	total: 2.97s	remaining: 0us
0:	learn: 0.6374431	total: 37.3ms	remaining: 2.95s
1:	learn: 0.5752510	total: 73.2ms	remaining: 2.85s
2:	learn: 0.5299881	total: 124ms	remaining: 3.18s
3:	learn: 0.4868399	total: 161ms	remaining: 3.06s
4:	learn: 0.4476466	total: 198ms	remaining: 2.97s
5:	learn: 0.4194563	total: 236ms	remaining: 2.91s
6:	learn: 0.3957873	total: 274ms	remaining: 2.86s
7:	learn: 0.3706250	total: 311ms	remaining: 2.8s
8:	learn: 0.3433542	total: 354ms	remaining: 2.79s
9:	learn: 0.3192400	total: 392ms	remaining: 2.74s
10:	learn: 0.3003060	total: 428ms	remaining: 2.68s
11:	learn: 0.2837023	total: 463ms	remaining: 2.62s
12:	learn: 0.2738870	total: 498ms	remaining: 2.57s
13:	learn: 0.2590565	total: 534ms	remaining: 2.52s
14:	learn: 0.2509095	total: 579ms	remaining: 2.51s
15:	learn: 0.2417859	total: 622ms	remaining: 2.49s
16:	learn: 0.2320056	total: 658ms	remaining: 2.44s
17:	learn: 0.2246093	total: 694ms	remaining: 2.39s
18:	learn: 0.2181759	total: 730ms	remaining: 2.34s
19:	learn: 0.2108050	total: 772ms	remaining: 2.31s
20:	learn: 0.2034753	total: 819ms	remaining: 2.3s
21:	learn: 0.1992330	total: 855ms	remaining: 2.25s
22:	learn: 0.1932955	total: 892ms	remaining: 2.21s
23:	learn: 0.1896366	total: 932ms	remaining: 2.17s
24:	learn: 0.1862890	total: 970ms	remaining: 2.13s
25:	learn: 0.1832150	total: 1.01s	remaining: 2.1s
26:	learn: 0.1790708	total: 1.05s	remaining: 2.07s
27:	learn: 0.1757052	total: 1.09s	remaining: 2.02s
28:	learn: 0.1729793	total: 1.13s	remaining: 1.98s
29:	learn: 0.1698562	total: 1.16s	remaining: 1.93s
30:	learn: 0.1674814	total: 1.2s	remaining: 1.89s
31:	learn: 0.1639651	total: 1.23s	remaining: 1.85s
32:	learn: 0.1622546	total: 1.27s	remaining: 1.81s
33:	learn: 0.1598741	total: 1.31s	remaining: 1.77s
34:	learn: 0.1568186	total: 1.35s	remaining: 1.73s
35:	learn: 0.1554774	total: 1.36s	remaining: 1.66s
36:	learn: 0.1524067	total: 1.39s	remaining: 1.62s
37:	learn: 0.1497032	total: 1.43s	remaining: 1.58s
38:	learn: 0.1482602	total: 1.47s	remaining: 1.54s
39:	learn: 0.1463871	total: 1.51s	remaining: 1.51s
40:	learn: 0.1441313	total: 1.55s	remaining: 1.48s
41:	learn: 0.1420593	total: 1.59s	remaining: 1.44s
42:	learn: 0.1406964	total: 1.64s	remaining: 1.41s
43:	learn: 0.1387918	total: 1.67s	remaining: 1.37s
44:	learn: 0.1373152	total: 1.71s	remaining: 1.33s
45:	learn: 0.1362762	total: 1.76s	remaining: 1.3s
46:	learn: 0.1348280	total: 1.79s	remaining: 1.26s
47:	learn: 0.1332868	total: 1.83s	remaining: 1.22s
48:	learn: 0.1315807	total: 1.87s	remaining: 1.18s
49:	learn: 0.1310403	total: 1.91s	remaining: 1.14s
50:	learn: 0.1302947	total: 1.94s	remaining: 1.1s
51:	learn: 0.1296517	total: 1.99s	remaining: 1.07s
52:	learn: 0.1283217	total: 2.03s	remaining: 1.03s

53:	learn: 0.1269866	total: 2.06s	remaining: 993ms
54:	learn: 0.1264353	total: 2.1s	remaining: 953ms
55:	learn: 0.1258286	total: 2.13s	remaining: 914ms
56:	learn: 0.1253112	total: 2.17s	remaining: 876ms
57:	learn: 0.1246537	total: 2.21s	remaining: 840ms
58:	learn: 0.1243764	total: 2.25s	remaining: 801ms
59:	learn: 0.1226823	total: 2.29s	remaining: 762ms
60:	learn: 0.1212926	total: 2.32s	remaining: 724ms
61:	learn: 0.1205019	total: 2.36s	remaining: 685ms
62:	learn: 0.1195329	total: 2.4s	remaining: 648ms
63:	learn: 0.1183307	total: 2.45s	remaining: 612ms
64:	learn: 0.1171004	total: 2.48s	remaining: 573ms
65:	learn: 0.1160221	total: 2.52s	remaining: 534ms
66:	learn: 0.1146497	total: 2.56s	remaining: 496ms
67:	learn: 0.1137710	total: 2.59s	remaining: 457ms
68:	learn: 0.1132005	total: 2.63s	remaining: 420ms
69:	learn: 0.1124286	total: 2.68s	remaining: 383ms
70:	learn: 0.1118732	total: 2.72s	remaining: 345ms
71:	learn: 0.1112495	total: 2.75s	remaining: 306ms
72:	learn: 0.1102018	total: 2.79s	remaining: 268ms
73:	learn: 0.1089826	total: 2.83s	remaining: 229ms
74:	learn: 0.1085821	total: 2.87s	remaining: 191ms
75:	learn: 0.1079499	total: 2.91s	remaining: 153ms
76:	learn: 0.1075228	total: 2.95s	remaining: 115ms
77:	learn: 0.1069206	total: 2.99s	remaining: 76.6ms
78:	learn: 0.1052506	total: 3.02s	remaining: 38.3ms
79:	learn: 0.1046080	total: 3.06s	remaining: 0us
0:	learn: 0.6372622	total: 36.2ms	remaining: 2.86s
1:	learn: 0.5821484	total: 73.3ms	remaining: 2.86s
2:	learn: 0.5311700	total: 111ms	remaining: 2.85s
3:	learn: 0.4847543	total: 149ms	remaining: 2.83s
4:	learn: 0.4424854	total: 185ms	remaining: 2.77s
5:	learn: 0.4155755	total: 221ms	remaining: 2.73s
6:	learn: 0.3923856	total: 265ms	remaining: 2.77s
7:	learn: 0.3672231	total: 302ms	remaining: 2.72s
8:	learn: 0.3396370	total: 338ms	remaining: 2.67s
9:	learn: 0.3190827	total: 376ms	remaining: 2.63s
10:	learn: 0.3014143	total: 416ms	remaining: 2.61s
11:	learn: 0.2851881	total: 461ms	remaining: 2.61s
12:	learn: 0.2731118	total: 515ms	remaining: 2.65s
13:	learn: 0.2589528	total: 555ms	remaining: 2.62s
14:	learn: 0.2477758	total: 595ms	remaining: 2.58s
15:	learn: 0.2378747	total: 636ms	remaining: 2.54s
16:	learn: 0.2285734	total: 673ms	remaining: 2.49s
17:	learn: 0.2202184	total: 710ms	remaining: 2.44s
18:	learn: 0.2134150	total: 753ms	remaining: 2.42s
19:	learn: 0.2059357	total: 791ms	remaining: 2.37s
20:	learn: 0.1996082	total: 828ms	remaining: 2.33s
21:	learn: 0.1955997	total: 864ms	remaining: 2.28s
22:	learn: 0.1921818	total: 900ms	remaining: 2.23s
23:	learn: 0.1884246	total: 936ms	remaining: 2.18s
24:	learn: 0.1851933	total: 999ms	remaining: 2.2s
25:	learn: 0.1828785	total: 1.03s	remaining: 2.15s
26:	learn: 0.1801108	total: 1.07s	remaining: 2.1s
27:	learn: 0.1770605	total: 1.11s	remaining: 2.06s
28:	learn: 0.1740757	total: 1.15s	remaining: 2.02s
29:	learn: 0.1711643	total: 1.19s	remaining: 1.98s
30:	learn: 0.1677197	total: 1.24s	remaining: 1.96s
31:	learn: 0.1647914	total: 1.28s	remaining: 1.92s
32:	learn: 0.1619562	total: 1.31s	remaining: 1.87s
33:	learn: 0.1599197	total: 1.35s	remaining: 1.83s
34:	learn: 0.1581559	total: 1.39s	remaining: 1.78s
35:	learn: 0.1565452	total: 1.43s	remaining: 1.74s
36:	learn: 0.1539540	total: 1.48s	remaining: 1.72s
37:	learn: 0.1519285	total: 1.51s	remaining: 1.67s
38:	learn: 0.1501880	total: 1.55s	remaining: 1.63s
39:	learn: 0.1477981	total: 1.59s	remaining: 1.59s
40:	learn: 0.1458797	total: 1.62s	remaining: 1.54s
41:	learn: 0.1442349	total: 1.66s	remaining: 1.5s
42:	learn: 0.1420435	total: 1.7s	remaining: 1.46s
43:	learn: 0.1403873	total: 1.74s	remaining: 1.42s
44:	learn: 0.1395320	total: 1.77s	remaining: 1.38s
45:	learn: 0.1390222	total: 1.81s	remaining: 1.34s
46:	learn: 0.1372055	total: 1.85s	remaining: 1.3s
47:	learn: 0.1355598	total: 1.88s	remaining: 1.25s
48:	learn: 0.1339611	total: 1.93s	remaining: 1.22s
49:	learn: 0.1322620	total: 1.96s	remaining: 1.18s
50:	learn: 0.1306658	total: 2.01s	remaining: 1.14s
51:	learn: 0.1293790	total: 2.04s	remaining: 1.1s
52:	learn: 0.1285210	total: 2.08s	remaining: 1.06s
53:	learn: 0.1275680	total: 2.12s	remaining: 1.02s
54:	learn: 0.1266398	total: 2.17s	remaining: 987ms
55:	learn: 0.1259895	total: 2.21s	remaining: 948ms
56:	learn: 0.1249748	total: 2.25s	remaining: 908ms
57:	learn: 0.1246202	total: 2.29s	remaining: 868ms
58:	learn: 0.1241579	total: 2.33s	remaining: 828ms
59:	learn: 0.1234748	total: 2.36s	remaining: 787ms
60:	learn: 0.1223103	total: 2.41s	remaining: 750ms
61:	learn: 0.1212888	total: 2.45s	remaining: 710ms
62:	learn: 0.1204776	total: 2.49s	remaining: 672ms
63:	learn: 0.1193016	total: 2.52s	remaining: 631ms
64:	learn: 0.1181517	total: 2.56s	remaining: 592ms
65:	learn: 0.1171216	total: 2.6s	remaining: 552ms
66:	learn: 0.1169030	total: 2.64s	remaining: 513ms
67:	learn: 0.1154282	total: 2.68s	remaining: 473ms
68:	learn: 0.1143278	total: 2.71s	remaining: 433ms
69:	learn: 0.1131315	total: 2.75s	remaining: 394ms
70:	learn: 0.1118958	total: 2.79s	remaining: 354ms
71:	learn: 0.1112121	total: 2.83s	remaining: 314ms
72:	learn: 0.1104776	total: 2.87s	remaining: 275ms
73:	learn: 0.1094043	total: 2.91s	remaining: 236ms
74:	learn: 0.1091325	total: 2.94s	remaining: 196ms

75:	learn: 0.1081689	total: 2.98s	remaining: 157ms
76:	learn: 0.1073146	total: 3.02s	remaining: 118ms
77:	learn: 0.1064339	total: 3.05s	remaining: 78.3ms
78:	learn: 0.1061093	total: 3.1s	remaining: 39.2ms
79:	learn: 0.1053258	total: 3.13s	remaining: 0us
0:	learn: 0.6791407	total: 35.8ms	remaining: 3.18s
1:	learn: 0.6627167	total: 80.5ms	remaining: 3.54s
2:	learn: 0.6477791	total: 119ms	remaining: 3.46s
3:	learn: 0.6325852	total: 157ms	remaining: 3.38s
4:	learn: 0.6181110	total: 199ms	remaining: 3.38s
5:	learn: 0.6063451	total: 242ms	remaining: 3.38s
6:	learn: 0.5923132	total: 278ms	remaining: 3.3s
7:	learn: 0.5801042	total: 326ms	remaining: 3.34s
8:	learn: 0.5684541	total: 366ms	remaining: 3.29s
9:	learn: 0.5560049	total: 403ms	remaining: 3.23s
10:	learn: 0.5442222	total: 442ms	remaining: 3.18s
11:	learn: 0.5324515	total: 480ms	remaining: 3.12s
12:	learn: 0.5232732	total: 516ms	remaining: 3.06s
13:	learn: 0.5117062	total: 563ms	remaining: 3.06s
14:	learn: 0.5006558	total: 598ms	remaining: 2.99s
15:	learn: 0.4921673	total: 633ms	remaining: 2.93s
16:	learn: 0.4836199	total: 652ms	remaining: 2.8s
17:	learn: 0.4748627	total: 687ms	remaining: 2.75s
18:	learn: 0.4667168	total: 723ms	remaining: 2.7s
19:	learn: 0.4578206	total: 762ms	remaining: 2.67s
20:	learn: 0.4486854	total: 804ms	remaining: 2.64s
21:	learn: 0.4410347	total: 839ms	remaining: 2.59s
22:	learn: 0.4325364	total: 875ms	remaining: 2.55s
23:	learn: 0.4265464	total: 911ms	remaining: 2.5s
24:	learn: 0.4200699	total: 947ms	remaining: 2.46s
25:	learn: 0.4142384	total: 983ms	remaining: 2.42s
26:	learn: 0.4072413	total: 1.03s	remaining: 2.4s
27:	learn: 0.4009872	total: 1.06s	remaining: 2.36s
28:	learn: 0.3952050	total: 1.1s	remaining: 2.32s
29:	learn: 0.3889355	total: 1.14s	remaining: 2.28s
30:	learn: 0.3837602	total: 1.18s	remaining: 2.24s
31:	learn: 0.3779735	total: 1.22s	remaining: 2.21s
32:	learn: 0.3716509	total: 1.27s	remaining: 2.19s
33:	learn: 0.3658556	total: 1.3s	remaining: 2.15s
34:	learn: 0.3601986	total: 1.34s	remaining: 2.11s
35:	learn: 0.3556856	total: 1.38s	remaining: 2.07s
36:	learn: 0.3506903	total: 1.41s	remaining: 2.03s
37:	learn: 0.3454717	total: 1.45s	remaining: 1.99s
38:	learn: 0.3400025	total: 1.5s	remaining: 1.96s
39:	learn: 0.3359606	total: 1.53s	remaining: 1.91s
40:	learn: 0.3319888	total: 1.57s	remaining: 1.88s
41:	learn: 0.3281915	total: 1.61s	remaining: 1.84s
42:	learn: 0.3234134	total: 1.65s	remaining: 1.81s
43:	learn: 0.3196161	total: 1.69s	remaining: 1.77s
44:	learn: 0.3148530	total: 1.74s	remaining: 1.74s
45:	learn: 0.3105316	total: 1.78s	remaining: 1.7s
46:	learn: 0.3072915	total: 1.81s	remaining: 1.66s
47:	learn: 0.3028888	total: 1.85s	remaining: 1.62s
48:	learn: 0.2997492	total: 1.89s	remaining: 1.58s
49:	learn: 0.2963930	total: 1.92s	remaining: 1.54s
50:	learn: 0.2936002	total: 1.97s	remaining: 1.5s
51:	learn: 0.2905221	total: 2s	remaining: 1.46s
52:	learn: 0.2868780	total: 2.04s	remaining: 1.42s
53:	learn: 0.2836925	total: 2.07s	remaining: 1.38s
54:	learn: 0.2817627	total: 2.08s	remaining: 1.32s
55:	learn: 0.2791311	total: 2.11s	remaining: 1.28s
56:	learn: 0.2758002	total: 2.15s	remaining: 1.24s
57:	learn: 0.2733280	total: 2.19s	remaining: 1.21s
58:	learn: 0.2711165	total: 2.23s	remaining: 1.17s
59:	learn: 0.2685101	total: 2.27s	remaining: 1.14s
60:	learn: 0.2664084	total: 2.3s	remaining: 1.09s
61:	learn: 0.2635878	total: 2.34s	remaining: 1.06s
62:	learn: 0.2611837	total: 2.37s	remaining: 1.02s
63:	learn: 0.2587031	total: 2.42s	remaining: 985ms
64:	learn: 0.2560294	total: 2.46s	remaining: 947ms
65:	learn: 0.2534400	total: 2.5s	remaining: 908ms
66:	learn: 0.2509306	total: 2.53s	remaining: 870ms
67:	learn: 0.2490825	total: 2.57s	remaining: 832ms
68:	learn: 0.2474467	total: 2.61s	remaining: 794ms
69:	learn: 0.2453682	total: 2.65s	remaining: 758ms
70:	learn: 0.2436531	total: 2.67s	remaining: 715ms
71:	learn: 0.2412899	total: 2.71s	remaining: 677ms
72:	learn: 0.2396590	total: 2.74s	remaining: 639ms
73:	learn: 0.2380467	total: 2.78s	remaining: 601ms
74:	learn: 0.2360038	total: 2.82s	remaining: 563ms
75:	learn: 0.2340706	total: 2.85s	remaining: 525ms
76:	learn: 0.2320108	total: 2.9s	remaining: 489ms
77:	learn: 0.2305639	total: 2.93s	remaining: 451ms
78:	learn: 0.2291253	total: 2.97s	remaining: 413ms
79:	learn: 0.2277258	total: 3s	remaining: 375ms
80:	learn: 0.2259080	total: 3.04s	remaining: 338ms
81:	learn: 0.2240390	total: 3.07s	remaining: 300ms
82:	learn: 0.2221661	total: 3.12s	remaining: 263ms
83:	learn: 0.2209117	total: 3.15s	remaining: 225ms
84:	learn: 0.2196449	total: 3.19s	remaining: 188ms
85:	learn: 0.2179881	total: 3.23s	remaining: 150ms
86:	learn: 0.2168366	total: 3.27s	remaining: 113ms
87:	learn: 0.2158442	total: 3.31s	remaining: 75.3ms
88:	learn: 0.2147457	total: 3.36s	remaining: 37.7ms
89:	learn: 0.2136268	total: 3.39s	remaining: 0us
0:	learn: 0.6788236	total: 34.7ms	remaining: 3.09s
1:	learn: 0.6615390	total: 79.8ms	remaining: 3.51s
2:	learn: 0.6457778	total: 115ms	remaining: 3.35s
3:	learn: 0.6310168	total: 150ms	remaining: 3.23s
4:	learn: 0.6156249	total: 186ms	remaining: 3.17s
5:	learn: 0.5990069	total: 222ms	remaining: 3.1s
6:	learn: 0.5880764	total: 257ms	remaining: 3.04s



7:	learn: 0.5752112	total: 300ms	remaining: 3.08s
8:	learn: 0.5622940	total: 341ms	remaining: 3.07s
9:	learn: 0.5482712	total: 377ms	remaining: 3.02s
10:	learn: 0.5354771	total: 413ms	remaining: 2.97s
11:	learn: 0.5231399	total: 449ms	remaining: 2.92s
12:	learn: 0.5138478	total: 486ms	remaining: 2.88s
13:	learn: 0.5010520	total: 532ms	remaining: 2.89s
14:	learn: 0.4894648	total: 569ms	remaining: 2.85s
15:	learn: 0.4806031	total: 606ms	remaining: 2.8s
16:	learn: 0.4716255	total: 626ms	remaining: 2.69s
17:	learn: 0.4629426	total: 662ms	remaining: 2.65s
18:	learn: 0.4543146	total: 697ms	remaining: 2.6s
19:	learn: 0.4450274	total: 750ms	remaining: 2.62s
20:	learn: 0.4360269	total: 788ms	remaining: 2.59s
21:	learn: 0.4288315	total: 824ms	remaining: 2.55s
22:	learn: 0.4198105	total: 860ms	remaining: 2.51s
23:	learn: 0.4137630	total: 897ms	remaining: 2.47s
24:	learn: 0.4069434	total: 933ms	remaining: 2.42s
25:	learn: 0.4010151	total: 979ms	remaining: 2.41s
26:	learn: 0.3921870	total: 1.01s	remaining: 2.37s
27:	learn: 0.3856900	total: 1.05s	remaining: 2.33s
28:	learn: 0.3794459	total: 1.09s	remaining: 2.29s
29:	learn: 0.3734359	total: 1.12s	remaining: 2.24s
30:	learn: 0.3676631	total: 1.16s	remaining: 2.2s
31:	learn: 0.3600506	total: 1.2s	remaining: 2.18s
32:	learn: 0.3547393	total: 1.24s	remaining: 2.13s
33:	learn: 0.3490570	total: 1.27s	remaining: 2.1s
34:	learn: 0.3434171	total: 1.31s	remaining: 2.06s
35:	learn: 0.3388457	total: 1.34s	remaining: 2.02s
36:	learn: 0.3329704	total: 1.38s	remaining: 1.98s
37:	learn: 0.3275250	total: 1.42s	remaining: 1.95s
38:	learn: 0.3233160	total: 1.46s	remaining: 1.91s
39:	learn: 0.3194589	total: 1.49s	remaining: 1.87s
40:	learn: 0.3153729	total: 1.53s	remaining: 1.83s
41:	learn: 0.3118610	total: 1.56s	remaining: 1.79s
42:	learn: 0.3068602	total: 1.6s	remaining: 1.75s
43:	learn: 0.3034702	total: 1.64s	remaining: 1.72s
44:	learn: 0.3001024	total: 1.68s	remaining: 1.68s
45:	learn: 0.2954749	total: 1.72s	remaining: 1.65s
46:	learn: 0.2923391	total: 1.76s	remaining: 1.61s
47:	learn: 0.2874109	total: 1.8s	remaining: 1.58s
48:	learn: 0.2848988	total: 1.84s	remaining: 1.54s
49:	learn: 0.2811443	total: 1.88s	remaining: 1.51s
50:	learn: 0.2782434	total: 1.92s	remaining: 1.47s
51:	learn: 0.2747128	total: 1.96s	remaining: 1.43s
52:	learn: 0.2711399	total: 1.99s	remaining: 1.39s
53:	learn: 0.2677238	total: 2.03s	remaining: 1.35s
54:	learn: 0.2643356	total: 2.07s	remaining: 1.31s
55:	learn: 0.2611250	total: 2.11s	remaining: 1.28s
56:	learn: 0.2582440	total: 2.15s	remaining: 1.24s
57:	learn: 0.2552127	total: 2.18s	remaining: 1.2s
58:	learn: 0.2523571	total: 2.22s	remaining: 1.17s
59:	learn: 0.2500531	total: 2.26s	remaining: 1.13s
60:	learn: 0.2475371	total: 2.3s	remaining: 1.09s
61:	learn: 0.2444658	total: 2.34s	remaining: 1.06s
62:	learn: 0.2417350	total: 2.38s	remaining: 1.02s
63:	learn: 0.2396821	total: 2.41s	remaining: 980ms
64:	learn: 0.2369638	total: 2.45s	remaining: 942ms
65:	learn: 0.2353972	total: 2.48s	remaining: 903ms
66:	learn: 0.2334873	total: 2.52s	remaining: 864ms
67:	learn: 0.2310926	total: 2.56s	remaining: 829ms
68:	learn: 0.2285355	total: 2.6s	remaining: 791ms
69:	learn: 0.2263587	total: 2.63s	remaining: 753ms
70:	learn: 0.2241709	total: 2.67s	remaining: 715ms
71:	learn: 0.2224292	total: 2.71s	remaining: 677ms
72:	learn: 0.2207751	total: 2.76s	remaining: 642ms
73:	learn: 0.2185800	total: 2.8s	remaining: 605ms
74:	learn: 0.2167469	total: 2.83s	remaining: 567ms
75:	learn: 0.2154204	total: 2.87s	remaining: 529ms
76:	learn: 0.2139871	total: 2.91s	remaining: 491ms
77:	learn: 0.2129553	total: 2.94s	remaining: 453ms
78:	learn: 0.2111018	total: 2.98s	remaining: 415ms
79:	learn: 0.2092030	total: 3.02s	remaining: 378ms
80:	learn: 0.2077553	total: 3.06s	remaining: 340ms
81:	learn: 0.2062554	total: 3.09s	remaining: 302ms
82:	learn: 0.2051193	total: 3.13s	remaining: 264ms
83:	learn: 0.2041077	total: 3.17s	remaining: 226ms
84:	learn: 0.2027561	total: 3.2s	remaining: 188ms
85:	learn: 0.2010678	total: 3.24s	remaining: 151ms
86:	learn: 0.2001535	total: 3.28s	remaining: 113ms
87:	learn: 0.1988862	total: 3.31s	remaining: 75.3ms
88:	learn: 0.1973815	total: 3.35s	remaining: 37.6ms
89:	learn: 0.1962625	total: 3.38s	remaining: 0us
0:	learn: 0.6787769	total: 42.1ms	remaining: 3.75s
1:	learn: 0.6633095	total: 80.8ms	remaining: 3.55s
2:	learn: 0.6476976	total: 118ms	remaining: 3.43s
3:	learn: 0.6318681	total: 156ms	remaining: 3.35s
4:	learn: 0.6169129	total: 194ms	remaining: 3.29s
5:	learn: 0.6050231	total: 239ms	remaining: 3.34s
6:	learn: 0.5904710	total: 285ms	remaining: 3.38s
7:	learn: 0.5792131	total: 321ms	remaining: 3.29s
8:	learn: 0.5656212	total: 358ms	remaining: 3.22s
9:	learn: 0.5528361	total: 395ms	remaining: 3.16s
10:	learn: 0.5406429	total: 432ms	remaining: 3.1s
11:	learn: 0.5279326	total: 469ms	remaining: 3.05s
12:	learn: 0.5187412	total: 514ms	remaining: 3.04s
13:	learn: 0.5070674	total: 551ms	remaining: 2.99s
14:	learn: 0.4958112	total: 589ms	remaining: 2.94s
15:	learn: 0.4861740	total: 626ms	remaining: 2.89s
16:	learn: 0.4771374	total: 662ms	remaining: 2.84s
17:	learn: 0.4669238	total: 698ms	remaining: 2.79s
18:	learn: 0.4587888	total: 746ms	remaining: 2.79s

19:	learn: 0.4508015	total: 782ms	remaining: 2.74s
20:	learn: 0.4409232	total: 819ms	remaining: 2.69s
21:	learn: 0.4332028	total: 859ms	remaining: 2.65s
22:	learn: 0.4241961	total: 895ms	remaining: 2.61s
23:	learn: 0.4178312	total: 915ms	remaining: 2.52s
24:	learn: 0.4108071	total: 958ms	remaining: 2.49s
25:	learn: 0.4049407	total: 997ms	remaining: 2.45s
26:	learn: 0.3981404	total: 1.03s	remaining: 2.41s
27:	learn: 0.3910480	total: 1.07s	remaining: 2.37s
28:	learn: 0.3848455	total: 1.11s	remaining: 2.33s
29:	learn: 0.3784674	total: 1.15s	remaining: 2.29s
30:	learn: 0.3722911	total: 1.19s	remaining: 2.27s
31:	learn: 0.3650416	total: 1.23s	remaining: 2.23s
32:	learn: 0.3596298	total: 1.27s	remaining: 2.2s
33:	learn: 0.3535587	total: 1.31s	remaining: 2.16s
34:	learn: 0.3479559	total: 1.35s	remaining: 2.12s
35:	learn: 0.3436314	total: 1.39s	remaining: 2.08s
36:	learn: 0.3386817	total: 1.43s	remaining: 2.05s
37:	learn: 0.3332009	total: 1.47s	remaining: 2.01s
38:	learn: 0.3284626	total: 1.51s	remaining: 1.97s
39:	learn: 0.3243020	total: 1.54s	remaining: 1.93s
40:	learn: 0.3203881	total: 1.58s	remaining: 1.89s
41:	learn: 0.3164657	total: 1.62s	remaining: 1.85s
42:	learn: 0.3115393	total: 1.67s	remaining: 1.82s
43:	learn: 0.3078476	total: 1.7s	remaining: 1.78s
44:	learn: 0.3029053	total: 1.74s	remaining: 1.74s
45:	learn: 0.2979739	total: 1.8s	remaining: 1.72s
46:	learn: 0.2945617	total: 1.83s	remaining: 1.68s
47:	learn: 0.2903203	total: 1.88s	remaining: 1.65s
48:	learn: 0.2874027	total: 1.92s	remaining: 1.61s
49:	learn: 0.2837694	total: 1.96s	remaining: 1.57s
50:	learn: 0.2806973	total: 2s	remaining: 1.53s
51:	learn: 0.2774930	total: 2.03s	remaining: 1.49s
52:	learn: 0.2738758	total: 2.07s	remaining: 1.44s
53:	learn: 0.2708897	total: 2.11s	remaining: 1.41s
54:	learn: 0.2688938	total: 2.12s	remaining: 1.35s
55:	learn: 0.2653052	total: 2.15s	remaining: 1.31s
56:	learn: 0.2627639	total: 2.19s	remaining: 1.27s
57:	learn: 0.2598077	total: 2.22s	remaining: 1.23s
58:	learn: 0.2571972	total: 2.27s	remaining: 1.19s
59:	learn: 0.2549447	total: 2.31s	remaining: 1.15s
60:	learn: 0.2523222	total: 2.35s	remaining: 1.12s
61:	learn: 0.2493011	total: 2.39s	remaining: 1.08s
62:	learn: 0.2475206	total: 2.43s	remaining: 1.04s
63:	learn: 0.2451392	total: 2.46s	remaining: 1s
64:	learn: 0.2425483	total: 2.5s	remaining: 962ms
65:	learn: 0.2403360	total: 2.54s	remaining: 922ms
66:	learn: 0.2378210	total: 2.58s	remaining: 887ms
67:	learn: 0.2363876	total: 2.62s	remaining: 847ms
68:	learn: 0.2347327	total: 2.65s	remaining: 808ms
69:	learn: 0.2325688	total: 2.69s	remaining: 769ms
70:	learn: 0.2302148	total: 2.73s	remaining: 731ms
71:	learn: 0.2283729	total: 2.77s	remaining: 692ms
72:	learn: 0.2268576	total: 2.81s	remaining: 654ms
73:	learn: 0.2253032	total: 2.85s	remaining: 615ms
74:	learn: 0.2232964	total: 2.88s	remaining: 576ms
75:	learn: 0.2211278	total: 2.92s	remaining: 538ms
76:	learn: 0.2193355	total: 2.96s	remaining: 499ms
77:	learn: 0.2176989	total: 2.99s	remaining: 460ms
78:	learn: 0.2164480	total: 3.04s	remaining: 423ms
79:	learn: 0.2152935	total: 3.07s	remaining: 384ms
80:	learn: 0.2134091	total: 3.11s	remaining: 346ms
81:	learn: 0.2116906	total: 3.15s	remaining: 307ms
82:	learn: 0.2104458	total: 3.18s	remaining: 269ms
83:	learn: 0.2090792	total: 3.22s	remaining: 230ms
84:	learn: 0.2076769	total: 3.28s	remaining: 193ms
85:	learn: 0.2065732	total: 3.32s	remaining: 154ms
86:	learn: 0.2051488	total: 3.35s	remaining: 116ms
87:	learn: 0.2039011	total: 3.39s	remaining: 77ms
88:	learn: 0.2027698	total: 3.42s	remaining: 38.5ms
89:	learn: 0.2016888	total: 3.46s	remaining: 0us
0:	learn: 0.6653901	total: 36.8ms	remaining: 3.27s
1:	learn: 0.6337522	total: 73.1ms	remaining: 3.22s
2:	learn: 0.6059190	total: 109ms	remaining: 3.15s
3:	learn: 0.5785004	total: 147ms	remaining: 3.15s
4:	learn: 0.5523715	total: 183ms	remaining: 3.12s
5:	learn: 0.5326429	total: 220ms	remaining: 3.08s
6:	learn: 0.5151196	total: 274ms	remaining: 3.24s
7:	learn: 0.4976233	total: 310ms	remaining: 3.18s
8:	learn: 0.4794307	total: 348ms	remaining: 3.13s
9:	learn: 0.4605170	total: 385ms	remaining: 3.08s
10:	learn: 0.4439954	total: 420ms	remaining: 3.02s
11:	learn: 0.4271142	total: 458ms	remaining: 2.98s
12:	learn: 0.4146596	total: 501ms	remaining: 2.97s
13:	learn: 0.3991062	total: 537ms	remaining: 2.92s
14:	learn: 0.3847093	total: 572ms	remaining: 2.86s
15:	learn: 0.3733216	total: 608ms	remaining: 2.81s
16:	learn: 0.3624527	total: 627ms	remaining: 2.69s
17:	learn: 0.3520358	total: 661ms	remaining: 2.65s
18:	learn: 0.3420739	total: 716ms	remaining: 2.67s
19:	learn: 0.3324052	total: 752ms	remaining: 2.63s
20:	learn: 0.3215518	total: 790ms	remaining: 2.6s
21:	learn: 0.3134324	total: 831ms	remaining: 2.57s
22:	learn: 0.3048180	total: 869ms	remaining: 2.53s
23:	learn: 0.2991114	total: 906ms	remaining: 2.49s
24:	learn: 0.2939805	total: 952ms	remaining: 2.47s
25:	learn: 0.2887437	total: 989ms	remaining: 2.43s
26:	learn: 0.2827361	total: 1.02s	remaining: 2.39s
27:	learn: 0.2770809	total: 1.06s	remaining: 2.35s
28:	learn: 0.2719442	total: 1.1s	remaining: 2.31s
29:	learn: 0.2663294	total: 1.14s	remaining: 2.27s
30:	learn: 0.2614419	total: 1.19s	remaining: 2.26s

31:	learn: 0.2555074	total: 1.23s	remaining: 2.22s
32:	learn: 0.2505669	total: 1.26s	remaining: 2.18s
33:	learn: 0.2465351	total: 1.3s	remaining: 2.15s
34:	learn: 0.2421552	total: 1.34s	remaining: 2.1s
35:	learn: 0.2390454	total: 1.38s	remaining: 2.06s
36:	learn: 0.2353690	total: 1.42s	remaining: 2.04s
37:	learn: 0.2319378	total: 1.46s	remaining: 1.99s
38:	learn: 0.2293074	total: 1.49s	remaining: 1.95s
39:	learn: 0.2265773	total: 1.53s	remaining: 1.91s
40:	learn: 0.2239044	total: 1.56s	remaining: 1.87s
41:	learn: 0.2214810	total: 1.6s	remaining: 1.83s
42:	learn: 0.2180881	total: 1.64s	remaining: 1.8s
43:	learn: 0.2154749	total: 1.68s	remaining: 1.76s
44:	learn: 0.2122523	total: 1.73s	remaining: 1.73s
45:	learn: 0.2091643	total: 1.77s	remaining: 1.69s
46:	learn: 0.2073426	total: 1.81s	remaining: 1.65s
47:	learn: 0.2043621	total: 1.84s	remaining: 1.61s
48:	learn: 0.2018468	total: 1.89s	remaining: 1.58s
49:	learn: 0.1990600	total: 1.93s	remaining: 1.54s
50:	learn: 0.1975180	total: 1.96s	remaining: 1.5s
51:	learn: 0.1953713	total: 2s	remaining: 1.46s
52:	learn: 0.1931717	total: 2.04s	remaining: 1.42s
53:	learn: 0.1910559	total: 2.07s	remaining: 1.38s
54:	learn: 0.1893376	total: 2.12s	remaining: 1.35s
55:	learn: 0.1875357	total: 2.16s	remaining: 1.31s
56:	learn: 0.1856776	total: 2.19s	remaining: 1.27s
57:	learn: 0.1841191	total: 2.23s	remaining: 1.23s
58:	learn: 0.1830692	total: 2.26s	remaining: 1.19s
59:	learn: 0.1820441	total: 2.3s	remaining: 1.15s
60:	learn: 0.1809230	total: 2.34s	remaining: 1.11s
61:	learn: 0.1797689	total: 2.38s	remaining: 1.07s
62:	learn: 0.1785858	total: 2.41s	remaining: 1.03s
63:	learn: 0.1777054	total: 2.45s	remaining: 995ms
64:	learn: 0.1762272	total: 2.48s	remaining: 955ms
65:	learn: 0.1751500	total: 2.52s	remaining: 916ms
66:	learn: 0.1736805	total: 2.56s	remaining: 880ms
67:	learn: 0.1725445	total: 2.6s	remaining: 841ms
68:	learn: 0.1710556	total: 2.63s	remaining: 802ms
69:	learn: 0.1699374	total: 2.67s	remaining: 763ms
70:	learn: 0.1686846	total: 2.71s	remaining: 726ms
71:	learn: 0.1674237	total: 2.75s	remaining: 687ms
72:	learn: 0.1661013	total: 2.79s	remaining: 650ms
73:	learn: 0.1651333	total: 2.83s	remaining: 611ms
74:	learn: 0.1641162	total: 2.87s	remaining: 573ms
75:	learn: 0.1634472	total: 2.9s	remaining: 534ms
76:	learn: 0.1627456	total: 2.94s	remaining: 496ms
77:	learn: 0.1617878	total: 2.97s	remaining: 457ms
78:	learn: 0.1611872	total: 3.01s	remaining: 420ms
79:	learn: 0.1603547	total: 3.05s	remaining: 381ms
80:	learn: 0.1594352	total: 3.09s	remaining: 343ms
81:	learn: 0.1584690	total: 3.12s	remaining: 305ms
82:	learn: 0.1579520	total: 3.16s	remaining: 267ms
83:	learn: 0.1573963	total: 3.2s	remaining: 228ms
84:	learn: 0.1563660	total: 3.24s	remaining: 191ms
85:	learn: 0.1555500	total: 3.28s	remaining: 153ms
86:	learn: 0.1550463	total: 3.32s	remaining: 114ms
87:	learn: 0.1544239	total: 3.36s	remaining: 76.4ms
88:	learn: 0.1535795	total: 3.4s	remaining: 38.2ms
89:	learn: 0.1529853	total: 3.43s	remaining: 0us
0:	learn: 0.6647653	total: 35.4ms	remaining: 3.15s
1:	learn: 0.6308751	total: 71ms	remaining: 3.12s
2:	learn: 0.6045444	total: 106ms	remaining: 3.07s
3:	learn: 0.5778500	total: 142ms	remaining: 3.06s
4:	learn: 0.5508174	total: 186ms	remaining: 3.16s
5:	learn: 0.5277074	total: 222ms	remaining: 3.1s
6:	learn: 0.5098412	total: 265ms	remaining: 3.14s
7:	learn: 0.4901300	total: 301ms	remaining: 3.08s
8:	learn: 0.4681178	total: 336ms	remaining: 3.03s
9:	learn: 0.4470315	total: 372ms	remaining: 2.98s
10:	learn: 0.4286698	total: 414ms	remaining: 2.97s
11:	learn: 0.4115424	total: 450ms	remaining: 2.92s
12:	learn: 0.3992533	total: 495ms	remaining: 2.93s
13:	learn: 0.3823769	total: 534ms	remaining: 2.9s
14:	learn: 0.3677396	total: 571ms	remaining: 2.85s
15:	learn: 0.3571496	total: 607ms	remaining: 2.81s
16:	learn: 0.3461820	total: 626ms	remaining: 2.69s
17:	learn: 0.3360846	total: 661ms	remaining: 2.64s
18:	learn: 0.3265848	total: 698ms	remaining: 2.61s
19:	learn: 0.3167481	total: 742ms	remaining: 2.6s
20:	learn: 0.3058838	total: 780ms	remaining: 2.56s
21:	learn: 0.2992202	total: 817ms	remaining: 2.52s
22:	learn: 0.2896502	total: 853ms	remaining: 2.48s
23:	learn: 0.2836389	total: 890ms	remaining: 2.45s
24:	learn: 0.2773137	total: 934ms	remaining: 2.43s
25:	learn: 0.2722424	total: 970ms	remaining: 2.39s
26:	learn: 0.2664217	total: 1.01s	remaining: 2.35s
27:	learn: 0.2609737	total: 1.05s	remaining: 2.32s
28:	learn: 0.2558042	total: 1.08s	remaining: 2.28s
29:	learn: 0.2502955	total: 1.12s	remaining: 2.24s
30:	learn: 0.2461421	total: 1.17s	remaining: 2.22s
31:	learn: 0.2397970	total: 1.21s	remaining: 2.19s
32:	learn: 0.2357047	total: 1.25s	remaining: 2.15s
33:	learn: 0.2310688	total: 1.28s	remaining: 2.11s
34:	learn: 0.2261689	total: 1.32s	remaining: 2.07s
35:	learn: 0.2231634	total: 1.36s	remaining: 2.04s
36:	learn: 0.2190171	total: 1.41s	remaining: 2.01s
37:	learn: 0.2156113	total: 1.44s	remaining: 1.97s
38:	learn: 0.2115855	total: 1.48s	remaining: 1.93s
39:	learn: 0.2083588	total: 1.51s	remaining: 1.89s
40:	learn: 0.2059316	total: 1.55s	remaining: 1.85s
41:	learn: 0.2029611	total: 1.59s	remaining: 1.81s
42:	learn: 0.1996227	total: 1.63s	remaining: 1.78s

43:	learn: 0.1978244	total: 1.67s	remaining: 1.74s
44:	learn: 0.1944806	total: 1.7s	remaining: 1.7s
45:	learn: 0.1913383	total: 1.74s	remaining: 1.66s
46:	learn: 0.1899906	total: 1.77s	remaining: 1.62s
47:	learn: 0.1875529	total: 1.81s	remaining: 1.58s
48:	learn: 0.1862593	total: 1.85s	remaining: 1.55s
49:	learn: 0.1836222	total: 1.89s	remaining: 1.51s
50:	learn: 0.1813009	total: 1.93s	remaining: 1.48s
51:	learn: 0.1786384	total: 1.97s	remaining: 1.44s
52:	learn: 0.1772126	total: 2s	remaining: 1.4s
53:	learn: 0.1752958	total: 2.04s	remaining: 1.36s
54:	learn: 0.1732996	total: 2.08s	remaining: 1.33s
55:	learn: 0.1719410	total: 2.12s	remaining: 1.29s
56:	learn: 0.1702443	total: 2.16s	remaining: 1.25s
57:	learn: 0.1684799	total: 2.21s	remaining: 1.22s
58:	learn: 0.1668544	total: 2.25s	remaining: 1.18s
59:	learn: 0.1656654	total: 2.28s	remaining: 1.14s
60:	learn: 0.1644565	total: 2.33s	remaining: 1.11s
61:	learn: 0.1627890	total: 2.37s	remaining: 1.07s
62:	learn: 0.1616570	total: 2.4s	remaining: 1.03s
63:	learn: 0.1606570	total: 2.44s	remaining: 990ms
64:	learn: 0.1592993	total: 2.47s	remaining: 950ms
65:	learn: 0.1586117	total: 2.51s	remaining: 915ms
66:	learn: 0.1570677	total: 2.55s	remaining: 876ms
67:	learn: 0.1560957	total: 2.59s	remaining: 838ms
68:	learn: 0.1547233	total: 2.63s	remaining: 799ms
69:	learn: 0.1534773	total: 2.66s	remaining: 761ms
70:	learn: 0.1529685	total: 2.7s	remaining: 722ms
71:	learn: 0.1517012	total: 2.75s	remaining: 686ms
72:	learn: 0.1509364	total: 2.78s	remaining: 648ms
73:	learn: 0.1500064	total: 2.82s	remaining: 609ms
74:	learn: 0.1491997	total: 2.85s	remaining: 570ms
75:	learn: 0.1483295	total: 2.89s	remaining: 532ms
76:	learn: 0.1477017	total: 2.92s	remaining: 493ms
77:	learn: 0.1472446	total: 2.97s	remaining: 456ms
78:	learn: 0.1465247	total: 3s	remaining: 418ms
79:	learn: 0.1455177	total: 3.04s	remaining: 380ms
80:	learn: 0.1444904	total: 3.08s	remaining: 342ms
81:	learn: 0.1435027	total: 3.12s	remaining: 304ms
82:	learn: 0.1430147	total: 3.15s	remaining: 266ms
83:	learn: 0.1421743	total: 3.21s	remaining: 229ms
84:	learn: 0.1412200	total: 3.24s	remaining: 191ms
85:	learn: 0.1404192	total: 3.28s	remaining: 153ms
86:	learn: 0.1396899	total: 3.32s	remaining: 114ms
87:	learn: 0.1389608	total: 3.36s	remaining: 76.3ms
88:	learn: 0.1380745	total: 3.39s	remaining: 38.1ms
89:	learn: 0.1375400	total: 3.44s	remaining: 0us
0:	learn: 0.6646729	total: 37.1ms	remaining: 3.3s
1:	learn: 0.6348887	total: 74.7ms	remaining: 3.28s
2:	learn: 0.6057415	total: 123ms	remaining: 3.57s
3:	learn: 0.5771231	total: 159ms	remaining: 3.41s
4:	learn: 0.5491032	total: 195ms	remaining: 3.32s
5:	learn: 0.5295906	total: 232ms	remaining: 3.25s
6:	learn: 0.5117232	total: 269ms	remaining: 3.18s
7:	learn: 0.4915744	total: 314ms	remaining: 3.22s
8:	learn: 0.4701710	total: 350ms	remaining: 3.15s
9:	learn: 0.4510586	total: 386ms	remaining: 3.09s
10:	learn: 0.4342654	total: 423ms	remaining: 3.03s
11:	learn: 0.4169922	total: 459ms	remaining: 2.98s
12:	learn: 0.4047689	total: 501ms	remaining: 2.97s
13:	learn: 0.3892958	total: 551ms	remaining: 2.99s
14:	learn: 0.3751923	total: 589ms	remaining: 2.95s
15:	learn: 0.3634858	total: 637ms	remaining: 2.95s
16:	learn: 0.3529017	total: 675ms	remaining: 2.9s
17:	learn: 0.3410812	total: 714ms	remaining: 2.85s
18:	learn: 0.3320536	total: 751ms	remaining: 2.81s
19:	learn: 0.3239706	total: 802ms	remaining: 2.81s
20:	learn: 0.3134735	total: 838ms	remaining: 2.75s
21:	learn: 0.3061444	total: 875ms	remaining: 2.7s
22:	learn: 0.2969195	total: 912ms	remaining: 2.66s
23:	learn: 0.2910119	total: 931ms	remaining: 2.56s
24:	learn: 0.2839389	total: 975ms	remaining: 2.54s
25:	learn: 0.2786662	total: 1.01s	remaining: 2.49s
26:	learn: 0.2728345	total: 1.05s	remaining: 2.44s
27:	learn: 0.2672551	total: 1.09s	remaining: 2.41s
28:	learn: 0.2624970	total: 1.12s	remaining: 2.36s
29:	learn: 0.2553838	total: 1.16s	remaining: 2.31s
30:	learn: 0.2512006	total: 1.2s	remaining: 2.29s
31:	learn: 0.2451399	total: 1.24s	remaining: 2.25s
32:	learn: 0.2404142	total: 1.28s	remaining: 2.21s
33:	learn: 0.2357983	total: 1.32s	remaining: 2.17s
34:	learn: 0.2319253	total: 1.35s	remaining: 2.13s
35:	learn: 0.2290277	total: 1.39s	remaining: 2.09s
36:	learn: 0.2249938	total: 1.44s	remaining: 2.06s
37:	learn: 0.2209740	total: 1.47s	remaining: 2.02s
38:	learn: 0.2179076	total: 1.51s	remaining: 1.97s
39:	learn: 0.2145454	total: 1.55s	remaining: 1.93s
40:	learn: 0.2121858	total: 1.58s	remaining: 1.89s
41:	learn: 0.2082461	total: 1.62s	remaining: 1.85s
42:	learn: 0.2048335	total: 1.67s	remaining: 1.83s
43:	learn: 0.2027585	total: 1.71s	remaining: 1.79s
44:	learn: 0.1992589	total: 1.75s	remaining: 1.75s
45:	learn: 0.1964910	total: 1.78s	remaining: 1.71s
46:	learn: 0.1951188	total: 1.82s	remaining: 1.67s
47:	learn: 0.1919594	total: 1.86s	remaining: 1.62s
48:	learn: 0.1894465	total: 1.92s	remaining: 1.61s
49:	learn: 0.1869043	total: 1.96s	remaining: 1.57s
50:	learn: 0.1851982	total: 2s	remaining: 1.53s
51:	learn: 0.1830122	total: 2.03s	remaining: 1.49s
52:	learn: 0.1809379	total: 2.07s	remaining: 1.45s
53:	learn: 0.1788723	total: 2.11s	remaining: 1.41s
54:	learn: 0.1773426	total: 2.16s	remaining: 1.37s

55:	learn: 0.1752839	total: 2.19s	remaining: 1.33s
56:	learn: 0.1737877	total: 2.23s	remaining: 1.29s
57:	learn: 0.1726799	total: 2.27s	remaining: 1.25s
58:	learn: 0.1714130	total: 2.3s	remaining: 1.21s
59:	learn: 0.1699208	total: 2.34s	remaining: 1.17s
60:	learn: 0.1686267	total: 2.39s	remaining: 1.13s
61:	learn: 0.1671627	total: 2.42s	remaining: 1.09s
62:	learn: 0.1658349	total: 2.46s	remaining: 1.05s
63:	learn: 0.1648268	total: 2.5s	remaining: 1.01s
64:	learn: 0.1639074	total: 2.53s	remaining: 974ms
65:	learn: 0.1622544	total: 2.57s	remaining: 934ms
66:	learn: 0.1610816	total: 2.62s	remaining: 899ms
67:	learn: 0.1601877	total: 2.66s	remaining: 861ms
68:	learn: 0.1587445	total: 2.7s	remaining: 822ms
69:	learn: 0.1574988	total: 2.74s	remaining: 782ms
70:	learn: 0.1567376	total: 2.77s	remaining: 742ms
71:	learn: 0.1553454	total: 2.81s	remaining: 703ms
72:	learn: 0.1547836	total: 2.86s	remaining: 666ms
73:	learn: 0.1535685	total: 2.9s	remaining: 626ms
74:	learn: 0.1527625	total: 2.93s	remaining: 587ms
75:	learn: 0.1515653	total: 2.97s	remaining: 547ms
76:	learn: 0.1507346	total: 3.01s	remaining: 508ms
77:	learn: 0.1497179	total: 3.04s	remaining: 468ms
78:	learn: 0.1485490	total: 3.09s	remaining: 430ms
79:	learn: 0.1477469	total: 3.13s	remaining: 391ms
80:	learn: 0.1469619	total: 3.17s	remaining: 352ms
81:	learn: 0.1458141	total: 3.2s	remaining: 313ms
82:	learn: 0.1448456	total: 3.24s	remaining: 273ms
83:	learn: 0.1441071	total: 3.28s	remaining: 234ms
84:	learn: 0.1431180	total: 3.32s	remaining: 195ms
85:	learn: 0.1423806	total: 3.36s	remaining: 156ms
86:	learn: 0.1413884	total: 3.4s	remaining: 117ms
87:	learn: 0.1409044	total: 3.43s	remaining: 78ms
88:	learn: 0.1399184	total: 3.47s	remaining: 39ms
89:	learn: 0.1392245	total: 3.51s	remaining: 0us
0:	learn: 0.6518949	total: 52.5ms	remaining: 4.68s
1:	learn: 0.6062164	total: 90.4ms	remaining: 3.98s
2:	learn: 0.5673831	total: 128ms	remaining: 3.7s
3:	learn: 0.5303763	total: 165ms	remaining: 3.55s
4:	learn: 0.4994415	total: 202ms	remaining: 3.44s
5:	learn: 0.4757570	total: 239ms	remaining: 3.35s
6:	learn: 0.4541921	total: 285ms	remaining: 3.38s
7:	learn: 0.4331930	total: 323ms	remaining: 3.31s
8:	learn: 0.4115985	total: 359ms	remaining: 3.23s
9:	learn: 0.3898494	total: 396ms	remaining: 3.17s
10:	learn: 0.3717176	total: 432ms	remaining: 3.1s
11:	learn: 0.3536362	total: 468ms	remaining: 3.04s
12:	learn: 0.3414317	total: 513ms	remaining: 3.04s
13:	learn: 0.3300010	total: 550ms	remaining: 2.98s
14:	learn: 0.3153863	total: 586ms	remaining: 2.93s
15:	learn: 0.3044169	total: 622ms	remaining: 2.88s
16:	learn: 0.2942610	total: 642ms	remaining: 2.76s
17:	learn: 0.2828634	total: 678ms	remaining: 2.71s
18:	learn: 0.2752138	total: 727ms	remaining: 2.72s
19:	learn: 0.2665403	total: 781ms	remaining: 2.73s
20:	learn: 0.2569809	total: 817ms	remaining: 2.68s
21:	learn: 0.2512699	total: 851ms	remaining: 2.63s
22:	learn: 0.2441609	total: 889ms	remaining: 2.59s
23:	learn: 0.2398388	total: 925ms	remaining: 2.54s
24:	learn: 0.2354055	total: 932ms	remaining: 2.42s
25:	learn: 0.2311587	total: 970ms	remaining: 2.39s
26:	learn: 0.2256353	total: 1s	remaining: 2.35s
27:	learn: 0.2205951	total: 1.05s	remaining: 2.33s
28:	learn: 0.2167488	total: 1.09s	remaining: 2.29s
29:	learn: 0.2133685	total: 1.12s	remaining: 2.25s
30:	learn: 0.2093162	total: 1.17s	remaining: 2.23s
31:	learn: 0.2072354	total: 1.21s	remaining: 2.19s
32:	learn: 0.2032979	total: 1.24s	remaining: 2.15s
33:	learn: 0.1995165	total: 1.28s	remaining: 2.1s
34:	learn: 0.1960965	total: 1.31s	remaining: 2.07s
35:	learn: 0.1942163	total: 1.32s	remaining: 1.99s
36:	learn: 0.1913105	total: 1.36s	remaining: 1.95s
37:	learn: 0.1894032	total: 1.4s	remaining: 1.91s
38:	learn: 0.1868027	total: 1.43s	remaining: 1.87s
39:	learn: 0.1835597	total: 1.47s	remaining: 1.83s
40:	learn: 0.1804997	total: 1.5s	remaining: 1.8s
41:	learn: 0.1784591	total: 1.55s	remaining: 1.77s
42:	learn: 0.1764678	total: 1.59s	remaining: 1.74s
43:	learn: 0.1747860	total: 1.63s	remaining: 1.7s
44:	learn: 0.1739712	total: 1.67s	remaining: 1.67s
45:	learn: 0.1716544	total: 1.7s	remaining: 1.63s
46:	learn: 0.1698876	total: 1.74s	remaining: 1.59s
47:	learn: 0.1686328	total: 1.78s	remaining: 1.56s
48:	learn: 0.1671131	total: 1.82s	remaining: 1.52s
49:	learn: 0.1658188	total: 1.86s	remaining: 1.49s
50:	learn: 0.1642036	total: 1.9s	remaining: 1.45s
51:	learn: 0.1631039	total: 1.93s	remaining: 1.41s
52:	learn: 0.1620387	total: 1.97s	remaining: 1.38s
53:	learn: 0.1607973	total: 2.02s	remaining: 1.34s
54:	learn: 0.1598126	total: 2.06s	remaining: 1.31s
55:	learn: 0.1588643	total: 2.1s	remaining: 1.27s
56:	learn: 0.1581679	total: 2.14s	remaining: 1.24s
57:	learn: 0.1565681	total: 2.17s	remaining: 1.2s
58:	learn: 0.1549369	total: 2.21s	remaining: 1.16s
59:	learn: 0.1537222	total: 2.25s	remaining: 1.13s
60:	learn: 0.1530963	total: 2.29s	remaining: 1.09s
61:	learn: 0.1525169	total: 2.32s	remaining: 1.05s
62:	learn: 0.1511220	total: 2.36s	remaining: 1.01s
63:	learn: 0.1503056	total: 2.4s	remaining: 974ms
64:	learn: 0.1490784	total: 2.43s	remaining: 936ms
65:	learn: 0.1473700	total: 2.48s	remaining: 900ms
66:	learn: 0.1457683	total: 2.51s	remaining: 862ms

67:	learn: 0.1449296	total: 2.55s	remaining: 824ms
68:	learn: 0.1438806	total: 2.58s	remaining: 786ms
69:	learn: 0.1434154	total: 2.62s	remaining: 748ms
70:	learn: 0.1419217	total: 2.65s	remaining: 710ms
71:	learn: 0.1411224	total: 2.7s	remaining: 675ms
72:	learn: 0.1406366	total: 2.73s	remaining: 637ms
73:	learn: 0.1402358	total: 2.77s	remaining: 599ms
74:	learn: 0.1389942	total: 2.81s	remaining: 561ms
75:	learn: 0.1385297	total: 2.84s	remaining: 524ms
76:	learn: 0.1380696	total: 2.88s	remaining: 486ms
77:	learn: 0.1369878	total: 2.92s	remaining: 450ms
78:	learn: 0.1361059	total: 2.96s	remaining: 412ms
79:	learn: 0.1354258	total: 3s	remaining: 375ms
80:	learn: 0.1348941	total: 3.03s	remaining: 337ms
81:	learn: 0.1345502	total: 3.08s	remaining: 301ms
82:	learn: 0.1341479	total: 3.12s	remaining: 263ms
83:	learn: 0.1332549	total: 3.16s	remaining: 226ms
84:	learn: 0.1326225	total: 3.2s	remaining: 188ms
85:	learn: 0.1321774	total: 3.24s	remaining: 151ms
86:	learn: 0.1310336	total: 3.27s	remaining: 113ms
87:	learn: 0.1306396	total: 3.31s	remaining: 75.2ms
88:	learn: 0.1298400	total: 3.35s	remaining: 37.6ms
89:	learn: 0.1294746	total: 3.39s	remaining: 0us
0:	learn: 0.6509719	total: 35.4ms	remaining: 3.15s
1:	learn: 0.6020890	total: 70.2ms	remaining: 3.09s
2:	learn: 0.5654535	total: 113ms	remaining: 3.28s
3:	learn: 0.5294275	total: 149ms	remaining: 3.2s
4:	learn: 0.4956424	total: 184ms	remaining: 3.13s
5:	learn: 0.4661586	total: 220ms	remaining: 3.08s
6:	learn: 0.4445128	total: 255ms	remaining: 3.03s
7:	learn: 0.4211374	total: 291ms	remaining: 2.98s
8:	learn: 0.3955347	total: 337ms	remaining: 3.03s
9:	learn: 0.3720148	total: 374ms	remaining: 2.99s
10:	learn: 0.3523635	total: 410ms	remaining: 2.95s
11:	learn: 0.3347254	total: 453ms	remaining: 2.94s
12:	learn: 0.3230482	total: 491ms	remaining: 2.91s
13:	learn: 0.3065965	total: 528ms	remaining: 2.87s
14:	learn: 0.2970749	total: 579ms	remaining: 2.89s
15:	learn: 0.2871629	total: 614ms	remaining: 2.84s
16:	learn: 0.2770954	total: 633ms	remaining: 2.72s
17:	learn: 0.2679117	total: 668ms	remaining: 2.67s
18:	learn: 0.2601215	total: 704ms	remaining: 2.63s
19:	learn: 0.2514976	total: 740ms	remaining: 2.59s
20:	learn: 0.2431400	total: 777ms	remaining: 2.55s
21:	learn: 0.2372216	total: 825ms	remaining: 2.55s
22:	learn: 0.2289316	total: 861ms	remaining: 2.51s
23:	learn: 0.2245784	total: 898ms	remaining: 2.47s
24:	learn: 0.2197266	total: 933ms	remaining: 2.42s
25:	learn: 0.2159343	total: 973ms	remaining: 2.39s
26:	learn: 0.2115738	total: 1.02s	remaining: 2.37s
27:	learn: 0.2078047	total: 1.05s	remaining: 2.33s
28:	learn: 0.2042431	total: 1.09s	remaining: 2.29s
29:	learn: 0.2002614	total: 1.12s	remaining: 2.25s
30:	learn: 0.1960065	total: 1.16s	remaining: 2.2s
31:	learn: 0.1920293	total: 1.19s	remaining: 2.16s
32:	learn: 0.1889482	total: 1.24s	remaining: 2.14s
33:	learn: 0.1854658	total: 1.27s	remaining: 2.1s
34:	learn: 0.1812703	total: 1.31s	remaining: 2.06s
35:	learn: 0.1791590	total: 1.34s	remaining: 2.02s
36:	learn: 0.1759942	total: 1.38s	remaining: 1.98s
37:	learn: 0.1722047	total: 1.42s	remaining: 1.94s
38:	learn: 0.1698119	total: 1.46s	remaining: 1.91s
39:	learn: 0.1671544	total: 1.5s	remaining: 1.88s
40:	learn: 0.1654468	total: 1.54s	remaining: 1.84s
41:	learn: 0.1632825	total: 1.58s	remaining: 1.81s
42:	learn: 0.1619266	total: 1.62s	remaining: 1.77s
43:	learn: 0.1601512	total: 1.66s	remaining: 1.73s
44:	learn: 0.1574705	total: 1.7s	remaining: 1.7s
45:	learn: 0.1550155	total: 1.74s	remaining: 1.66s
46:	learn: 0.1540709	total: 1.77s	remaining: 1.62s
47:	learn: 0.1522576	total: 1.81s	remaining: 1.58s
48:	learn: 0.1509553	total: 1.85s	remaining: 1.54s
49:	learn: 0.1492534	total: 1.88s	remaining: 1.5s
50:	learn: 0.1472910	total: 1.93s	remaining: 1.47s
51:	learn: 0.1456915	total: 1.96s	remaining: 1.44s
52:	learn: 0.1441786	total: 2s	remaining: 1.4s
53:	learn: 0.1430157	total: 2.04s	remaining: 1.36s
54:	learn: 0.1419859	total: 2.08s	remaining: 1.32s
55:	learn: 0.1410462	total: 2.11s	remaining: 1.28s
56:	learn: 0.1401587	total: 2.16s	remaining: 1.25s
57:	learn: 0.1387045	total: 2.19s	remaining: 1.21s
58:	learn: 0.1379444	total: 2.23s	remaining: 1.17s
59:	learn: 0.1372372	total: 2.26s	remaining: 1.13s
60:	learn: 0.1362886	total: 2.3s	remaining: 1.09s
61:	learn: 0.1348591	total: 2.34s	remaining: 1.05s
62:	learn: 0.1341841	total: 2.38s	remaining: 1.02s
63:	learn: 0.1333220	total: 2.42s	remaining: 983ms
64:	learn: 0.1320596	total: 2.46s	remaining: 945ms
65:	learn: 0.1314162	total: 2.49s	remaining: 907ms
66:	learn: 0.1299314	total: 2.53s	remaining: 869ms
67:	learn: 0.1286896	total: 2.57s	remaining: 831ms
68:	learn: 0.1277527	total: 2.62s	remaining: 798ms
69:	learn: 0.1262683	total: 2.66s	remaining: 760ms
70:	learn: 0.1259701	total: 2.7s	remaining: 722ms
71:	learn: 0.1248108	total: 2.74s	remaining: 684ms
72:	learn: 0.1243836	total: 2.77s	remaining: 646ms
73:	learn: 0.1234801	total: 2.81s	remaining: 608ms
74:	learn: 0.1226632	total: 2.85s	remaining: 571ms
75:	learn: 0.1220415	total: 2.89s	remaining: 533ms
76:	learn: 0.1213101	total: 2.93s	remaining: 494ms
77:	learn: 0.1208564	total: 2.96s	remaining: 456ms
78:	learn: 0.1201675	total: 3s	remaining: 418ms

79:	learn: 0.1195695	total: 3.04s	remaining: 380ms
80:	learn: 0.1187882	total: 3.08s	remaining: 342ms
81:	learn: 0.1182363	total: 3.12s	remaining: 304ms
82:	learn: 0.1178774	total: 3.16s	remaining: 266ms
83:	learn: 0.1169741	total: 3.19s	remaining: 228ms
84:	learn: 0.1164734	total: 3.23s	remaining: 190ms
85:	learn: 0.1159817	total: 3.26s	remaining: 152ms
86:	learn: 0.1153952	total: 3.31s	remaining: 114ms
87:	learn: 0.1150138	total: 3.35s	remaining: 76ms
88:	learn: 0.1141695	total: 3.38s	remaining: 38ms
89:	learn: 0.1135582	total: 3.42s	remaining: 0us
0:	learn: 0.6508348	total: 45.4ms	remaining: 4.04s
1:	learn: 0.6078480	total: 83ms	remaining: 3.65s
2:	learn: 0.5670973	total: 125ms	remaining: 3.64s
3:	learn: 0.5283949	total: 164ms	remaining: 3.53s
4:	learn: 0.4959166	total: 201ms	remaining: 3.42s
5:	learn: 0.4712487	total: 237ms	remaining: 3.32s
6:	learn: 0.4493432	total: 285ms	remaining: 3.38s
7:	learn: 0.4251239	total: 323ms	remaining: 3.31s
8:	learn: 0.4000466	total: 360ms	remaining: 3.24s
9:	learn: 0.3790972	total: 397ms	remaining: 3.17s
10:	learn: 0.3608026	total: 438ms	remaining: 3.14s
11:	learn: 0.3426061	total: 475ms	remaining: 3.09s
12:	learn: 0.3307967	total: 522ms	remaining: 3.09s
13:	learn: 0.3152901	total: 562ms	remaining: 3.05s
14:	learn: 0.3016123	total: 599ms	remaining: 3s
15:	learn: 0.2907064	total: 640ms	remaining: 2.96s
16:	learn: 0.2790097	total: 677ms	remaining: 2.91s
17:	learn: 0.2687192	total: 715ms	remaining: 2.86s
18:	learn: 0.2604770	total: 764ms	remaining: 2.85s
19:	learn: 0.2538520	total: 801ms	remaining: 2.8s
20:	learn: 0.2452745	total: 837ms	remaining: 2.75s
21:	learn: 0.2397876	total: 873ms	remaining: 2.7s
22:	learn: 0.2323341	total: 909ms	remaining: 2.65s
23:	learn: 0.2281031	total: 930ms	remaining: 2.56s
24:	learn: 0.2239697	total: 967ms	remaining: 2.51s
25:	learn: 0.2177234	total: 1.01s	remaining: 2.48s
26:	learn: 0.2136502	total: 1.05s	remaining: 2.46s
27:	learn: 0.2095310	total: 1.09s	remaining: 2.42s
28:	learn: 0.2062731	total: 1.13s	remaining: 2.38s
29:	learn: 0.2011577	total: 1.17s	remaining: 2.33s
30:	learn: 0.1975007	total: 1.21s	remaining: 2.31s
31:	learn: 0.1929600	total: 1.25s	remaining: 2.26s
32:	learn: 0.1897422	total: 1.28s	remaining: 2.22s
33:	learn: 0.1859675	total: 1.32s	remaining: 2.18s
34:	learn: 0.1827021	total: 1.36s	remaining: 2.13s
35:	learn: 0.1799893	total: 1.39s	remaining: 2.09s
36:	learn: 0.1769820	total: 1.44s	remaining: 2.06s
37:	learn: 0.1735673	total: 1.48s	remaining: 2.02s
38:	learn: 0.1708026	total: 1.51s	remaining: 1.98s
39:	learn: 0.1689116	total: 1.55s	remaining: 1.94s
40:	learn: 0.1673618	total: 1.59s	remaining: 1.9s
41:	learn: 0.1651040	total: 1.63s	remaining: 1.86s
42:	learn: 0.1638129	total: 1.68s	remaining: 1.84s
43:	learn: 0.1624469	total: 1.73s	remaining: 1.81s
44:	learn: 0.1601504	total: 1.78s	remaining: 1.78s
45:	learn: 0.1581727	total: 1.82s	remaining: 1.74s
46:	learn: 0.1560981	total: 1.86s	remaining: 1.7s
47:	learn: 0.1540697	total: 1.9s	remaining: 1.67s
48:	learn: 0.1529908	total: 1.95s	remaining: 1.63s
49:	learn: 0.1512204	total: 1.99s	remaining: 1.59s
50:	learn: 0.1493843	total: 2.02s	remaining: 1.55s
51:	learn: 0.1479547	total: 2.07s	remaining: 1.51s
52:	learn: 0.1462726	total: 2.12s	remaining: 1.48s
53:	learn: 0.1448924	total: 2.16s	remaining: 1.44s
54:	learn: 0.1439185	total: 2.2s	remaining: 1.4s
55:	learn: 0.1427119	total: 2.23s	remaining: 1.36s
56:	learn: 0.1418941	total: 2.27s	remaining: 1.31s
57:	learn: 0.1409165	total: 2.31s	remaining: 1.27s
58:	learn: 0.1398811	total: 2.36s	remaining: 1.24s
59:	learn: 0.1388896	total: 2.39s	remaining: 1.2s
60:	learn: 0.1375950	total: 2.43s	remaining: 1.16s
61:	learn: 0.1359916	total: 2.47s	remaining: 1.11s
62:	learn: 0.1352204	total: 2.5s	remaining: 1.07s
63:	learn: 0.1343825	total: 2.54s	remaining: 1.03s
64:	learn: 0.1336517	total: 2.59s	remaining: 996ms
65:	learn: 0.1329526	total: 2.63s	remaining: 956ms
66:	learn: 0.1322706	total: 2.67s	remaining: 915ms
67:	learn: 0.1309894	total: 2.7s	remaining: 875ms
68:	learn: 0.1303127	total: 2.74s	remaining: 834ms
69:	learn: 0.1293494	total: 2.78s	remaining: 794ms
70:	learn: 0.1287864	total: 2.82s	remaining: 756ms
71:	learn: 0.1280322	total: 2.86s	remaining: 715ms
72:	learn: 0.1271478	total: 2.9s	remaining: 675ms
73:	learn: 0.1267795	total: 2.93s	remaining: 635ms
74:	learn: 0.1264190	total: 2.97s	remaining: 594ms
75:	learn: 0.1257775	total: 3.01s	remaining: 554ms
76:	learn: 0.1252302	total: 3.06s	remaining: 517ms
77:	learn: 0.1247103	total: 3.11s	remaining: 478ms
78:	learn: 0.1243571	total: 3.15s	remaining: 438ms
79:	learn: 0.1235042	total: 3.18s	remaining: 398ms
80:	learn: 0.1224668	total: 3.22s	remaining: 358ms
81:	learn: 0.1218732	total: 3.26s	remaining: 318ms
82:	learn: 0.1213002	total: 3.3s	remaining: 279ms
83:	learn: 0.1206586	total: 3.34s	remaining: 239ms
84:	learn: 0.1197062	total: 3.38s	remaining: 199ms
85:	learn: 0.1192002	total: 3.42s	remaining: 159ms
86:	learn: 0.1184944	total: 3.45s	remaining: 119ms
87:	learn: 0.1181843	total: 3.49s	remaining: 79.3ms
88:	learn: 0.1174818	total: 3.54s	remaining: 39.7ms
89:	learn: 0.1168280	total: 3.57s	remaining: 0us
0:	learn: 0.6386549	total: 35.2ms	remaining: 3.13s

1:	learn: 0.5794667	total: 82.6ms	remaining: 3.63s
2:	learn: 0.5350597	total: 120ms	remaining: 3.49s
3:	learn: 0.4902950	total: 158ms	remaining: 3.4s
4:	learn: 0.4542138	total: 195ms	remaining: 3.32s
5:	learn: 0.4276605	total: 232ms	remaining: 3.24s
6:	learn: 0.4042525	total: 270ms	remaining: 3.2s
7:	learn: 0.3819469	total: 316ms	remaining: 3.24s
8:	learn: 0.3594459	total: 354ms	remaining: 3.18s
9:	learn: 0.3372844	total: 401ms	remaining: 3.21s
10:	learn: 0.3195579	total: 438ms	remaining: 3.14s
11:	learn: 0.3025844	total: 476ms	remaining: 3.09s
12:	learn: 0.2914362	total: 513ms	remaining: 3.04s
13:	learn: 0.2812717	total: 559ms	remaining: 3.03s
14:	learn: 0.2681212	total: 593ms	remaining: 2.96s
15:	learn: 0.2576900	total: 628ms	remaining: 2.9s
16:	learn: 0.2477187	total: 663ms	remaining: 2.85s
17:	learn: 0.2396752	total: 698ms	remaining: 2.79s
18:	learn: 0.2331245	total: 735ms	remaining: 2.75s
19:	learn: 0.2258934	total: 779ms	remaining: 2.73s
20:	learn: 0.2202542	total: 818ms	remaining: 2.69s
21:	learn: 0.2158870	total: 854ms	remaining: 2.64s
22:	learn: 0.2099379	total: 889ms	remaining: 2.59s
23:	learn: 0.2056097	total: 924ms	remaining: 2.54s
24:	learn: 0.2019088	total: 960ms	remaining: 2.5s
25:	learn: 0.1984477	total: 1s	remaining: 2.48s
26:	learn: 0.1953531	total: 1.04s	remaining: 2.43s
27:	learn: 0.1919639	total: 1.08s	remaining: 2.39s
28:	learn: 0.1886041	total: 1.11s	remaining: 2.35s
29:	learn: 0.1851554	total: 1.15s	remaining: 2.3s
30:	learn: 0.1823516	total: 1.19s	remaining: 2.26s
31:	learn: 0.1794975	total: 1.24s	remaining: 2.24s
32:	learn: 0.1772368	total: 1.27s	remaining: 2.2s
33:	learn: 0.1736062	total: 1.31s	remaining: 2.16s
34:	learn: 0.1703676	total: 1.35s	remaining: 2.12s
35:	learn: 0.1690795	total: 1.4s	remaining: 2.09s
36:	learn: 0.1662960	total: 1.43s	remaining: 2.05s
37:	learn: 0.1643045	total: 1.48s	remaining: 2.03s
38:	learn: 0.1625412	total: 1.52s	remaining: 1.99s
39:	learn: 0.1609807	total: 1.55s	remaining: 1.94s
40:	learn: 0.1600736	total: 1.57s	remaining: 1.88s
41:	learn: 0.1586133	total: 1.61s	remaining: 1.84s
42:	learn: 0.1576141	total: 1.65s	remaining: 1.8s
43:	learn: 0.1556886	total: 1.68s	remaining: 1.76s
44:	learn: 0.1543002	total: 1.73s	remaining: 1.73s
45:	learn: 0.1531071	total: 1.77s	remaining: 1.69s
46:	learn: 0.1513682	total: 1.8s	remaining: 1.65s
47:	learn: 0.1499784	total: 1.84s	remaining: 1.61s
48:	learn: 0.1486980	total: 1.88s	remaining: 1.57s
49:	learn: 0.1478048	total: 1.93s	remaining: 1.54s
50:	learn: 0.1467731	total: 1.97s	remaining: 1.5s
51:	learn: 0.1458016	total: 2s	remaining: 1.46s
52:	learn: 0.1448808	total: 2.04s	remaining: 1.42s
53:	learn: 0.1439293	total: 2.07s	remaining: 1.38s
54:	learn: 0.1432615	total: 2.11s	remaining: 1.34s
55:	learn: 0.1427114	total: 2.15s	remaining: 1.31s
56:	learn: 0.1413225	total: 2.19s	remaining: 1.27s
57:	learn: 0.1402600	total: 2.23s	remaining: 1.23s
58:	learn: 0.1397467	total: 2.26s	remaining: 1.19s
59:	learn: 0.1388832	total: 2.3s	remaining: 1.15s
60:	learn: 0.1382990	total: 2.33s	remaining: 1.11s
61:	learn: 0.1371017	total: 2.38s	remaining: 1.07s
62:	learn: 0.1365238	total: 2.42s	remaining: 1.04s
63:	learn: 0.1355235	total: 2.46s	remaining: 998ms
64:	learn: 0.1345921	total: 2.5s	remaining: 960ms
65:	learn: 0.1329527	total: 2.53s	remaining: 920ms
66:	learn: 0.1316435	total: 2.56s	remaining: 881ms
67:	learn: 0.1309579	total: 2.61s	remaining: 845ms
68:	learn: 0.1301546	total: 2.65s	remaining: 806ms
69:	learn: 0.1298815	total: 2.67s	remaining: 762ms
70:	learn: 0.1290126	total: 2.7s	remaining: 723ms
71:	learn: 0.1284422	total: 2.73s	remaining: 684ms
72:	learn: 0.1278460	total: 2.77s	remaining: 645ms
73:	learn: 0.1271819	total: 2.81s	remaining: 607ms
74:	learn: 0.1260777	total: 2.85s	remaining: 570ms
75:	learn: 0.1252168	total: 2.89s	remaining: 532ms
76:	learn: 0.1250987	total: 2.9s	remaining: 489ms
77:	learn: 0.1237966	total: 2.93s	remaining: 451ms
78:	learn: 0.1230022	total: 2.97s	remaining: 413ms
79:	learn: 0.1223144	total: 3s	remaining: 376ms
80:	learn: 0.1213608	total: 3.04s	remaining: 338ms
81:	learn: 0.1204932	total: 3.09s	remaining: 301ms
82:	learn: 0.1200936	total: 3.12s	remaining: 263ms
83:	learn: 0.1197604	total: 3.16s	remaining: 226ms
84:	learn: 0.1194166	total: 3.19s	remaining: 188ms
85:	learn: 0.1189244	total: 3.23s	remaining: 150ms
86:	learn: 0.1180873	total: 3.26s	remaining: 113ms
87:	learn: 0.1170968	total: 3.31s	remaining: 75.1ms
88:	learn: 0.1165278	total: 3.35s	remaining: 37.6ms
89:	learn: 0.1160324	total: 3.38s	remaining: 0us
0:	learn: 0.6374431	total: 50ms	remaining: 4.45s
1:	learn: 0.5752510	total: 88ms	remaining: 3.87s
2:	learn: 0.5299881	total: 126ms	remaining: 3.64s
3:	learn: 0.4868399	total: 163ms	remaining: 3.5s
4:	learn: 0.4476466	total: 200ms	remaining: 3.4s
5:	learn: 0.4194563	total: 237ms	remaining: 3.32s
6:	learn: 0.3957873	total: 284ms	remaining: 3.36s
7:	learn: 0.3706250	total: 318ms	remaining: 3.26s
8:	learn: 0.3433542	total: 354ms	remaining: 3.18s
9:	learn: 0.3192400	total: 389ms	remaining: 3.11s
10:	learn: 0.3003060	total: 426ms	remaining: 3.06s
11:	learn: 0.2837023	total: 463ms	remaining: 3.01s
12:	learn: 0.2738870	total: 506ms	remaining: 2.99s



13:	learn: 0.2590565	total: 540ms	remaining: 2.93s
14:	learn: 0.2509095	total: 575ms	remaining: 2.87s
15:	learn: 0.2417859	total: 610ms	remaining: 2.82s
16:	learn: 0.2320056	total: 647ms	remaining: 2.78s
17:	learn: 0.2246093	total: 683ms	remaining: 2.73s
18:	learn: 0.2181759	total: 732ms	remaining: 2.73s
19:	learn: 0.2108050	total: 778ms	remaining: 2.72s
20:	learn: 0.2034753	total: 815ms	remaining: 2.68s
21:	learn: 0.1992330	total: 852ms	remaining: 2.63s
22:	learn: 0.1932955	total: 890ms	remaining: 2.59s
23:	learn: 0.1896366	total: 940ms	remaining: 2.59s
24:	learn: 0.1862890	total: 981ms	remaining: 2.55s
25:	learn: 0.1832150	total: 1.02s	remaining: 2.51s
26:	learn: 0.1790708	total: 1.06s	remaining: 2.47s
27:	learn: 0.1757052	total: 1.09s	remaining: 2.42s
28:	learn: 0.1729793	total: 1.13s	remaining: 2.38s
29:	learn: 0.1698562	total: 1.18s	remaining: 2.35s
30:	learn: 0.1674814	total: 1.21s	remaining: 2.31s
31:	learn: 0.1639651	total: 1.25s	remaining: 2.27s
32:	learn: 0.1622546	total: 1.29s	remaining: 2.23s
33:	learn: 0.1598741	total: 1.32s	remaining: 2.18s
34:	learn: 0.1568186	total: 1.36s	remaining: 2.14s
35:	learn: 0.1554774	total: 1.37s	remaining: 2.05s
36:	learn: 0.1524067	total: 1.42s	remaining: 2.03s
37:	learn: 0.1497032	total: 1.45s	remaining: 1.99s
38:	learn: 0.1482602	total: 1.49s	remaining: 1.95s
39:	learn: 0.1463871	total: 1.53s	remaining: 1.91s
40:	learn: 0.1441313	total: 1.56s	remaining: 1.87s
41:	learn: 0.1420593	total: 1.6s	remaining: 1.82s
42:	learn: 0.1406964	total: 1.64s	remaining: 1.79s
43:	learn: 0.1387918	total: 1.68s	remaining: 1.75s
44:	learn: 0.1373152	total: 1.71s	remaining: 1.71s
45:	learn: 0.1362762	total: 1.75s	remaining: 1.68s
46:	learn: 0.1348280	total: 1.79s	remaining: 1.64s
47:	learn: 0.1332868	total: 1.82s	remaining: 1.6s
48:	learn: 0.1315807	total: 1.87s	remaining: 1.56s
49:	learn: 0.1310403	total: 1.92s	remaining: 1.53s
50:	learn: 0.1302947	total: 1.96s	remaining: 1.5s
51:	learn: 0.1296517	total: 1.99s	remaining: 1.46s
52:	learn: 0.1283217	total: 2.03s	remaining: 1.42s
53:	learn: 0.1269866	total: 2.07s	remaining: 1.38s
54:	learn: 0.1264353	total: 2.11s	remaining: 1.34s
55:	learn: 0.1258286	total: 2.15s	remaining: 1.3s
56:	learn: 0.1253112	total: 2.18s	remaining: 1.26s
57:	learn: 0.1246537	total: 2.22s	remaining: 1.23s
58:	learn: 0.1243764	total: 2.26s	remaining: 1.19s
59:	learn: 0.1226823	total: 2.3s	remaining: 1.15s
60:	learn: 0.1212926	total: 2.34s	remaining: 1.11s
61:	learn: 0.1205019	total: 2.38s	remaining: 1.07s
62:	learn: 0.1195329	total: 2.42s	remaining: 1.04s
63:	learn: 0.1183307	total: 2.46s	remaining: 997ms
64:	learn: 0.1171004	total: 2.49s	remaining: 959ms
65:	learn: 0.1160221	total: 2.53s	remaining: 920ms
66:	learn: 0.1146497	total: 2.57s	remaining: 884ms
67:	learn: 0.1137710	total: 2.61s	remaining: 845ms
68:	learn: 0.1132005	total: 2.65s	remaining: 805ms
69:	learn: 0.1124286	total: 2.68s	remaining: 766ms
70:	learn: 0.1118732	total: 2.72s	remaining: 727ms
71:	learn: 0.1112495	total: 2.75s	remaining: 688ms
72:	learn: 0.1102018	total: 2.8s	remaining: 652ms
73:	learn: 0.1089826	total: 2.84s	remaining: 614ms
74:	learn: 0.1085821	total: 2.87s	remaining: 575ms
75:	learn: 0.1079499	total: 2.91s	remaining: 536ms
76:	learn: 0.1075228	total: 2.95s	remaining: 499ms
77:	learn: 0.1069206	total: 2.99s	remaining: 460ms
78:	learn: 0.1052506	total: 3.03s	remaining: 422ms
79:	learn: 0.1046080	total: 3.07s	remaining: 384ms
80:	learn: 0.1041675	total: 3.11s	remaining: 345ms
81:	learn: 0.1029500	total: 3.14s	remaining: 307ms
82:	learn: 0.1018841	total: 3.18s	remaining: 268ms
83:	learn: 0.1013749	total: 3.22s	remaining: 230ms
84:	learn: 0.1011997	total: 3.26s	remaining: 192ms
85:	learn: 0.1007905	total: 3.3s	remaining: 154ms
86:	learn: 0.0996097	total: 3.34s	remaining: 115ms
87:	learn: 0.0991499	total: 3.38s	remaining: 76.8ms
88:	learn: 0.0987371	total: 3.42s	remaining: 38.4ms
89:	learn: 0.0984127	total: 3.46s	remaining: 0us
0:	learn: 0.6372622	total: 38.2ms	remaining: 3.4s
1:	learn: 0.5821484	total: 75.7ms	remaining: 3.33s
2:	learn: 0.5311700	total: 115ms	remaining: 3.34s
3:	learn: 0.4847543	total: 153ms	remaining: 3.3s
4:	learn: 0.4424854	total: 192ms	remaining: 3.26s
5:	learn: 0.4155755	total: 230ms	remaining: 3.22s
6:	learn: 0.3923856	total: 278ms	remaining: 3.29s
7:	learn: 0.3672231	total: 317ms	remaining: 3.25s
8:	learn: 0.3396370	total: 361ms	remaining: 3.25s
9:	learn: 0.3190827	total: 399ms	remaining: 3.19s
10:	learn: 0.3014143	total: 435ms	remaining: 3.13s
11:	learn: 0.2851881	total: 475ms	remaining: 3.09s
12:	learn: 0.2731118	total: 523ms	remaining: 3.1s
13:	learn: 0.2589528	total: 560ms	remaining: 3.04s
14:	learn: 0.2477758	total: 597ms	remaining: 2.98s
15:	learn: 0.2378747	total: 633ms	remaining: 2.93s
16:	learn: 0.2285734	total: 669ms	remaining: 2.87s
17:	learn: 0.2202184	total: 705ms	remaining: 2.82s
18:	learn: 0.2134150	total: 749ms	remaining: 2.8s
19:	learn: 0.2059357	total: 785ms	remaining: 2.75s
20:	learn: 0.1996082	total: 822ms	remaining: 2.7s
21:	learn: 0.1955997	total: 859ms	remaining: 2.65s
22:	learn: 0.1921818	total: 898ms	remaining: 2.62s
23:	learn: 0.1884246	total: 934ms	remaining: 2.57s
24:	learn: 0.1851933	total: 979ms	remaining: 2.54s

25:	learn: 0.1828785	total: 1.02s	remaining: 2.5s
26:	learn: 0.1801108	total: 1.05s	remaining: 2.46s
27:	learn: 0.1770605	total: 1.09s	remaining: 2.41s
28:	learn: 0.1740757	total: 1.13s	remaining: 2.37s
29:	learn: 0.1711643	total: 1.16s	remaining: 2.32s
30:	learn: 0.1677197	total: 1.21s	remaining: 2.29s
31:	learn: 0.1647914	total: 1.24s	remaining: 2.25s
32:	learn: 0.1619562	total: 1.28s	remaining: 2.21s
33:	learn: 0.1599197	total: 1.32s	remaining: 2.17s
34:	learn: 0.1581559	total: 1.35s	remaining: 2.13s
35:	learn: 0.1565452	total: 1.4s	remaining: 2.1s
36:	learn: 0.1539540	total: 1.44s	remaining: 2.07s
37:	learn: 0.1519285	total: 1.48s	remaining: 2.03s
38:	learn: 0.1501880	total: 1.52s	remaining: 1.99s
39:	learn: 0.1477981	total: 1.56s	remaining: 1.95s
40:	learn: 0.1458797	total: 1.59s	remaining: 1.9s
41:	learn: 0.1442349	total: 1.63s	remaining: 1.86s
42:	learn: 0.1420435	total: 1.69s	remaining: 1.85s
43:	learn: 0.1403873	total: 1.74s	remaining: 1.82s
44:	learn: 0.1395320	total: 1.78s	remaining: 1.78s
45:	learn: 0.1390222	total: 1.82s	remaining: 1.74s
46:	learn: 0.1372055	total: 1.85s	remaining: 1.7s
47:	learn: 0.1355598	total: 1.89s	remaining: 1.65s
48:	learn: 0.1339611	total: 1.94s	remaining: 1.62s
49:	learn: 0.1322620	total: 1.98s	remaining: 1.58s
50:	learn: 0.1306658	total: 2.02s	remaining: 1.54s
51:	learn: 0.1293790	total: 2.05s	remaining: 1.5s
52:	learn: 0.1285210	total: 2.1s	remaining: 1.46s
53:	learn: 0.1275680	total: 2.14s	remaining: 1.43s
54:	learn: 0.1266398	total: 2.17s	remaining: 1.38s
55:	learn: 0.1259895	total: 2.21s	remaining: 1.34s
56:	learn: 0.1249748	total: 2.25s	remaining: 1.3s
57:	learn: 0.1246202	total: 2.28s	remaining: 1.26s
58:	learn: 0.1241579	total: 2.33s	remaining: 1.22s
59:	learn: 0.1234748	total: 2.37s	remaining: 1.19s
60:	learn: 0.1223103	total: 2.41s	remaining: 1.15s
61:	learn: 0.1212888	total: 2.45s	remaining: 1.1s
62:	learn: 0.1204776	total: 2.48s	remaining: 1.06s
63:	learn: 0.1193016	total: 2.52s	remaining: 1.02s
64:	learn: 0.1181517	total: 2.57s	remaining: 987ms
65:	learn: 0.1171216	total: 2.6s	remaining: 947ms
66:	learn: 0.1169030	total: 2.65s	remaining: 909ms
67:	learn: 0.1154282	total: 2.68s	remaining: 869ms
68:	learn: 0.1143278	total: 2.72s	remaining: 828ms
69:	learn: 0.1131315	total: 2.76s	remaining: 788ms
70:	learn: 0.1118958	total: 2.81s	remaining: 751ms
71:	learn: 0.1112121	total: 2.85s	remaining: 711ms
72:	learn: 0.1104776	total: 2.88s	remaining: 672ms
73:	learn: 0.1094043	total: 2.92s	remaining: 632ms
74:	learn: 0.1091325	total: 2.96s	remaining: 592ms
75:	learn: 0.1081689	total: 3s	remaining: 552ms
76:	learn: 0.1073146	total: 3.04s	remaining: 514ms
77:	learn: 0.1064339	total: 3.08s	remaining: 474ms
78:	learn: 0.1061093	total: 3.12s	remaining: 434ms
79:	learn: 0.1053258	total: 3.15s	remaining: 394ms
80:	learn: 0.1049294	total: 3.19s	remaining: 354ms
81:	learn: 0.1044174	total: 3.23s	remaining: 315ms
82:	learn: 0.1035921	total: 3.27s	remaining: 276ms
83:	learn: 0.1033028	total: 3.31s	remaining: 237ms
84:	learn: 0.1024661	total: 3.35s	remaining: 197ms
85:	learn: 0.1023975	total: 3.35s	remaining: 156ms
86:	learn: 0.1022069	total: 3.4s	remaining: 117ms
87:	learn: 0.1013134	total: 3.43s	remaining: 78ms
88:	learn: 0.1006822	total: 3.47s	remaining: 39ms
89:	learn: 0.1000489	total: 3.52s	remaining: 0us
0:	learn: 0.6791407	total: 39.3ms	remaining: 3.89s
1:	learn: 0.6627167	total: 76.1ms	remaining: 3.73s
2:	learn: 0.6477791	total: 123ms	remaining: 3.98s
3:	learn: 0.6325852	total: 161ms	remaining: 3.86s
4:	learn: 0.6181110	total: 198ms	remaining: 3.75s
5:	learn: 0.6063451	total: 234ms	remaining: 3.67s
6:	learn: 0.5923132	total: 270ms	remaining: 3.59s
7:	learn: 0.5801042	total: 309ms	remaining: 3.55s
8:	learn: 0.5684541	total: 355ms	remaining: 3.59s
9:	learn: 0.5560049	total: 393ms	remaining: 3.53s
10:	learn: 0.5442222	total: 431ms	remaining: 3.49s
11:	learn: 0.5324515	total: 469ms	remaining: 3.44s
12:	learn: 0.5232732	total: 505ms	remaining: 3.38s
13:	learn: 0.5117062	total: 541ms	remaining: 3.32s
14:	learn: 0.5006558	total: 586ms	remaining: 3.32s
15:	learn: 0.4921673	total: 622ms	remaining: 3.27s
16:	learn: 0.4836199	total: 643ms	remaining: 3.14s
17:	learn: 0.4748627	total: 681ms	remaining: 3.1s
18:	learn: 0.4667168	total: 717ms	remaining: 3.06s
19:	learn: 0.4578206	total: 761ms	remaining: 3.04s
20:	learn: 0.4486854	total: 807ms	remaining: 3.04s
21:	learn: 0.4410347	total: 842ms	remaining: 2.98s
22:	learn: 0.4325364	total: 878ms	remaining: 2.94s
23:	learn: 0.4265464	total: 912ms	remaining: 2.89s
24:	learn: 0.4200699	total: 952ms	remaining: 2.86s
25:	learn: 0.4142384	total: 988ms	remaining: 2.81s
26:	learn: 0.4072413	total: 1.03s	remaining: 2.79s
27:	learn: 0.4009872	total: 1.07s	remaining: 2.75s
28:	learn: 0.3952050	total: 1.1s	remaining: 2.7s
29:	learn: 0.3889355	total: 1.14s	remaining: 2.66s
30:	learn: 0.3837602	total: 1.18s	remaining: 2.62s
31:	learn: 0.3779735	total: 1.21s	remaining: 2.57s
32:	learn: 0.3716509	total: 1.25s	remaining: 2.55s
33:	learn: 0.3658556	total: 1.29s	remaining: 2.51s
34:	learn: 0.3601986	total: 1.33s	remaining: 2.47s
35:	learn: 0.3556856	total: 1.37s	remaining: 2.43s
36:	learn: 0.3506903	total: 1.41s	remaining: 2.39s

37:	learn: 0.3454717	total: 1.44s	remaining: 2.35s
38:	learn: 0.3400025	total: 1.49s	remaining: 2.32s
39:	learn: 0.3359606	total: 1.52s	remaining: 2.29s
40:	learn: 0.3319888	total: 1.56s	remaining: 2.25s
41:	learn: 0.3281915	total: 1.6s	remaining: 2.21s
42:	learn: 0.3234134	total: 1.64s	remaining: 2.17s
43:	learn: 0.3196161	total: 1.67s	remaining: 2.13s
44:	learn: 0.3148530	total: 1.72s	remaining: 2.1s
45:	learn: 0.3105316	total: 1.76s	remaining: 2.07s
46:	learn: 0.3072915	total: 1.8s	remaining: 2.03s
47:	learn: 0.3028888	total: 1.84s	remaining: 1.99s
48:	learn: 0.2997492	total: 1.88s	remaining: 1.95s
49:	learn: 0.2963930	total: 1.92s	remaining: 1.92s
50:	learn: 0.2936002	total: 1.97s	remaining: 1.89s
51:	learn: 0.2905221	total: 2s	remaining: 1.85s
52:	learn: 0.2868780	total: 2.04s	remaining: 1.81s
53:	learn: 0.2836925	total: 2.08s	remaining: 1.77s
54:	learn: 0.2817627	total: 2.08s	remaining: 1.7s
55:	learn: 0.2791311	total: 2.12s	remaining: 1.67s
56:	learn: 0.2758002	total: 2.16s	remaining: 1.63s
57:	learn: 0.2733280	total: 2.2s	remaining: 1.59s
58:	learn: 0.2711165	total: 2.24s	remaining: 1.55s
59:	learn: 0.2685101	total: 2.27s	remaining: 1.52s
60:	learn: 0.2664084	total: 2.31s	remaining: 1.48s
61:	learn: 0.2635878	total: 2.35s	remaining: 1.44s
62:	learn: 0.2611837	total: 2.39s	remaining: 1.4s
63:	learn: 0.2587031	total: 2.43s	remaining: 1.37s
64:	learn: 0.2560294	total: 2.47s	remaining: 1.33s
65:	learn: 0.2534400	total: 2.5s	remaining: 1.29s
66:	learn: 0.2509306	total: 2.54s	remaining: 1.25s
67:	learn: 0.2490825	total: 2.57s	remaining: 1.21s
68:	learn: 0.2474467	total: 2.61s	remaining: 1.17s
69:	learn: 0.2453682	total: 2.65s	remaining: 1.14s
70:	learn: 0.2436531	total: 2.67s	remaining: 1.09s
71:	learn: 0.2412899	total: 2.71s	remaining: 1.05s
72:	learn: 0.2396590	total: 2.74s	remaining: 1.01s
73:	learn: 0.2380467	total: 2.79s	remaining: 980ms
74:	learn: 0.2360038	total: 2.82s	remaining: 942ms
75:	learn: 0.2340706	total: 2.87s	remaining: 906ms
76:	learn: 0.2320108	total: 2.91s	remaining: 869ms
77:	learn: 0.2305639	total: 2.94s	remaining: 830ms
78:	learn: 0.2291253	total: 2.98s	remaining: 792ms
79:	learn: 0.2277258	total: 3.02s	remaining: 755ms
80:	learn: 0.2259080	total: 3.06s	remaining: 717ms
81:	learn: 0.2240390	total: 3.1s	remaining: 681ms
82:	learn: 0.2221661	total: 3.14s	remaining: 643ms
83:	learn: 0.2209117	total: 3.17s	remaining: 604ms
84:	learn: 0.2196449	total: 3.21s	remaining: 566ms
85:	learn: 0.2179881	total: 3.25s	remaining: 528ms
86:	learn: 0.2168366	total: 3.28s	remaining: 491ms
87:	learn: 0.2158442	total: 3.33s	remaining: 454ms
88:	learn: 0.2147457	total: 3.37s	remaining: 417ms
89:	learn: 0.2136268	total: 3.41s	remaining: 379ms
90:	learn: 0.2128197	total: 3.42s	remaining: 338ms
91:	learn: 0.2117932	total: 3.45s	remaining: 300ms
92:	learn: 0.2102867	total: 3.49s	remaining: 263ms
93:	learn: 0.2094466	total: 3.53s	remaining: 225ms
94:	learn: 0.2081157	total: 3.57s	remaining: 188ms
95:	learn: 0.2072368	total: 3.61s	remaining: 150ms
96:	learn: 0.2060695	total: 3.65s	remaining: 113ms
97:	learn: 0.2049636	total: 3.68s	remaining: 75.2ms
98:	learn: 0.2040365	total: 3.72s	remaining: 37.6ms
99:	learn: 0.2029053	total: 3.77s	remaining: 0us
0:	learn: 0.6788236	total: 35ms	remaining: 3.47s
1:	learn: 0.6615390	total: 70ms	remaining: 3.43s
2:	learn: 0.6457778	total: 114ms	remaining: 3.68s
3:	learn: 0.6310168	total: 150ms	remaining: 3.6s
4:	learn: 0.6156249	total: 185ms	remaining: 3.52s
5:	learn: 0.5990069	total: 221ms	remaining: 3.46s
6:	learn: 0.5880764	total: 256ms	remaining: 3.4s
7:	learn: 0.5752112	total: 296ms	remaining: 3.4s
8:	learn: 0.5622940	total: 344ms	remaining: 3.48s
9:	learn: 0.5482712	total: 381ms	remaining: 3.43s
10:	learn: 0.5354771	total: 417ms	remaining: 3.38s
11:	learn: 0.5231399	total: 453ms	remaining: 3.32s
12:	learn: 0.5138478	total: 487ms	remaining: 3.26s
13:	learn: 0.5010520	total: 522ms	remaining: 3.21s
14:	learn: 0.4894648	total: 565ms	remaining: 3.2s
15:	learn: 0.4806031	total: 602ms	remaining: 3.16s
16:	learn: 0.4716255	total: 621ms	remaining: 3.03s
17:	learn: 0.4629426	total: 658ms	remaining: 3s
18:	learn: 0.4543146	total: 695ms	remaining: 2.96s
19:	learn: 0.4450274	total: 733ms	remaining: 2.93s
20:	learn: 0.4360269	total: 776ms	remaining: 2.92s
21:	learn: 0.4288315	total: 816ms	remaining: 2.89s
22:	learn: 0.4198105	total: 854ms	remaining: 2.86s
23:	learn: 0.4137630	total: 898ms	remaining: 2.84s
24:	learn: 0.4069434	total: 935ms	remaining: 2.81s
25:	learn: 0.4010151	total: 972ms	remaining: 2.77s
26:	learn: 0.3921870	total: 1.02s	remaining: 2.75s
27:	learn: 0.3856900	total: 1.05s	remaining: 2.71s
28:	learn: 0.3794459	total: 1.09s	remaining: 2.67s
29:	learn: 0.3734359	total: 1.13s	remaining: 2.64s
30:	learn: 0.3676631	total: 1.17s	remaining: 2.59s
31:	learn: 0.3600506	total: 1.2s	remaining: 2.55s
32:	learn: 0.3547393	total: 1.25s	remaining: 2.53s
33:	learn: 0.3490570	total: 1.28s	remaining: 2.49s
34:	learn: 0.3434171	total: 1.32s	remaining: 2.45s
35:	learn: 0.3388457	total: 1.35s	remaining: 2.41s
36:	learn: 0.3329704	total: 1.39s	remaining: 2.37s
37:	learn: 0.3275250	total: 1.43s	remaining: 2.33s
38:	learn: 0.3233160	total: 1.47s	remaining: 2.3s

39:	learn: 0.3194589	total: 1.51s	remaining: 2.26s
40:	learn: 0.3153729	total: 1.54s	remaining: 2.22s
41:	learn: 0.3118610	total: 1.58s	remaining: 2.19s
42:	learn: 0.3068602	total: 1.62s	remaining: 2.15s
43:	learn: 0.3034702	total: 1.66s	remaining: 2.11s
44:	learn: 0.3001024	total: 1.7s	remaining: 2.08s
45:	learn: 0.2954749	total: 1.74s	remaining: 2.05s
46:	learn: 0.2923391	total: 1.78s	remaining: 2.01s
47:	learn: 0.2874109	total: 1.82s	remaining: 1.97s
48:	learn: 0.2848988	total: 1.85s	remaining: 1.93s
49:	learn: 0.2811443	total: 1.89s	remaining: 1.89s
50:	learn: 0.2782434	total: 1.94s	remaining: 1.87s
51:	learn: 0.2747128	total: 1.98s	remaining: 1.83s
52:	learn: 0.27111399	total: 2.01s	remaining: 1.79s
53:	learn: 0.2677238	total: 2.05s	remaining: 1.75s
54:	learn: 0.2643356	total: 2.09s	remaining: 1.71s
55:	learn: 0.2611250	total: 2.12s	remaining: 1.67s
56:	learn: 0.2582440	total: 2.17s	remaining: 1.64s
57:	learn: 0.2552127	total: 2.2s	remaining: 1.59s
58:	learn: 0.2523571	total: 2.24s	remaining: 1.55s
59:	learn: 0.2500531	total: 2.27s	remaining: 1.52s
60:	learn: 0.2475371	total: 2.33s	remaining: 1.49s
61:	learn: 0.2444658	total: 2.38s	remaining: 1.46s
62:	learn: 0.2417350	total: 2.41s	remaining: 1.42s
63:	learn: 0.2396821	total: 2.45s	remaining: 1.38s
64:	learn: 0.2369638	total: 2.49s	remaining: 1.34s
65:	learn: 0.2353972	total: 2.52s	remaining: 1.3s
66:	learn: 0.2334873	total: 2.56s	remaining: 1.26s
67:	learn: 0.2310926	total: 2.61s	remaining: 1.23s
68:	learn: 0.2285355	total: 2.65s	remaining: 1.19s
69:	learn: 0.2263587	total: 2.69s	remaining: 1.15s
70:	learn: 0.2241709	total: 2.72s	remaining: 1.11s
71:	learn: 0.2224292	total: 2.76s	remaining: 1.07s
72:	learn: 0.2207751	total: 2.79s	remaining: 1.03s
73:	learn: 0.2185800	total: 2.84s	remaining: 998ms
74:	learn: 0.2167469	total: 2.88s	remaining: 959ms
75:	learn: 0.2154204	total: 2.92s	remaining: 923ms
76:	learn: 0.2139871	total: 2.96s	remaining: 883ms
77:	learn: 0.2129553	total: 2.99s	remaining: 844ms
78:	learn: 0.2111018	total: 3.03s	remaining: 805ms
79:	learn: 0.2092030	total: 3.07s	remaining: 769ms
80:	learn: 0.2077553	total: 3.11s	remaining: 730ms
81:	learn: 0.2062554	total: 3.15s	remaining: 691ms
82:	learn: 0.2051193	total: 3.19s	remaining: 653ms
83:	learn: 0.2041077	total: 3.22s	remaining: 614ms
84:	learn: 0.2027561	total: 3.26s	remaining: 575ms
85:	learn: 0.2010678	total: 3.31s	remaining: 539ms
86:	learn: 0.2001535	total: 3.35s	remaining: 500ms
87:	learn: 0.1988862	total: 3.38s	remaining: 462ms
88:	learn: 0.1973815	total: 3.42s	remaining: 423ms
89:	learn: 0.1962625	total: 3.46s	remaining: 384ms
90:	learn: 0.1953243	total: 3.5s	remaining: 346ms
91:	learn: 0.1941103	total: 3.54s	remaining: 308ms
92:	learn: 0.1928001	total: 3.58s	remaining: 270ms
93:	learn: 0.1915390	total: 3.62s	remaining: 231ms
94:	learn: 0.1901219	total: 3.66s	remaining: 192ms
95:	learn: 0.1891903	total: 3.69s	remaining: 154ms
96:	learn: 0.1880606	total: 3.74s	remaining: 116ms
97:	learn: 0.1873631	total: 3.78s	remaining: 77.2ms
98:	learn: 0.1860125	total: 3.82s	remaining: 38.6ms
99:	learn: 0.1852831	total: 3.85s	remaining: 0us
0:	learn: 0.6787769	total: 40.1ms	remaining: 3.97s
1:	learn: 0.6633095	total: 76.1ms	remaining: 3.73s
2:	learn: 0.6476976	total: 114ms	remaining: 3.68s
3:	learn: 0.6318681	total: 150ms	remaining: 3.59s
4:	learn: 0.6169129	total: 185ms	remaining: 3.52s
5:	learn: 0.6050231	total: 222ms	remaining: 3.47s
6:	learn: 0.5904710	total: 268ms	remaining: 3.56s
7:	learn: 0.5792131	total: 305ms	remaining: 3.5s
8:	learn: 0.5656212	total: 341ms	remaining: 3.45s
9:	learn: 0.5528361	total: 377ms	remaining: 3.39s
10:	learn: 0.5406429	total: 413ms	remaining: 3.34s
11:	learn: 0.5279326	total: 449ms	remaining: 3.29s
12:	learn: 0.5187412	total: 496ms	remaining: 3.32s
13:	learn: 0.5070674	total: 533ms	remaining: 3.27s
14:	learn: 0.4958112	total: 570ms	remaining: 3.23s
15:	learn: 0.4861740	total: 607ms	remaining: 3.18s
16:	learn: 0.4771374	total: 645ms	remaining: 3.15s
17:	learn: 0.4669238	total: 682ms	remaining: 3.11s
18:	learn: 0.4587888	total: 726ms	remaining: 3.1s
19:	learn: 0.4508015	total: 763ms	remaining: 3.05s
20:	learn: 0.4409232	total: 818ms	remaining: 3.08s
21:	learn: 0.4332028	total: 865ms	remaining: 3.07s
22:	learn: 0.4241961	total: 903ms	remaining: 3.02s
23:	learn: 0.4178312	total: 930ms	remaining: 2.94s
24:	learn: 0.4108071	total: 975ms	remaining: 2.92s
25:	learn: 0.4049407	total: 1.02s	remaining: 2.9s
26:	learn: 0.3981404	total: 1.05s	remaining: 2.85s
27:	learn: 0.3910480	total: 1.09s	remaining: 2.81s
28:	learn: 0.3848455	total: 1.13s	remaining: 2.77s
29:	learn: 0.3784674	total: 1.18s	remaining: 2.75s
30:	learn: 0.3722911	total: 1.22s	remaining: 2.71s
31:	learn: 0.3650416	total: 1.25s	remaining: 2.66s
32:	learn: 0.3596298	total: 1.3s	remaining: 2.64s
33:	learn: 0.3535587	total: 1.34s	remaining: 2.59s
34:	learn: 0.3479559	total: 1.37s	remaining: 2.55s
35:	learn: 0.3436314	total: 1.42s	remaining: 2.52s
36:	learn: 0.3386817	total: 1.46s	remaining: 2.48s
37:	learn: 0.3332009	total: 1.5s	remaining: 2.44s
38:	learn: 0.3284626	total: 1.53s	remaining: 2.4s
39:	learn: 0.3243020	total: 1.57s	remaining: 2.36s
40:	learn: 0.3203881	total: 1.61s	remaining: 2.32s

41:	learn: 0.3164657	total: 1.66s	remaining: 2.29s
42:	learn: 0.3115393	total: 1.7s	remaining: 2.25s
43:	learn: 0.3078476	total: 1.74s	remaining: 2.21s
44:	learn: 0.3029053	total: 1.77s	remaining: 2.17s
45:	learn: 0.2979739	total: 1.81s	remaining: 2.13s
46:	learn: 0.2945617	total: 1.85s	remaining: 2.08s
47:	learn: 0.2903203	total: 1.89s	remaining: 2.05s
48:	learn: 0.2874027	total: 1.93s	remaining: 2.01s
49:	learn: 0.2837694	total: 1.98s	remaining: 1.98s
50:	learn: 0.2806973	total: 2.01s	remaining: 1.94s
51:	learn: 0.2774930	total: 2.05s	remaining: 1.89s
52:	learn: 0.2738758	total: 2.09s	remaining: 1.85s
53:	learn: 0.2708897	total: 2.14s	remaining: 1.82s
54:	learn: 0.2688938	total: 2.14s	remaining: 1.75s
55:	learn: 0.2653052	total: 2.18s	remaining: 1.71s
56:	learn: 0.2627639	total: 2.22s	remaining: 1.67s
57:	learn: 0.2598077	total: 2.25s	remaining: 1.63s
58:	learn: 0.2571972	total: 2.29s	remaining: 1.59s
59:	learn: 0.2549447	total: 2.33s	remaining: 1.55s
60:	learn: 0.2523222	total: 2.38s	remaining: 1.52s
61:	learn: 0.2493011	total: 2.42s	remaining: 1.48s
62:	learn: 0.2475206	total: 2.45s	remaining: 1.44s
63:	learn: 0.2451392	total: 2.49s	remaining: 1.4s
64:	learn: 0.2425483	total: 2.53s	remaining: 1.36s
65:	learn: 0.2403360	total: 2.56s	remaining: 1.32s
66:	learn: 0.2378210	total: 2.61s	remaining: 1.29s
67:	learn: 0.2363876	total: 2.65s	remaining: 1.25s
68:	learn: 0.2347327	total: 2.69s	remaining: 1.21s
69:	learn: 0.2325688	total: 2.72s	remaining: 1.17s
70:	learn: 0.2302148	total: 2.76s	remaining: 1.13s
71:	learn: 0.2283729	total: 2.8s	remaining: 1.09s
72:	learn: 0.2268576	total: 2.84s	remaining: 1.05s
73:	learn: 0.2253032	total: 2.88s	remaining: 1.01s
74:	learn: 0.2232964	total: 2.92s	remaining: 973ms
75:	learn: 0.2211278	total: 2.96s	remaining: 936ms
76:	learn: 0.2193355	total: 3s	remaining: 897ms
77:	learn: 0.2176989	total: 3.04s	remaining: 857ms
78:	learn: 0.2164480	total: 3.08s	remaining: 820ms
79:	learn: 0.2152935	total: 3.13s	remaining: 782ms
80:	learn: 0.2134091	total: 3.17s	remaining: 743ms
81:	learn: 0.2116906	total: 3.21s	remaining: 704ms
82:	learn: 0.2104458	total: 3.25s	remaining: 665ms
83:	learn: 0.2090792	total: 3.29s	remaining: 627ms
84:	learn: 0.2076769	total: 3.33s	remaining: 588ms
85:	learn: 0.2065732	total: 3.37s	remaining: 548ms
86:	learn: 0.2051488	total: 3.41s	remaining: 509ms
87:	learn: 0.2039011	total: 3.44s	remaining: 470ms
88:	learn: 0.2027698	total: 3.49s	remaining: 431ms
89:	learn: 0.2016888	total: 3.52s	remaining: 392ms
90:	learn: 0.2005353	total: 3.56s	remaining: 352ms
91:	learn: 0.1992562	total: 3.6s	remaining: 313ms
92:	learn: 0.1977151	total: 3.63s	remaining: 274ms
93:	learn: 0.1963028	total: 3.67s	remaining: 234ms
94:	learn: 0.1954027	total: 3.72s	remaining: 196ms
95:	learn: 0.1943868	total: 3.75s	remaining: 156ms
96:	learn: 0.1932549	total: 3.8s	remaining: 117ms
97:	learn: 0.1920226	total: 3.83s	remaining: 78.2ms
98:	learn: 0.1911473	total: 3.87s	remaining: 39.1ms
99:	learn: 0.1898754	total: 3.91s	remaining: 0us
0:	learn: 0.6653901	total: 35.8ms	remaining: 3.54s
1:	learn: 0.6337522	total: 71.2ms	remaining: 3.49s
2:	learn: 0.6059190	total: 106ms	remaining: 3.43s
3:	learn: 0.5785004	total: 142ms	remaining: 3.4s
4:	learn: 0.5523715	total: 179ms	remaining: 3.39s
5:	learn: 0.5326429	total: 216ms	remaining: 3.38s
6:	learn: 0.5151196	total: 262ms	remaining: 3.48s
7:	learn: 0.4976233	total: 301ms	remaining: 3.46s
8:	learn: 0.4794307	total: 338ms	remaining: 3.42s
9:	learn: 0.4605170	total: 376ms	remaining: 3.38s
10:	learn: 0.4439954	total: 419ms	remaining: 3.39s
11:	learn: 0.4271142	total: 458ms	remaining: 3.36s
12:	learn: 0.4146596	total: 505ms	remaining: 3.38s
13:	learn: 0.3991062	total: 541ms	remaining: 3.32s
14:	learn: 0.3847093	total: 577ms	remaining: 3.27s
15:	learn: 0.3733216	total: 614ms	remaining: 3.22s
16:	learn: 0.3624527	total: 634ms	remaining: 3.09s
17:	learn: 0.3520358	total: 669ms	remaining: 3.05s
18:	learn: 0.3420739	total: 709ms	remaining: 3.02s
19:	learn: 0.3324052	total: 750ms	remaining: 3s
20:	learn: 0.3215518	total: 786ms	remaining: 2.96s
21:	learn: 0.3134324	total: 822ms	remaining: 2.91s
22:	learn: 0.3048180	total: 857ms	remaining: 2.87s
23:	learn: 0.2991114	total: 892ms	remaining: 2.82s
24:	learn: 0.2939805	total: 951ms	remaining: 2.85s
25:	learn: 0.2887437	total: 992ms	remaining: 2.82s
26:	learn: 0.2827361	total: 1.03s	remaining: 2.78s
27:	learn: 0.2770809	total: 1.06s	remaining: 2.74s
28:	learn: 0.2719442	total: 1.1s	remaining: 2.7s
29:	learn: 0.2663294	total: 1.14s	remaining: 2.66s
30:	learn: 0.2614419	total: 1.19s	remaining: 2.64s
31:	learn: 0.2555074	total: 1.22s	remaining: 2.6s
32:	learn: 0.2505669	total: 1.26s	remaining: 2.56s
33:	learn: 0.2465351	total: 1.3s	remaining: 2.52s
34:	learn: 0.2421552	total: 1.33s	remaining: 2.48s
35:	learn: 0.2390454	total: 1.37s	remaining: 2.44s
36:	learn: 0.2353690	total: 1.42s	remaining: 2.41s
37:	learn: 0.2319378	total: 1.45s	remaining: 2.37s
38:	learn: 0.2293074	total: 1.49s	remaining: 2.33s
39:	learn: 0.2265773	total: 1.53s	remaining: 2.29s
40:	learn: 0.2239044	total: 1.56s	remaining: 2.25s
41:	learn: 0.2214810	total: 1.6s	remaining: 2.21s
42:	learn: 0.2180881	total: 1.65s	remaining: 2.19s

43:	learn: 0.2154749	total: 1.68s	remaining: 2.14s
44:	learn: 0.2122523	total: 1.72s	remaining: 2.1s
45:	learn: 0.2091643	total: 1.75s	remaining: 2.06s
46:	learn: 0.2073426	total: 1.79s	remaining: 2.02s
47:	learn: 0.2043621	total: 1.83s	remaining: 1.98s
48:	learn: 0.2018468	total: 1.88s	remaining: 1.95s
49:	learn: 0.1990600	total: 1.91s	remaining: 1.91s
50:	learn: 0.1975180	total: 1.96s	remaining: 1.88s
51:	learn: 0.1953713	total: 1.99s	remaining: 1.84s
52:	learn: 0.1931717	total: 2.03s	remaining: 1.8s
53:	learn: 0.1910559	total: 2.07s	remaining: 1.76s
54:	learn: 0.1893376	total: 2.11s	remaining: 1.73s
55:	learn: 0.1875357	total: 2.15s	remaining: 1.69s
56:	learn: 0.1856776	total: 2.19s	remaining: 1.65s
57:	learn: 0.1841191	total: 2.22s	remaining: 1.61s
58:	learn: 0.1830692	total: 2.26s	remaining: 1.57s
59:	learn: 0.1820441	total: 2.3s	remaining: 1.53s
60:	learn: 0.1809230	total: 2.35s	remaining: 1.5s
61:	learn: 0.1797689	total: 2.39s	remaining: 1.47s
62:	learn: 0.1785858	total: 2.43s	remaining: 1.43s
63:	learn: 0.1777054	total: 2.47s	remaining: 1.39s
64:	learn: 0.1762272	total: 2.5s	remaining: 1.35s
65:	learn: 0.1751500	total: 2.54s	remaining: 1.31s
66:	learn: 0.1736805	total: 2.58s	remaining: 1.27s
67:	learn: 0.1725445	total: 2.62s	remaining: 1.23s
68:	learn: 0.1710556	total: 2.66s	remaining: 1.19s
69:	learn: 0.1699374	total: 2.69s	remaining: 1.15s
70:	learn: 0.1686846	total: 2.73s	remaining: 1.11s
71:	learn: 0.1674237	total: 2.76s	remaining: 1.07s
72:	learn: 0.1661013	total: 2.81s	remaining: 1.04s
73:	learn: 0.1651333	total: 2.85s	remaining: 1000ms
74:	learn: 0.1641162	total: 2.88s	remaining: 961ms
75:	learn: 0.1634472	total: 2.92s	remaining: 922ms
76:	learn: 0.1627456	total: 2.96s	remaining: 886ms
77:	learn: 0.1617878	total: 3s	remaining: 847ms
78:	learn: 0.1611872	total: 3.05s	remaining: 811ms
79:	learn: 0.1603547	total: 3.09s	remaining: 772ms
80:	learn: 0.1594352	total: 3.12s	remaining: 733ms
81:	learn: 0.1584690	total: 3.16s	remaining: 695ms
82:	learn: 0.1579520	total: 3.2s	remaining: 655ms
83:	learn: 0.1573963	total: 3.24s	remaining: 616ms
84:	learn: 0.1563660	total: 3.28s	remaining: 579ms
85:	learn: 0.1555500	total: 3.32s	remaining: 540ms
86:	learn: 0.1550463	total: 3.35s	remaining: 501ms
87:	learn: 0.1544239	total: 3.39s	remaining: 462ms
88:	learn: 0.1535795	total: 3.43s	remaining: 424ms
89:	learn: 0.1529853	total: 3.46s	remaining: 385ms
90:	learn: 0.1524648	total: 3.51s	remaining: 347ms
91:	learn: 0.1518542	total: 3.54s	remaining: 308ms
92:	learn: 0.1510326	total: 3.58s	remaining: 269ms
93:	learn: 0.1503713	total: 3.62s	remaining: 231ms
94:	learn: 0.1492554	total: 3.65s	remaining: 192ms
95:	learn: 0.1484949	total: 3.69s	remaining: 154ms
96:	learn: 0.1474851	total: 3.73s	remaining: 115ms
97:	learn: 0.1473701	total: 3.73s	remaining: 76.2ms
98:	learn: 0.1465402	total: 3.77s	remaining: 38.1ms
99:	learn: 0.1462474	total: 3.81s	remaining: 0us
0:	learn: 0.6647653	total: 48.3ms	remaining: 4.78s
1:	learn: 0.6308751	total: 83.9ms	remaining: 4.11s
2:	learn: 0.6045444	total: 123ms	remaining: 3.99s
3:	learn: 0.5778500	total: 159ms	remaining: 3.82s
4:	learn: 0.5508174	total: 197ms	remaining: 3.73s
5:	learn: 0.5277074	total: 236ms	remaining: 3.69s
6:	learn: 0.5098412	total: 281ms	remaining: 3.74s
7:	learn: 0.4901300	total: 319ms	remaining: 3.67s
8:	learn: 0.4681178	total: 356ms	remaining: 3.6s
9:	learn: 0.4470315	total: 393ms	remaining: 3.53s
10:	learn: 0.4286698	total: 429ms	remaining: 3.47s
11:	learn: 0.4115424	total: 465ms	remaining: 3.41s
12:	learn: 0.3992533	total: 512ms	remaining: 3.42s
13:	learn: 0.3823769	total: 548ms	remaining: 3.37s
14:	learn: 0.3677396	total: 584ms	remaining: 3.31s
15:	learn: 0.3571496	total: 621ms	remaining: 3.26s
16:	learn: 0.3461820	total: 640ms	remaining: 3.13s
17:	learn: 0.3360846	total: 682ms	remaining: 3.1s
18:	learn: 0.3265848	total: 725ms	remaining: 3.09s
19:	learn: 0.3167481	total: 763ms	remaining: 3.05s
20:	learn: 0.3058838	total: 799ms	remaining: 3.01s
21:	learn: 0.2992202	total: 836ms	remaining: 2.96s
22:	learn: 0.2896502	total: 874ms	remaining: 2.92s
23:	learn: 0.2836389	total: 912ms	remaining: 2.89s
24:	learn: 0.2773137	total: 956ms	remaining: 2.87s
25:	learn: 0.2722424	total: 994ms	remaining: 2.83s
26:	learn: 0.2664217	total: 1.04s	remaining: 2.81s
27:	learn: 0.2609737	total: 1.07s	remaining: 2.76s
28:	learn: 0.2558042	total: 1.11s	remaining: 2.72s
29:	learn: 0.2502955	total: 1.15s	remaining: 2.68s
30:	learn: 0.2461421	total: 1.19s	remaining: 2.66s
31:	learn: 0.2397970	total: 1.23s	remaining: 2.62s
32:	learn: 0.2357047	total: 1.27s	remaining: 2.58s
33:	learn: 0.2310688	total: 1.31s	remaining: 2.54s
34:	learn: 0.2261689	total: 1.35s	remaining: 2.5s
35:	learn: 0.2231634	total: 1.38s	remaining: 2.46s
36:	learn: 0.2190171	total: 1.43s	remaining: 2.44s
37:	learn: 0.2156113	total: 1.47s	remaining: 2.39s
38:	learn: 0.2115855	total: 1.5s	remaining: 2.35s
39:	learn: 0.2083588	total: 1.53s	remaining: 2.3s
40:	learn: 0.2059316	total: 1.57s	remaining: 2.26s
41:	learn: 0.2029611	total: 1.6s	remaining: 2.22s
42:	learn: 0.1996227	total: 1.65s	remaining: 2.19s
43:	learn: 0.1978244	total: 1.69s	remaining: 2.15s
44:	learn: 0.1944806	total: 1.73s	remaining: 2.11s

45:	learn: 0.1913383	total: 1.76s	remaining: 2.07s
46:	learn: 0.1899906	total: 1.8s	remaining: 2.03s
47:	learn: 0.1875529	total: 1.83s	remaining: 1.99s
48:	learn: 0.1862593	total: 1.88s	remaining: 1.96s
49:	learn: 0.1836222	total: 1.92s	remaining: 1.92s
50:	learn: 0.1813009	total: 1.95s	remaining: 1.88s
51:	learn: 0.1786384	total: 1.99s	remaining: 1.84s
52:	learn: 0.1772126	total: 2.04s	remaining: 1.8s
53:	learn: 0.1752958	total: 2.07s	remaining: 1.77s
54:	learn: 0.1732996	total: 2.12s	remaining: 1.73s
55:	learn: 0.1719410	total: 2.16s	remaining: 1.69s
56:	learn: 0.1702443	total: 2.19s	remaining: 1.65s
57:	learn: 0.1684799	total: 2.23s	remaining: 1.62s
58:	learn: 0.1668544	total: 2.27s	remaining: 1.58s
59:	learn: 0.1656654	total: 2.31s	remaining: 1.54s
60:	learn: 0.1644565	total: 2.35s	remaining: 1.5s
61:	learn: 0.1627890	total: 2.39s	remaining: 1.46s
62:	learn: 0.1616570	total: 2.43s	remaining: 1.43s
63:	learn: 0.1606570	total: 2.46s	remaining: 1.39s
64:	learn: 0.1592993	total: 2.5s	remaining: 1.35s
65:	learn: 0.1586117	total: 2.54s	remaining: 1.31s
66:	learn: 0.1570677	total: 2.58s	remaining: 1.27s
67:	learn: 0.1560957	total: 2.62s	remaining: 1.23s
68:	learn: 0.1547233	total: 2.66s	remaining: 1.19s
69:	learn: 0.1534773	total: 2.69s	remaining: 1.15s
70:	learn: 0.1529685	total: 2.73s	remaining: 1.11s
71:	learn: 0.1517012	total: 2.77s	remaining: 1.08s
72:	learn: 0.1509364	total: 2.81s	remaining: 1.04s
73:	learn: 0.1500064	total: 2.85s	remaining: 1s
74:	learn: 0.1491997	total: 2.88s	remaining: 961ms
75:	learn: 0.1483295	total: 2.92s	remaining: 922ms
76:	learn: 0.1477017	total: 2.95s	remaining: 883ms
77:	learn: 0.1472446	total: 2.99s	remaining: 844ms
78:	learn: 0.1465247	total: 3.04s	remaining: 809ms
79:	learn: 0.1455177	total: 3.08s	remaining: 770ms
80:	learn: 0.1444904	total: 3.12s	remaining: 731ms
81:	learn: 0.1435027	total: 3.15s	remaining: 692ms
82:	learn: 0.1430147	total: 3.19s	remaining: 653ms
83:	learn: 0.1421743	total: 3.23s	remaining: 615ms
84:	learn: 0.1412200	total: 3.27s	remaining: 578ms
85:	learn: 0.1404192	total: 3.33s	remaining: 542ms
86:	learn: 0.1396899	total: 3.37s	remaining: 503ms
87:	learn: 0.1389608	total: 3.4s	remaining: 464ms
88:	learn: 0.1380745	total: 3.44s	remaining: 425ms
89:	learn: 0.1375400	total: 3.48s	remaining: 386ms
90:	learn: 0.1372882	total: 3.52s	remaining: 348ms
91:	learn: 0.1363982	total: 3.55s	remaining: 309ms
92:	learn: 0.1358538	total: 3.59s	remaining: 270ms
93:	learn: 0.1348797	total: 3.62s	remaining: 231ms
94:	learn: 0.1340445	total: 3.66s	remaining: 193ms
95:	learn: 0.1330080	total: 3.71s	remaining: 154ms
96:	learn: 0.1321178	total: 3.74s	remaining: 116ms
97:	learn: 0.1313717	total: 3.78s	remaining: 77.1ms
98:	learn: 0.1303235	total: 3.81s	remaining: 38.5ms
99:	learn: 0.1297291	total: 3.85s	remaining: 0us
0:	learn: 0.6646729	total: 37.4ms	remaining: 3.7s
1:	learn: 0.6348887	total: 82.2ms	remaining: 4.03s
2:	learn: 0.6057415	total: 125ms	remaining: 4.04s
3:	learn: 0.5771231	total: 161ms	remaining: 3.87s
4:	learn: 0.5491032	total: 197ms	remaining: 3.75s
5:	learn: 0.5295906	total: 232ms	remaining: 3.64s
6:	learn: 0.5117232	total: 277ms	remaining: 3.68s
7:	learn: 0.4915744	total: 315ms	remaining: 3.63s
8:	learn: 0.4701710	total: 353ms	remaining: 3.56s
9:	learn: 0.4510586	total: 389ms	remaining: 3.5s
10:	learn: 0.4342654	total: 426ms	remaining: 3.45s
11:	learn: 0.4169922	total: 464ms	remaining: 3.4s
12:	learn: 0.4047689	total: 510ms	remaining: 3.41s
13:	learn: 0.3892958	total: 546ms	remaining: 3.35s
14:	learn: 0.3751923	total: 582ms	remaining: 3.3s
15:	learn: 0.3634858	total: 618ms	remaining: 3.24s
16:	learn: 0.3529017	total: 660ms	remaining: 3.22s
17:	learn: 0.3410812	total: 697ms	remaining: 3.17s
18:	learn: 0.3320536	total: 743ms	remaining: 3.17s
19:	learn: 0.3239706	total: 780ms	remaining: 3.12s
20:	learn: 0.3134735	total: 816ms	remaining: 3.07s
21:	learn: 0.3061444	total: 852ms	remaining: 3.02s
22:	learn: 0.2969195	total: 889ms	remaining: 2.98s
23:	learn: 0.2910119	total: 909ms	remaining: 2.88s
24:	learn: 0.2839389	total: 952ms	remaining: 2.86s
25:	learn: 0.2786662	total: 998ms	remaining: 2.84s
26:	learn: 0.2728345	total: 1.03s	remaining: 2.8s
27:	learn: 0.2672551	total: 1.08s	remaining: 2.78s
28:	learn: 0.2624970	total: 1.12s	remaining: 2.74s
29:	learn: 0.2553838	total: 1.16s	remaining: 2.7s
30:	learn: 0.2512006	total: 1.21s	remaining: 2.69s
31:	learn: 0.2451399	total: 1.25s	remaining: 2.65s
32:	learn: 0.2404142	total: 1.28s	remaining: 2.61s
33:	learn: 0.2357983	total: 1.32s	remaining: 2.56s
34:	learn: 0.2319253	total: 1.36s	remaining: 2.52s
35:	learn: 0.2290277	total: 1.4s	remaining: 2.49s
36:	learn: 0.2249938	total: 1.44s	remaining: 2.45s
37:	learn: 0.2209740	total: 1.48s	remaining: 2.41s
38:	learn: 0.2179076	total: 1.51s	remaining: 2.36s
39:	learn: 0.2145454	total: 1.55s	remaining: 2.33s
40:	learn: 0.2121858	total: 1.59s	remaining: 2.29s
41:	learn: 0.2082461	total: 1.64s	remaining: 2.26s
42:	learn: 0.2048335	total: 1.67s	remaining: 2.22s
43:	learn: 0.2027585	total: 1.71s	remaining: 2.18s
44:	learn: 0.1992589	total: 1.75s	remaining: 2.14s
45:	learn: 0.1964910	total: 1.78s	remaining: 2.1s
46:	learn: 0.1951188	total: 1.82s	remaining: 2.06s

47:	learn: 0.1919594	total: 1.87s	remaining: 2.03s
48:	learn: 0.1894465	total: 1.91s	remaining: 1.99s
49:	learn: 0.1869043	total: 1.95s	remaining: 1.95s
50:	learn: 0.1851982	total: 1.98s	remaining: 1.91s
51:	learn: 0.1830122	total: 2.02s	remaining: 1.87s
52:	learn: 0.1809379	total: 2.06s	remaining: 1.83s
53:	learn: 0.1788723	total: 2.12s	remaining: 1.81s
54:	learn: 0.1773426	total: 2.16s	remaining: 1.76s
55:	learn: 0.1752839	total: 2.19s	remaining: 1.72s
56:	learn: 0.1737877	total: 2.23s	remaining: 1.68s
57:	learn: 0.1726799	total: 2.27s	remaining: 1.64s
58:	learn: 0.1714130	total: 2.31s	remaining: 1.6s
59:	learn: 0.1699208	total: 2.35s	remaining: 1.57s
60:	learn: 0.1686267	total: 2.39s	remaining: 1.52s
61:	learn: 0.1671627	total: 2.42s	remaining: 1.48s
62:	learn: 0.1658349	total: 2.46s	remaining: 1.44s
63:	learn: 0.1648268	total: 2.49s	remaining: 1.4s
64:	learn: 0.1639074	total: 2.53s	remaining: 1.36s
65:	learn: 0.1622544	total: 2.58s	remaining: 1.33s
66:	learn: 0.1610816	total: 2.61s	remaining: 1.29s
67:	learn: 0.1601877	total: 2.65s	remaining: 1.25s
68:	learn: 0.1587445	total: 2.69s	remaining: 1.21s
69:	learn: 0.1574988	total: 2.72s	remaining: 1.17s
70:	learn: 0.1567376	total: 2.76s	remaining: 1.13s
71:	learn: 0.1553454	total: 2.8s	remaining: 1.09s
72:	learn: 0.1547836	total: 2.84s	remaining: 1.05s
73:	learn: 0.1535685	total: 2.88s	remaining: 1.01s
74:	learn: 0.1527625	total: 2.92s	remaining: 972ms
75:	learn: 0.1515653	total: 2.95s	remaining: 932ms
76:	learn: 0.1507346	total: 2.99s	remaining: 893ms
77:	learn: 0.1497179	total: 3.03s	remaining: 856ms
78:	learn: 0.1485490	total: 3.07s	remaining: 817ms
79:	learn: 0.1477469	total: 3.12s	remaining: 779ms
80:	learn: 0.1469619	total: 3.15s	remaining: 740ms
81:	learn: 0.1458141	total: 3.19s	remaining: 701ms
82:	learn: 0.1448456	total: 3.23s	remaining: 662ms
83:	learn: 0.1441071	total: 3.28s	remaining: 624ms
84:	learn: 0.1431180	total: 3.31s	remaining: 585ms
85:	learn: 0.1423806	total: 3.35s	remaining: 545ms
86:	learn: 0.1413884	total: 3.39s	remaining: 506ms
87:	learn: 0.1409044	total: 3.42s	remaining: 467ms
88:	learn: 0.1399184	total: 3.46s	remaining: 428ms
89:	learn: 0.1392245	total: 3.5s	remaining: 389ms
90:	learn: 0.1387921	total: 3.54s	remaining: 350ms
91:	learn: 0.1381773	total: 3.58s	remaining: 311ms
92:	learn: 0.1377257	total: 3.62s	remaining: 272ms
93:	learn: 0.1367289	total: 3.65s	remaining: 233ms
94:	learn: 0.1357845	total: 3.69s	remaining: 194ms
95:	learn: 0.1350509	total: 3.73s	remaining: 156ms
96:	learn: 0.1340998	total: 3.77s	remaining: 117ms
97:	learn: 0.1335925	total: 3.81s	remaining: 77.7ms
98:	learn: 0.1327627	total: 3.84s	remaining: 38.8ms
99:	learn: 0.1319269	total: 3.88s	remaining: 0us
0:	learn: 0.6518949	total: 35.9ms	remaining: 3.56s
1:	learn: 0.6062164	total: 74.9ms	remaining: 3.67s
2:	learn: 0.5673831	total: 116ms	remaining: 3.73s
3:	learn: 0.5303763	total: 151ms	remaining: 3.62s
4:	learn: 0.4994415	total: 189ms	remaining: 3.58s
5:	learn: 0.4757570	total: 230ms	remaining: 3.6s
6:	learn: 0.4541921	total: 275ms	remaining: 3.65s
7:	learn: 0.4331930	total: 311ms	remaining: 3.58s
8:	learn: 0.4115985	total: 346ms	remaining: 3.5s
9:	learn: 0.3898494	total: 383ms	remaining: 3.45s
10:	learn: 0.3717176	total: 420ms	remaining: 3.4s
11:	learn: 0.3536362	total: 456ms	remaining: 3.34s
12:	learn: 0.3414317	total: 502ms	remaining: 3.36s
13:	learn: 0.3300010	total: 539ms	remaining: 3.31s
14:	learn: 0.3153863	total: 576ms	remaining: 3.27s
15:	learn: 0.3044169	total: 615ms	remaining: 3.23s
16:	learn: 0.2942610	total: 634ms	remaining: 3.1s
17:	learn: 0.2828634	total: 669ms	remaining: 3.05s
18:	learn: 0.2752138	total: 716ms	remaining: 3.05s
19:	learn: 0.2665403	total: 755ms	remaining: 3.02s
20:	learn: 0.2569809	total: 795ms	remaining: 2.99s
21:	learn: 0.2512699	total: 830ms	remaining: 2.94s
22:	learn: 0.2441609	total: 865ms	remaining: 2.9s
23:	learn: 0.2398388	total: 901ms	remaining: 2.85s
24:	learn: 0.2354055	total: 905ms	remaining: 2.71s
25:	learn: 0.2311587	total: 951ms	remaining: 2.71s
26:	learn: 0.2256353	total: 988ms	remaining: 2.67s
27:	learn: 0.2205951	total: 1.02s	remaining: 2.63s
28:	learn: 0.2167488	total: 1.06s	remaining: 2.6s
29:	learn: 0.2133685	total: 1.11s	remaining: 2.59s
30:	learn: 0.2093162	total: 1.15s	remaining: 2.55s
31:	learn: 0.2072354	total: 1.19s	remaining: 2.54s
32:	learn: 0.2032979	total: 1.23s	remaining: 2.5s
33:	learn: 0.1995165	total: 1.26s	remaining: 2.46s
34:	learn: 0.1960965	total: 1.3s	remaining: 2.42s
35:	learn: 0.1942163	total: 1.31s	remaining: 2.33s
36:	learn: 0.1913105	total: 1.35s	remaining: 2.29s
37:	learn: 0.1894032	total: 1.38s	remaining: 2.25s
38:	learn: 0.1868027	total: 1.42s	remaining: 2.23s
39:	learn: 0.1835597	total: 1.46s	remaining: 2.19s
40:	learn: 0.1804997	total: 1.5s	remaining: 2.15s
41:	learn: 0.1784591	total: 1.53s	remaining: 2.12s
42:	learn: 0.1764678	total: 1.57s	remaining: 2.08s
43:	learn: 0.1747860	total: 1.6s	remaining: 2.04s
44:	learn: 0.1739712	total: 1.65s	remaining: 2.02s
45:	learn: 0.1716544	total: 1.69s	remaining: 1.98s
46:	learn: 0.1698876	total: 1.72s	remaining: 1.94s
47:	learn: 0.1686328	total: 1.76s	remaining: 1.9s
48:	learn: 0.1671131	total: 1.79s	remaining: 1.86s



49:	learn: 0.1658188	total: 1.83s	remaining: 1.83s
50:	learn: 0.1642036	total: 1.87s	remaining: 1.8s
51:	learn: 0.1631039	total: 1.91s	remaining: 1.76s
52:	learn: 0.1620387	total: 1.94s	remaining: 1.72s
53:	learn: 0.1607973	total: 1.98s	remaining: 1.69s
54:	learn: 0.1598126	total: 2.02s	remaining: 1.65s
55:	learn: 0.1588643	total: 2.05s	remaining: 1.61s
56:	learn: 0.1581679	total: 2.1s	remaining: 1.58s
57:	learn: 0.1565681	total: 2.14s	remaining: 1.55s
58:	learn: 0.1549369	total: 2.18s	remaining: 1.51s
59:	learn: 0.1537222	total: 2.21s	remaining: 1.48s
60:	learn: 0.1530963	total: 2.25s	remaining: 1.44s
61:	learn: 0.1525169	total: 2.29s	remaining: 1.4s
62:	learn: 0.1511220	total: 2.33s	remaining: 1.37s
63:	learn: 0.1503056	total: 2.37s	remaining: 1.33s
64:	learn: 0.1490784	total: 2.41s	remaining: 1.3s
65:	learn: 0.1473700	total: 2.44s	remaining: 1.26s
66:	learn: 0.1457683	total: 2.48s	remaining: 1.22s
67:	learn: 0.1449296	total: 2.52s	remaining: 1.18s
68:	learn: 0.1438806	total: 2.56s	remaining: 1.15s
69:	learn: 0.1434154	total: 2.6s	remaining: 1.11s
70:	learn: 0.1419217	total: 2.63s	remaining: 1.07s
71:	learn: 0.1411224	total: 2.67s	remaining: 1.04s
72:	learn: 0.1406366	total: 2.7s	remaining: 999ms
73:	learn: 0.1402358	total: 2.73s	remaining: 961ms
74:	learn: 0.1389942	total: 2.78s	remaining: 927ms
75:	learn: 0.1385297	total: 2.82s	remaining: 890ms
76:	learn: 0.1380696	total: 2.85s	remaining: 853ms
77:	learn: 0.1369878	total: 2.89s	remaining: 815ms
78:	learn: 0.1361059	total: 2.93s	remaining: 778ms
79:	learn: 0.1354258	total: 2.96s	remaining: 741ms
80:	learn: 0.1348941	total: 3.01s	remaining: 705ms
81:	learn: 0.1345502	total: 3.04s	remaining: 668ms
82:	learn: 0.1341479	total: 3.08s	remaining: 631ms
83:	learn: 0.1332549	total: 3.12s	remaining: 595ms
84:	learn: 0.1326225	total: 3.16s	remaining: 558ms
85:	learn: 0.1321774	total: 3.2s	remaining: 520ms
86:	learn: 0.1310336	total: 3.25s	remaining: 485ms
87:	learn: 0.1306396	total: 3.28s	remaining: 447ms
88:	learn: 0.1298400	total: 3.32s	remaining: 410ms
89:	learn: 0.1294746	total: 3.35s	remaining: 373ms
90:	learn: 0.1288828	total: 3.39s	remaining: 335ms
91:	learn: 0.1285480	total: 3.43s	remaining: 298ms
92:	learn: 0.1277930	total: 3.47s	remaining: 261ms
93:	learn: 0.1265265	total: 3.51s	remaining: 224ms
94:	learn: 0.1260912	total: 3.54s	remaining: 187ms
95:	learn: 0.1253003	total: 3.58s	remaining: 149ms
96:	learn: 0.1243695	total: 3.62s	remaining: 112ms
97:	learn: 0.1235273	total: 3.66s	remaining: 74.7ms
98:	learn: 0.1230345	total: 3.71s	remaining: 37.4ms
99:	learn: 0.1227324	total: 3.74s	remaining: 0us
0:	learn: 0.6509719	total: 35.9ms	remaining: 3.55s
1:	learn: 0.6020890	total: 81.8ms	remaining: 4.01s
2:	learn: 0.5654535	total: 118ms	remaining: 3.8s
3:	learn: 0.5294275	total: 152ms	remaining: 3.66s
4:	learn: 0.4956424	total: 189ms	remaining: 3.58s
5:	learn: 0.4661586	total: 224ms	remaining: 3.5s
6:	learn: 0.4445128	total: 268ms	remaining: 3.57s
7:	learn: 0.4211374	total: 312ms	remaining: 3.59s
8:	learn: 0.3955347	total: 348ms	remaining: 3.52s
9:	learn: 0.3720148	total: 383ms	remaining: 3.45s
10:	learn: 0.3523635	total: 419ms	remaining: 3.39s
11:	learn: 0.3347254	total: 455ms	remaining: 3.33s
12:	learn: 0.3230482	total: 491ms	remaining: 3.29s
13:	learn: 0.3065965	total: 542ms	remaining: 3.33s
14:	learn: 0.2970749	total: 578ms	remaining: 3.27s
15:	learn: 0.2871629	total: 613ms	remaining: 3.22s
16:	learn: 0.2770954	total: 632ms	remaining: 3.09s
17:	learn: 0.2679117	total: 667ms	remaining: 3.04s
18:	learn: 0.2601215	total: 705ms	remaining: 3.01s
19:	learn: 0.2514976	total: 741ms	remaining: 2.96s
20:	learn: 0.2431400	total: 782ms	remaining: 2.94s
21:	learn: 0.2372216	total: 818ms	remaining: 2.9s
22:	learn: 0.2289316	total: 854ms	remaining: 2.86s
23:	learn: 0.2245784	total: 892ms	remaining: 2.82s
24:	learn: 0.2197266	total: 928ms	remaining: 2.78s
25:	learn: 0.2159343	total: 964ms	remaining: 2.74s
26:	learn: 0.2115738	total: 1.01s	remaining: 2.73s
27:	learn: 0.2078047	total: 1.05s	remaining: 2.69s
28:	learn: 0.2042431	total: 1.08s	remaining: 2.65s
29:	learn: 0.2002614	total: 1.12s	remaining: 2.61s
30:	learn: 0.1960065	total: 1.16s	remaining: 2.58s
31:	learn: 0.1920293	total: 1.2s	remaining: 2.54s
32:	learn: 0.1889482	total: 1.24s	remaining: 2.52s
33:	learn: 0.1854658	total: 1.29s	remaining: 2.5s
34:	learn: 0.1812703	total: 1.32s	remaining: 2.46s
35:	learn: 0.1791590	total: 1.36s	remaining: 2.42s
36:	learn: 0.1759942	total: 1.4s	remaining: 2.38s
37:	learn: 0.1722047	total: 1.43s	remaining: 2.33s
38:	learn: 0.1698119	total: 1.47s	remaining: 2.3s
39:	learn: 0.1671544	total: 1.51s	remaining: 2.26s
40:	learn: 0.1654468	total: 1.54s	remaining: 2.22s
41:	learn: 0.1632825	total: 1.58s	remaining: 2.18s
42:	learn: 0.1619266	total: 1.61s	remaining: 2.14s
43:	learn: 0.1601512	total: 1.65s	remaining: 2.1s
44:	learn: 0.1574705	total: 1.69s	remaining: 2.07s
45:	learn: 0.1550155	total: 1.73s	remaining: 2.03s
46:	learn: 0.1540709	total: 1.76s	remaining: 1.99s
47:	learn: 0.1522576	total: 1.8s	remaining: 1.95s
48:	learn: 0.1509553	total: 1.83s	remaining: 1.91s
49:	learn: 0.1492534	total: 1.87s	remaining: 1.87s
50:	learn: 0.1472910	total: 1.92s	remaining: 1.84s

51:	learn: 0.1456915	total: 1.95s	remaining: 1.8s
52:	learn: 0.1441786	total: 2s	remaining: 1.77s
53:	learn: 0.1430157	total: 2.05s	remaining: 1.74s
54:	learn: 0.1419859	total: 2.08s	remaining: 1.71s
55:	learn: 0.1410462	total: 2.13s	remaining: 1.67s
56:	learn: 0.1401587	total: 2.17s	remaining: 1.63s
57:	learn: 0.1387045	total: 2.2s	remaining: 1.59s
58:	learn: 0.1379444	total: 2.24s	remaining: 1.55s
59:	learn: 0.1372372	total: 2.29s	remaining: 1.52s
60:	learn: 0.1362886	total: 2.33s	remaining: 1.49s
61:	learn: 0.1348591	total: 2.37s	remaining: 1.45s
62:	learn: 0.1341841	total: 2.41s	remaining: 1.41s
63:	learn: 0.1333220	total: 2.44s	remaining: 1.37s
64:	learn: 0.1320596	total: 2.48s	remaining: 1.33s
65:	learn: 0.1314162	total: 2.51s	remaining: 1.29s
66:	learn: 0.1299314	total: 2.56s	remaining: 1.26s
67:	learn: 0.1286896	total: 2.59s	remaining: 1.22s
68:	learn: 0.1277527	total: 2.63s	remaining: 1.18s
69:	learn: 0.1262683	total: 2.67s	remaining: 1.14s
70:	learn: 0.1259701	total: 2.7s	remaining: 1.1s
71:	learn: 0.1248108	total: 2.74s	remaining: 1.06s
72:	learn: 0.1243836	total: 2.78s	remaining: 1.03s
73:	learn: 0.1234801	total: 2.82s	remaining: 992ms
74:	learn: 0.1226632	total: 2.87s	remaining: 955ms
75:	learn: 0.1220415	total: 2.9s	remaining: 917ms
76:	learn: 0.1213101	total: 2.94s	remaining: 879ms
77:	learn: 0.1208564	total: 2.98s	remaining: 841ms
78:	learn: 0.1201675	total: 3.02s	remaining: 804ms
79:	learn: 0.1195695	total: 3.06s	remaining: 765ms
80:	learn: 0.1187882	total: 3.1s	remaining: 726ms
81:	learn: 0.1182363	total: 3.13s	remaining: 687ms
82:	learn: 0.1178774	total: 3.17s	remaining: 649ms
83:	learn: 0.1169741	total: 3.21s	remaining: 611ms
84:	learn: 0.1164734	total: 3.25s	remaining: 573ms
85:	learn: 0.1159817	total: 3.3s	remaining: 537ms
86:	learn: 0.1153952	total: 3.34s	remaining: 499ms
87:	learn: 0.1150138	total: 3.38s	remaining: 460ms
88:	learn: 0.1141695	total: 3.42s	remaining: 422ms
89:	learn: 0.1135582	total: 3.46s	remaining: 385ms
90:	learn: 0.1129018	total: 3.5s	remaining: 346ms
91:	learn: 0.1123371	total: 3.53s	remaining: 307ms
92:	learn: 0.1118665	total: 3.57s	remaining: 269ms
93:	learn: 0.1113637	total: 3.6s	remaining: 230ms
94:	learn: 0.1102692	total: 3.64s	remaining: 192ms
95:	learn: 0.1097015	total: 3.68s	remaining: 153ms
96:	learn: 0.1091500	total: 3.72s	remaining: 115ms
97:	learn: 0.1085090	total: 3.75s	remaining: 76.6ms
98:	learn: 0.1074170	total: 3.79s	remaining: 38.3ms
99:	learn: 0.1067078	total: 3.83s	remaining: 0us
0:	learn: 0.6508348	total: 36.7ms	remaining: 3.63s
1:	learn: 0.6078480	total: 74.7ms	remaining: 3.66s
2:	learn: 0.5670973	total: 112ms	remaining: 3.63s
3:	learn: 0.5283949	total: 150ms	remaining: 3.6s
4:	learn: 0.4959166	total: 187ms	remaining: 3.55s
5:	learn: 0.4712487	total: 224ms	remaining: 3.51s
6:	learn: 0.4493432	total: 271ms	remaining: 3.59s
7:	learn: 0.4251239	total: 307ms	remaining: 3.53s
8:	learn: 0.4000466	total: 349ms	remaining: 3.53s
9:	learn: 0.3790972	total: 386ms	remaining: 3.48s
10:	learn: 0.3608026	total: 423ms	remaining: 3.42s
11:	learn: 0.3426061	total: 459ms	remaining: 3.37s
12:	learn: 0.3307967	total: 502ms	remaining: 3.36s
13:	learn: 0.3152901	total: 542ms	remaining: 3.33s
14:	learn: 0.3016123	total: 579ms	remaining: 3.28s
15:	learn: 0.2907064	total: 621ms	remaining: 3.26s
16:	learn: 0.2790097	total: 657ms	remaining: 3.21s
17:	learn: 0.2687192	total: 693ms	remaining: 3.16s
18:	learn: 0.2604770	total: 740ms	remaining: 3.15s
19:	learn: 0.2538520	total: 778ms	remaining: 3.11s
20:	learn: 0.2452745	total: 816ms	remaining: 3.07s
21:	learn: 0.2397876	total: 854ms	remaining: 3.03s
22:	learn: 0.2323341	total: 892ms	remaining: 2.99s
23:	learn: 0.2281031	total: 912ms	remaining: 2.89s
24:	learn: 0.2239697	total: 958ms	remaining: 2.87s
25:	learn: 0.2177234	total: 996ms	remaining: 2.83s
26:	learn: 0.2136502	total: 1.03s	remaining: 2.79s
27:	learn: 0.2095310	total: 1.07s	remaining: 2.75s
28:	learn: 0.2062731	total: 1.11s	remaining: 2.71s
29:	learn: 0.2011577	total: 1.15s	remaining: 2.67s
30:	learn: 0.1975007	total: 1.19s	remaining: 2.65s
31:	learn: 0.1929600	total: 1.23s	remaining: 2.61s
32:	learn: 0.1897422	total: 1.26s	remaining: 2.57s
33:	learn: 0.1859675	total: 1.3s	remaining: 2.52s
34:	learn: 0.1827021	total: 1.34s	remaining: 2.48s
35:	learn: 0.1799893	total: 1.38s	remaining: 2.46s
36:	learn: 0.1769820	total: 1.42s	remaining: 2.43s
37:	learn: 0.1735673	total: 1.46s	remaining: 2.38s
38:	learn: 0.1708026	total: 1.5s	remaining: 2.35s
39:	learn: 0.1689116	total: 1.54s	remaining: 2.31s
40:	learn: 0.1673618	total: 1.57s	remaining: 2.26s
41:	learn: 0.1651040	total: 1.61s	remaining: 2.22s
42:	learn: 0.1638129	total: 1.65s	remaining: 2.19s
43:	learn: 0.1624469	total: 1.69s	remaining: 2.15s
44:	learn: 0.1601504	total: 1.73s	remaining: 2.11s
45:	learn: 0.1581727	total: 1.77s	remaining: 2.07s
46:	learn: 0.1560981	total: 1.8s	remaining: 2.03s
47:	learn: 0.1540697	total: 1.84s	remaining: 1.99s
48:	learn: 0.1529908	total: 1.88s	remaining: 1.96s
49:	learn: 0.1512204	total: 1.92s	remaining: 1.92s
50:	learn: 0.1493843	total: 1.95s	remaining: 1.88s
51:	learn: 0.1479547	total: 1.99s	remaining: 1.84s
52:	learn: 0.1462726	total: 2.03s	remaining: 1.8s

53:	learn: 0.1448924	total: 2.06s	remaining: 1.76s
54:	learn: 0.1439185	total: 2.11s	remaining: 1.73s
55:	learn: 0.1427119	total: 2.15s	remaining: 1.69s
56:	learn: 0.1418941	total: 2.18s	remaining: 1.65s
57:	learn: 0.1409165	total: 2.22s	remaining: 1.61s
58:	learn: 0.1398811	total: 2.26s	remaining: 1.57s
59:	learn: 0.1388896	total: 2.3s	remaining: 1.53s
60:	learn: 0.1375950	total: 2.34s	remaining: 1.5s
61:	learn: 0.1359916	total: 2.39s	remaining: 1.46s
62:	learn: 0.1352204	total: 2.42s	remaining: 1.42s
63:	learn: 0.1343825	total: 2.46s	remaining: 1.38s
64:	learn: 0.1336517	total: 2.5s	remaining: 1.34s
65:	learn: 0.1329526	total: 2.54s	remaining: 1.31s
66:	learn: 0.1322706	total: 2.58s	remaining: 1.27s
67:	learn: 0.1309894	total: 2.62s	remaining: 1.23s
68:	learn: 0.1303127	total: 2.66s	remaining: 1.19s
69:	learn: 0.1293494	total: 2.7s	remaining: 1.16s
70:	learn: 0.1287864	total: 2.73s	remaining: 1.12s
71:	learn: 0.1280322	total: 2.77s	remaining: 1.08s
72:	learn: 0.1271478	total: 2.81s	remaining: 1.04s
73:	learn: 0.1267795	total: 2.85s	remaining: 1s
74:	learn: 0.1264190	total: 2.89s	remaining: 964ms
75:	learn: 0.1257775	total: 2.93s	remaining: 925ms
76:	learn: 0.1252302	total: 2.97s	remaining: 886ms
77:	learn: 0.1247103	total: 3s	remaining: 848ms
78:	learn: 0.1243571	total: 3.05s	remaining: 811ms
79:	learn: 0.1235042	total: 3.09s	remaining: 772ms
80:	learn: 0.1224668	total: 3.13s	remaining: 734ms
81:	learn: 0.1218732	total: 3.17s	remaining: 696ms
82:	learn: 0.1213002	total: 3.21s	remaining: 657ms
83:	learn: 0.1206586	total: 3.24s	remaining: 618ms
84:	learn: 0.1197062	total: 3.29s	remaining: 580ms
85:	learn: 0.1192002	total: 3.33s	remaining: 541ms
86:	learn: 0.1184944	total: 3.37s	remaining: 504ms
87:	learn: 0.1181843	total: 3.41s	remaining: 465ms
88:	learn: 0.1174818	total: 3.44s	remaining: 426ms
89:	learn: 0.1168280	total: 3.48s	remaining: 387ms
90:	learn: 0.1161019	total: 3.52s	remaining: 349ms
91:	learn: 0.1155336	total: 3.56s	remaining: 310ms
92:	learn: 0.1146866	total: 3.6s	remaining: 271ms
93:	learn: 0.1139102	total: 3.63s	remaining: 232ms
94:	learn: 0.1129170	total: 3.67s	remaining: 193ms
95:	learn: 0.1122382	total: 3.71s	remaining: 155ms
96:	learn: 0.1118209	total: 3.76s	remaining: 116ms
97:	learn: 0.1111004	total: 3.79s	remaining: 77.4ms
98:	learn: 0.1102797	total: 3.83s	remaining: 38.7ms
99:	learn: 0.1099350	total: 3.87s	remaining: 0us
0:	learn: 0.6386549	total: 35.3ms	remaining: 3.49s
1:	learn: 0.5794667	total: 70.3ms	remaining: 3.44s
2:	learn: 0.5350597	total: 105ms	remaining: 3.4s
3:	learn: 0.4902950	total: 140ms	remaining: 3.36s
4:	learn: 0.4542138	total: 175ms	remaining: 3.33s
5:	learn: 0.4276605	total: 217ms	remaining: 3.4s
6:	learn: 0.4042525	total: 262ms	remaining: 3.48s
7:	learn: 0.3819469	total: 298ms	remaining: 3.42s
8:	learn: 0.3594459	total: 333ms	remaining: 3.36s
9:	learn: 0.3372844	total: 373ms	remaining: 3.36s
10:	learn: 0.3195579	total: 411ms	remaining: 3.33s
11:	learn: 0.3025844	total: 446ms	remaining: 3.27s
12:	learn: 0.2914362	total: 489ms	remaining: 3.27s
13:	learn: 0.2812717	total: 525ms	remaining: 3.22s
14:	learn: 0.2681212	total: 560ms	remaining: 3.17s
15:	learn: 0.2576900	total: 596ms	remaining: 3.13s
16:	learn: 0.2477187	total: 631ms	remaining: 3.08s
17:	learn: 0.2396752	total: 666ms	remaining: 3.03s
18:	learn: 0.2331245	total: 711ms	remaining: 3.03s
19:	learn: 0.2258934	total: 746ms	remaining: 2.98s
20:	learn: 0.2202542	total: 783ms	remaining: 2.94s
21:	learn: 0.2158870	total: 823ms	remaining: 2.92s
22:	learn: 0.2099379	total: 858ms	remaining: 2.87s
23:	learn: 0.2056097	total: 894ms	remaining: 2.83s
24:	learn: 0.2019088	total: 938ms	remaining: 2.81s
25:	learn: 0.1984477	total: 973ms	remaining: 2.77s
26:	learn: 0.1953531	total: 1.01s	remaining: 2.73s
27:	learn: 0.1919639	total: 1.04s	remaining: 2.69s
28:	learn: 0.1886041	total: 1.08s	remaining: 2.65s
29:	learn: 0.1851554	total: 1.12s	remaining: 2.61s
30:	learn: 0.1823516	total: 1.16s	remaining: 2.58s
31:	learn: 0.1794975	total: 1.2s	remaining: 2.54s
32:	learn: 0.1772368	total: 1.23s	remaining: 2.5s
33:	learn: 0.1736062	total: 1.27s	remaining: 2.46s
34:	learn: 0.1703676	total: 1.3s	remaining: 2.42s
35:	learn: 0.1690795	total: 1.34s	remaining: 2.38s
36:	learn: 0.1662960	total: 1.39s	remaining: 2.37s
37:	learn: 0.1643045	total: 1.43s	remaining: 2.33s
38:	learn: 0.1625412	total: 1.46s	remaining: 2.29s
39:	learn: 0.1609807	total: 1.5s	remaining: 2.25s
40:	learn: 0.1600736	total: 1.52s	remaining: 2.18s
41:	learn: 0.1586133	total: 1.55s	remaining: 2.14s
42:	learn: 0.1576141	total: 1.59s	remaining: 2.1s
43:	learn: 0.1556886	total: 1.63s	remaining: 2.08s
44:	learn: 0.1543002	total: 1.67s	remaining: 2.04s
45:	learn: 0.1531071	total: 1.71s	remaining: 2s
46:	learn: 0.1513682	total: 1.74s	remaining: 1.96s
47:	learn: 0.1499784	total: 1.78s	remaining: 1.93s
48:	learn: 0.1486980	total: 1.81s	remaining: 1.89s
49:	learn: 0.1478048	total: 1.86s	remaining: 1.86s
50:	learn: 0.1467731	total: 1.9s	remaining: 1.82s
51:	learn: 0.1458016	total: 1.93s	remaining: 1.78s
52:	learn: 0.1448808	total: 1.97s	remaining: 1.74s
53:	learn: 0.1439293	total: 2s	remaining: 1.7s
54:	learn: 0.1432615	total: 2.04s	remaining: 1.67s

55:	learn: 0.1427114	total: 2.08s	remaining: 1.63s
56:	learn: 0.1413225	total: 2.11s	remaining: 1.59s
57:	learn: 0.1402600	total: 2.15s	remaining: 1.56s
58:	learn: 0.1397467	total: 2.19s	remaining: 1.52s
59:	learn: 0.1388832	total: 2.22s	remaining: 1.48s
60:	learn: 0.1382990	total: 2.26s	remaining: 1.44s
61:	learn: 0.1371017	total: 2.3s	remaining: 1.41s
62:	learn: 0.1365238	total: 2.34s	remaining: 1.37s
63:	learn: 0.1355235	total: 2.37s	remaining: 1.33s
64:	learn: 0.1345921	total: 2.42s	remaining: 1.3s
65:	learn: 0.1329527	total: 2.45s	remaining: 1.26s
66:	learn: 0.1316435	total: 2.49s	remaining: 1.23s
67:	learn: 0.1309579	total: 2.53s	remaining: 1.19s
68:	learn: 0.1301546	total: 2.57s	remaining: 1.16s
69:	learn: 0.1298815	total: 2.59s	remaining: 1.11s
70:	learn: 0.1290126	total: 2.63s	remaining: 1.07s
71:	learn: 0.1284422	total: 2.66s	remaining: 1.04s
72:	learn: 0.1278460	total: 2.7s	remaining: 999ms
73:	learn: 0.1271819	total: 2.75s	remaining: 966ms
74:	learn: 0.1260777	total: 2.79s	remaining: 929ms
75:	learn: 0.1252168	total: 2.82s	remaining: 891ms
76:	learn: 0.1250987	total: 2.83s	remaining: 845ms
77:	learn: 0.1237966	total: 2.86s	remaining: 808ms
78:	learn: 0.1230022	total: 2.9s	remaining: 771ms
79:	learn: 0.1223144	total: 2.93s	remaining: 734ms
80:	learn: 0.1213608	total: 2.98s	remaining: 698ms
81:	learn: 0.1204932	total: 3.01s	remaining: 661ms
82:	learn: 0.1200936	total: 3.05s	remaining: 624ms
83:	learn: 0.1197604	total: 3.08s	remaining: 587ms
84:	learn: 0.1194166	total: 3.12s	remaining: 550ms
85:	learn: 0.1189244	total: 3.15s	remaining: 513ms
86:	learn: 0.1180873	total: 3.19s	remaining: 477ms
87:	learn: 0.1170968	total: 3.23s	remaining: 441ms
88:	learn: 0.1165278	total: 3.27s	remaining: 405ms
89:	learn: 0.1160324	total: 3.31s	remaining: 368ms
90:	learn: 0.1149155	total: 3.36s	remaining: 333ms
91:	learn: 0.1145685	total: 3.41s	remaining: 296ms
92:	learn: 0.1140367	total: 3.45s	remaining: 260ms
93:	learn: 0.1132186	total: 3.49s	remaining: 223ms
94:	learn: 0.1129768	total: 3.52s	remaining: 186ms
95:	learn: 0.1126415	total: 3.56s	remaining: 148ms
96:	learn: 0.1121781	total: 3.6s	remaining: 111ms
97:	learn: 0.1116957	total: 3.64s	remaining: 74.3ms
98:	learn: 0.1109720	total: 3.68s	remaining: 37.1ms
99:	learn: 0.1106995	total: 3.71s	remaining: 0us
0:	learn: 0.6374431	total: 44.1ms	remaining: 4.37s
1:	learn: 0.5752510	total: 80.2ms	remaining: 3.93s
2:	learn: 0.5299881	total: 115ms	remaining: 3.73s
3:	learn: 0.4868399	total: 151ms	remaining: 3.62s
4:	learn: 0.4476466	total: 188ms	remaining: 3.58s
5:	learn: 0.4194563	total: 226ms	remaining: 3.53s
6:	learn: 0.3957873	total: 269ms	remaining: 3.57s
7:	learn: 0.3706250	total: 306ms	remaining: 3.52s
8:	learn: 0.3433542	total: 344ms	remaining: 3.48s
9:	learn: 0.3192400	total: 382ms	remaining: 3.44s
10:	learn: 0.3003060	total: 419ms	remaining: 3.39s
11:	learn: 0.2837023	total: 456ms	remaining: 3.34s
12:	learn: 0.2738870	total: 502ms	remaining: 3.36s
13:	learn: 0.2590565	total: 538ms	remaining: 3.31s
14:	learn: 0.2509095	total: 579ms	remaining: 3.28s
15:	learn: 0.2417859	total: 619ms	remaining: 3.25s
16:	learn: 0.2320056	total: 656ms	remaining: 3.2s
17:	learn: 0.2246093	total: 693ms	remaining: 3.16s
18:	learn: 0.2181759	total: 739ms	remaining: 3.15s
19:	learn: 0.2108050	total: 775ms	remaining: 3.1s
20:	learn: 0.2034753	total: 812ms	remaining: 3.05s
21:	learn: 0.1992330	total: 850ms	remaining: 3.01s
22:	learn: 0.1932955	total: 895ms	remaining: 3s
23:	learn: 0.1896366	total: 954ms	remaining: 3.02s
24:	learn: 0.1862890	total: 991ms	remaining: 2.97s
25:	learn: 0.1832150	total: 1.03s	remaining: 2.92s
26:	learn: 0.1790708	total: 1.06s	remaining: 2.87s
27:	learn: 0.1757052	total: 1.1s	remaining: 2.82s
28:	learn: 0.1729793	total: 1.13s	remaining: 2.77s
29:	learn: 0.1698562	total: 1.17s	remaining: 2.74s
30:	learn: 0.1674814	total: 1.21s	remaining: 2.69s
31:	learn: 0.1639651	total: 1.25s	remaining: 2.66s
32:	learn: 0.1622546	total: 1.29s	remaining: 2.62s
33:	learn: 0.1598741	total: 1.32s	remaining: 2.57s
34:	learn: 0.1568186	total: 1.36s	remaining: 2.53s
35:	learn: 0.1554774	total: 1.37s	remaining: 2.43s
36:	learn: 0.1524067	total: 1.42s	remaining: 2.41s
37:	learn: 0.1497032	total: 1.45s	remaining: 2.37s
38:	learn: 0.1482602	total: 1.49s	remaining: 2.33s
39:	learn: 0.1463871	total: 1.52s	remaining: 2.29s
40:	learn: 0.1441313	total: 1.56s	remaining: 2.25s
41:	learn: 0.1420593	total: 1.61s	remaining: 2.22s
42:	learn: 0.1406964	total: 1.66s	remaining: 2.19s
43:	learn: 0.1387918	total: 1.7s	remaining: 2.16s
44:	learn: 0.1373152	total: 1.73s	remaining: 2.12s
45:	learn: 0.1362762	total: 1.77s	remaining: 2.08s
46:	learn: 0.1348280	total: 1.8s	remaining: 2.04s
47:	learn: 0.1332868	total: 1.84s	remaining: 2s
48:	learn: 0.1315807	total: 1.89s	remaining: 1.96s
49:	learn: 0.1310403	total: 1.93s	remaining: 1.93s
50:	learn: 0.1302947	total: 1.97s	remaining: 1.89s
51:	learn: 0.1296517	total: 2s	remaining: 1.85s
52:	learn: 0.1283217	total: 2.04s	remaining: 1.81s
53:	learn: 0.1269866	total: 2.08s	remaining: 1.77s
54:	learn: 0.1264353	total: 2.12s	remaining: 1.74s
55:	learn: 0.1258286	total: 2.16s	remaining: 1.7s
56:	learn: 0.1253112	total: 2.19s	remaining: 1.66s

57:	learn: 0.1246537	total: 2.23s	remaining: 1.62s
58:	learn: 0.1243764	total: 2.27s	remaining: 1.58s
59:	learn: 0.1226823	total: 2.3s	remaining: 1.54s
60:	learn: 0.1212926	total: 2.35s	remaining: 1.5s
61:	learn: 0.1205019	total: 2.39s	remaining: 1.46s
62:	learn: 0.1195329	total: 2.42s	remaining: 1.42s
63:	learn: 0.1183307	total: 2.46s	remaining: 1.38s
64:	learn: 0.1171004	total: 2.5s	remaining: 1.34s
65:	learn: 0.1160221	total: 2.53s	remaining: 1.3s
66:	learn: 0.1146497	total: 2.58s	remaining: 1.27s
67:	learn: 0.1137710	total: 2.62s	remaining: 1.23s
68:	learn: 0.1132005	total: 2.66s	remaining: 1.19s
69:	learn: 0.1124286	total: 2.7s	remaining: 1.16s
70:	learn: 0.1118732	total: 2.73s	remaining: 1.12s
71:	learn: 0.1112495	total: 2.77s	remaining: 1.08s
72:	learn: 0.1102018	total: 2.82s	remaining: 1.04s
73:	learn: 0.1089826	total: 2.85s	remaining: 1s
74:	learn: 0.1085821	total: 2.89s	remaining: 963ms
75:	learn: 0.1079499	total: 2.92s	remaining: 923ms
76:	learn: 0.1075228	total: 2.96s	remaining: 884ms
77:	learn: 0.1069206	total: 3s	remaining: 845ms
78:	learn: 0.1052506	total: 3.04s	remaining: 808ms
79:	learn: 0.1046080	total: 3.07s	remaining: 769ms
80:	learn: 0.1041675	total: 3.11s	remaining: 730ms
81:	learn: 0.1029500	total: 3.15s	remaining: 690ms
82:	learn: 0.1018841	total: 3.18s	remaining: 651ms
83:	learn: 0.1013749	total: 3.21s	remaining: 612ms
84:	learn: 0.1011997	total: 3.26s	remaining: 576ms
85:	learn: 0.1007905	total: 3.3s	remaining: 537ms
86:	learn: 0.0996097	total: 3.34s	remaining: 499ms
87:	learn: 0.0991499	total: 3.38s	remaining: 461ms
88:	learn: 0.0987371	total: 3.42s	remaining: 422ms
89:	learn: 0.0984127	total: 3.45s	remaining: 384ms
90:	learn: 0.0972676	total: 3.5s	remaining: 346ms
91:	learn: 0.0967957	total: 3.54s	remaining: 307ms
92:	learn: 0.0966385	total: 3.57s	remaining: 269ms
93:	learn: 0.0963524	total: 3.62s	remaining: 231ms
94:	learn: 0.0959695	total: 3.66s	remaining: 192ms
95:	learn: 0.0955920	total: 3.69s	remaining: 154ms
96:	learn: 0.0946564	total: 3.74s	remaining: 116ms
97:	learn: 0.0939474	total: 3.77s	remaining: 77ms
98:	learn: 0.0931073	total: 3.81s	remaining: 38.5ms
99:	learn: 0.0929016	total: 3.85s	remaining: 0us
0:	learn: 0.6372622	total: 35.7ms	remaining: 3.53s
1:	learn: 0.5821484	total: 71.6ms	remaining: 3.51s
2:	learn: 0.5311700	total: 108ms	remaining: 3.5s
3:	learn: 0.4847543	total: 145ms	remaining: 3.48s
4:	learn: 0.4424854	total: 182ms	remaining: 3.45s
5:	learn: 0.4155755	total: 218ms	remaining: 3.42s
6:	learn: 0.3923856	total: 264ms	remaining: 3.5s
7:	learn: 0.3672231	total: 300ms	remaining: 3.45s
8:	learn: 0.3396370	total: 337ms	remaining: 3.41s
9:	learn: 0.3190827	total: 374ms	remaining: 3.37s
10:	learn: 0.3014143	total: 414ms	remaining: 3.35s
11:	learn: 0.2851881	total: 450ms	remaining: 3.3s
12:	learn: 0.2731118	total: 495ms	remaining: 3.31s
13:	learn: 0.2589528	total: 531ms	remaining: 3.26s
14:	learn: 0.2477758	total: 566ms	remaining: 3.21s
15:	learn: 0.2378747	total: 602ms	remaining: 3.16s
16:	learn: 0.2285734	total: 646ms	remaining: 3.15s
17:	learn: 0.2202184	total: 683ms	remaining: 3.11s
18:	learn: 0.2134150	total: 729ms	remaining: 3.11s
19:	learn: 0.2059357	total: 765ms	remaining: 3.06s
20:	learn: 0.1996082	total: 803ms	remaining: 3.02s
21:	learn: 0.1955997	total: 839ms	remaining: 2.97s
22:	learn: 0.1921818	total: 876ms	remaining: 2.93s
23:	learn: 0.1884246	total: 913ms	remaining: 2.89s
24:	learn: 0.1851933	total: 961ms	remaining: 2.88s
25:	learn: 0.1828785	total: 999ms	remaining: 2.84s
26:	learn: 0.1801108	total: 1.04s	remaining: 2.8s
27:	learn: 0.1770605	total: 1.07s	remaining: 2.76s
28:	learn: 0.1740757	total: 1.11s	remaining: 2.72s
29:	learn: 0.1711643	total: 1.15s	remaining: 2.68s
30:	learn: 0.1677197	total: 1.19s	remaining: 2.66s
31:	learn: 0.1647914	total: 1.23s	remaining: 2.61s
32:	learn: 0.1619562	total: 1.26s	remaining: 2.57s
33:	learn: 0.1599197	total: 1.3s	remaining: 2.53s
34:	learn: 0.1581559	total: 1.34s	remaining: 2.48s
35:	learn: 0.1565452	total: 1.37s	remaining: 2.44s
36:	learn: 0.1539540	total: 1.42s	remaining: 2.43s
37:	learn: 0.1519285	total: 1.46s	remaining: 2.39s
38:	learn: 0.1501880	total: 1.5s	remaining: 2.34s
39:	learn: 0.1477981	total: 1.53s	remaining: 2.3s
40:	learn: 0.1458797	total: 1.57s	remaining: 2.26s
41:	learn: 0.1442349	total: 1.61s	remaining: 2.22s
42:	learn: 0.1420435	total: 1.66s	remaining: 2.21s
43:	learn: 0.1403873	total: 1.7s	remaining: 2.17s
44:	learn: 0.1395320	total: 1.74s	remaining: 2.13s
45:	learn: 0.1390222	total: 1.78s	remaining: 2.09s
46:	learn: 0.1372055	total: 1.81s	remaining: 2.05s
47:	learn: 0.1355598	total: 1.85s	remaining: 2s
48:	learn: 0.1339611	total: 1.9s	remaining: 1.97s
49:	learn: 0.1322620	total: 1.94s	remaining: 1.94s
50:	learn: 0.1306658	total: 1.97s	remaining: 1.89s
51:	learn: 0.1293790	total: 2.01s	remaining: 1.85s
52:	learn: 0.1285210	total: 2.04s	remaining: 1.81s
53:	learn: 0.1275680	total: 2.08s	remaining: 1.77s
54:	learn: 0.1266398	total: 2.13s	remaining: 1.74s
55:	learn: 0.1259895	total: 2.17s	remaining: 1.7s
56:	learn: 0.1249748	total: 2.2s	remaining: 1.66s
57:	learn: 0.1246202	total: 2.24s	remaining: 1.62s
58:	learn: 0.1241579	total: 2.28s	remaining: 1.58s

59:	learn: 0.1234748	total: 2.32s	remaining: 1.55s
60:	learn: 0.1223103	total: 2.37s	remaining: 1.52s
61:	learn: 0.1212888	total: 2.41s	remaining: 1.48s
62:	learn: 0.1204776	total: 2.45s	remaining: 1.44s
63:	learn: 0.1193016	total: 2.49s	remaining: 1.4s
64:	learn: 0.1181517	total: 2.53s	remaining: 1.36s
65:	learn: 0.1171216	total: 2.57s	remaining: 1.32s
66:	learn: 0.1169030	total: 2.62s	remaining: 1.29s
67:	learn: 0.1154282	total: 2.66s	remaining: 1.25s
68:	learn: 0.1143278	total: 2.7s	remaining: 1.21s
69:	learn: 0.1131315	total: 2.74s	remaining: 1.17s
70:	learn: 0.1118958	total: 2.78s	remaining: 1.14s
71:	learn: 0.1112121	total: 2.82s	remaining: 1.09s
72:	learn: 0.1104776	total: 2.86s	remaining: 1.06s
73:	learn: 0.1094043	total: 2.9s	remaining: 1.02s
74:	learn: 0.1091325	total: 2.94s	remaining: 981ms
75:	learn: 0.1081689	total: 2.98s	remaining: 942ms
76:	learn: 0.1073146	total: 3.02s	remaining: 902ms
77:	learn: 0.1064339	total: 3.06s	remaining: 864ms
78:	learn: 0.1061093	total: 3.1s	remaining: 824ms
79:	learn: 0.1053258	total: 3.13s	remaining: 784ms
80:	learn: 0.1049294	total: 3.17s	remaining: 744ms
81:	learn: 0.1044174	total: 3.21s	remaining: 704ms
82:	learn: 0.1035921	total: 3.24s	remaining: 664ms
83:	learn: 0.1033028	total: 3.29s	remaining: 626ms
84:	learn: 0.1024661	total: 3.33s	remaining: 587ms
85:	learn: 0.1023975	total: 3.33s	remaining: 542ms
86:	learn: 0.1022069	total: 3.37s	remaining: 503ms
87:	learn: 0.1013134	total: 3.4s	remaining: 464ms
88:	learn: 0.1006822	total: 3.44s	remaining: 426ms
89:	learn: 0.1000489	total: 3.48s	remaining: 387ms
90:	learn: 0.0994164	total: 3.53s	remaining: 349ms
91:	learn: 0.0989962	total: 3.57s	remaining: 310ms
92:	learn: 0.0980730	total: 3.61s	remaining: 271ms
93:	learn: 0.0977863	total: 3.65s	remaining: 233ms
94:	learn: 0.0969462	total: 3.7s	remaining: 195ms
95:	learn: 0.0961167	total: 3.74s	remaining: 156ms
96:	learn: 0.0952094	total: 3.78s	remaining: 117ms
97:	learn: 0.0948287	total: 3.82s	remaining: 77.9ms
98:	learn: 0.0945634	total: 3.85s	remaining: 38.9ms
99:	learn: 0.0938662	total: 3.89s	remaining: 0us
0:	learn: 0.6399802	total: 4.23ms	remaining: 419ms
1:	learn: 0.5920050	total: 8.65ms	remaining: 424ms
2:	learn: 0.5463100	total: 12.6ms	remaining: 407ms
3:	learn: 0.5054124	total: 16.4ms	remaining: 394ms
4:	learn: 0.4726471	total: 20.4ms	remaining: 387ms
5:	learn: 0.4395707	total: 24.3ms	remaining: 381ms
6:	learn: 0.4099450	total: 28.2ms	remaining: 375ms
7:	learn: 0.3833864	total: 32.2ms	remaining: 370ms
8:	learn: 0.3652249	total: 36.1ms	remaining: 365ms
9:	learn: 0.3473668	total: 40ms	remaining: 360ms
10:	learn: 0.3325303	total: 44ms	remaining: 356ms
11:	learn: 0.3134796	total: 47.9ms	remaining: 351ms
12:	learn: 0.3003235	total: 51.8ms	remaining: 347ms
13:	learn: 0.2910670	total: 56.3ms	remaining: 346ms
14:	learn: 0.2812116	total: 60.5ms	remaining: 343ms
15:	learn: 0.2702385	total: 64.9ms	remaining: 341ms
16:	learn: 0.2620693	total: 69.1ms	remaining: 337ms
17:	learn: 0.2538134	total: 73.2ms	remaining: 333ms
18:	learn: 0.2474740	total: 77.3ms	remaining: 330ms
19:	learn: 0.2399623	total: 81.7ms	remaining: 327ms
20:	learn: 0.2350009	total: 86.1ms	remaining: 324ms
21:	learn: 0.2279423	total: 90.2ms	remaining: 320ms
22:	learn: 0.2222727	total: 94.3ms	remaining: 316ms
23:	learn: 0.2167889	total: 98.4ms	remaining: 311ms
24:	learn: 0.2135182	total: 102ms	remaining: 307ms
25:	learn: 0.2108055	total: 107ms	remaining: 303ms
26:	learn: 0.2069026	total: 111ms	remaining: 299ms
27:	learn: 0.2046944	total: 115ms	remaining: 295ms
28:	learn: 0.1999710	total: 119ms	remaining: 291ms
29:	learn: 0.1976390	total: 123ms	remaining: 287ms
30:	learn: 0.1944717	total: 127ms	remaining: 283ms
31:	learn: 0.1925993	total: 131ms	remaining: 279ms
32:	learn: 0.1902858	total: 135ms	remaining: 275ms
33:	learn: 0.1885999	total: 139ms	remaining: 270ms
34:	learn: 0.1867379	total: 143ms	remaining: 266ms
35:	learn: 0.1857383	total: 148ms	remaining: 262ms
36:	learn: 0.1839251	total: 152ms	remaining: 258ms
37:	learn: 0.1819978	total: 156ms	remaining: 254ms
38:	learn: 0.1804572	total: 160ms	remaining: 250ms
39:	learn: 0.1791262	total: 164ms	remaining: 246ms
40:	learn: 0.1778673	total: 168ms	remaining: 242ms
41:	learn: 0.1766316	total: 172ms	remaining: 238ms
42:	learn: 0.1756659	total: 177ms	remaining: 235ms
43:	learn: 0.1751847	total: 181ms	remaining: 231ms
44:	learn: 0.1744875	total: 185ms	remaining: 226ms
45:	learn: 0.1733619	total: 189ms	remaining: 222ms
46:	learn: 0.1723113	total: 193ms	remaining: 218ms
47:	learn: 0.1712960	total: 201ms	remaining: 218ms
48:	learn: 0.1703983	total: 213ms	remaining: 221ms
49:	learn: 0.1695758	total: 217ms	remaining: 217ms
50:	learn: 0.1689991	total: 221ms	remaining: 212ms
51:	learn: 0.1682738	total: 225ms	remaining: 208ms
52:	learn: 0.1676331	total: 229ms	remaining: 203ms
53:	learn: 0.1670368	total: 233ms	remaining: 198ms
54:	learn: 0.1666556	total: 237ms	remaining: 194ms
55:	learn: 0.1658173	total: 241ms	remaining: 189ms
56:	learn: 0.1654336	total: 245ms	remaining: 185ms
57:	learn: 0.1648965	total: 249ms	remaining: 181ms
58:	learn: 0.1645836	total: 253ms	remaining: 176ms
59:	learn: 0.1640180	total: 258ms	remaining: 172ms
60:	learn: 0.1635144	total: 262ms	remaining: 167ms

Iteration	learn	total	remaining
61:	learn: 0.1630275	total: 266ms	remaining: 163ms
62:	learn: 0.1626707	total: 270ms	remaining: 159ms
63:	learn: 0.1620802	total: 275ms	remaining: 154ms
64:	learn: 0.1618098	total: 279ms	remaining: 150ms
65:	learn: 0.1615288	total: 283ms	remaining: 146ms
66:	learn: 0.1612436	total: 287ms	remaining: 141ms
67:	learn: 0.1610044	total: 291ms	remaining: 137ms
68:	learn: 0.1604973	total: 296ms	remaining: 133ms
69:	learn: 0.1599551	total: 300ms	remaining: 129ms
70:	learn: 0.1595256	total: 304ms	remaining: 124ms
71:	learn: 0.1592306	total: 308ms	remaining: 120ms
72:	learn: 0.1589379	total: 312ms	remaining: 115ms
73:	learn: 0.1586019	total: 317ms	remaining: 111ms
74:	learn: 0.1581668	total: 321ms	remaining: 107ms
75:	learn: 0.1578728	total: 325ms	remaining: 103ms
76:	learn: 0.1575753	total: 329ms	remaining: 98.3ms
77:	learn: 0.1572233	total: 333ms	remaining: 93.9ms
78:	learn: 0.1569580	total: 337ms	remaining: 89.6ms
79:	learn: 0.1566870	total: 342ms	remaining: 85.4ms
80:	learn: 0.1561743	total: 346ms	remaining: 81.1ms
81:	learn: 0.1558279	total: 350ms	remaining: 76.8ms
82:	learn: 0.1553834	total: 354ms	remaining: 72.5ms
83:	learn: 0.1551273	total: 358ms	remaining: 68.2ms
84:	learn: 0.1546140	total: 362ms	remaining: 64ms
85:	learn: 0.1544241	total: 367ms	remaining: 59.7ms
86:	learn: 0.1541201	total: 371ms	remaining: 55.5ms
87:	learn: 0.1538318	total: 375ms	remaining: 51.2ms
88:	learn: 0.1535221	total: 379ms	remaining: 46.9ms
89:	learn: 0.1533313	total: 383ms	remaining: 42.6ms
90:	learn: 0.1531661	total: 387ms	remaining: 38.3ms
91:	learn: 0.1528827	total: 391ms	remaining: 34ms
92:	learn: 0.1525882	total: 399ms	remaining: 30ms
93:	learn: 0.1523843	total: 408ms	remaining: 26ms
94:	learn: 0.1519934	total: 412ms	remaining: 21.7ms
95:	learn: 0.1518698	total: 416ms	remaining: 17.3ms
96:	learn: 0.1516684	total: 420ms	remaining: 13ms
97:	learn: 0.1514024	total: 424ms	remaining: 8.64ms
98:	learn: 0.1511753	total: 428ms	remaining: 4.32ms
99:	learn: 0.1509778	total: 431ms	remaining: 0ms



Best estimator : {'model\_\_depth': 5, 'model\_\_iterations': 100, 'model\_\_learning\_rate': 0.04}  
 Best score: 0.5436006495379874

```
In [173...] q=clf.predict(X_test.values)
             f1_score(q,y_test)
```

```
Out[173...] 0.6242774566473989
```

```
In [179...] fig = plt.figure(figsize=(10,7))
             ax1 = fig.add_subplot(221)
             print("-"*100)
             from sklearn.metrics import confusion_matrix
             cf_matr1=confusion_matrix(y_train,clf.predict(X_train))
             plt.title('Train confusion matrix')
             Heatmapgen(cf_matr1)
             ax2 = fig.add_subplot(222)
             cf_matr2=confusion_matrix(y_test,clf.predict(X_test))
             plt.title('Test confusion matrix')
             Heatmapgen(cf_matr2)
             print('F1 score on test set =',f1_score(y_test,clf.predict(X_test)))
```

F1 score on test set = 0.6242774566473989



```
In [180...] from prettytable import PrettyTable
             x = PrettyTable()
             x.field_names=['Sl No','Classifier Name','Train/Validation F1_scr','Test F1_Scr']
```

```

x.add_row([1, 'KNN', 0.518, 0.500])
x.add_row([2, 'Naive Bayes', 0.544, 0.545])
x.add_row([3, 'SVM(rbf)', 0.544, 0.564])
x.add_row([4, 'DecisionTree', 0.536, 0.544])
x.add_row([5, 'Logistic Regression', 0.561, 0.569])
x.add_row([6, 'Random Forest', 0.587, 0.611])
x.add_row([7, 'XGBoost(Oversampling)', 0.572, 0.605])
x.add_row([8, 'XGBoost(weight_balancing)', 0.584, 0.651])
x.add_row([9, 'LightGBM(oversampling)', 0.569, 0.529])
x.add_row([10, 'LightGBM', 0.554, 0.655])
x.add_row([11, 'Catboost', 0.543, 0.624])
print(x)

```

Sl No	Classifier Name	Train/Validation Fl_scr	Test Fl_Scr
1	KNN	0.518	0.5
2	Naive Bayes	0.544	0.545
3	SVM(rbf)	0.544	0.564
4	DecisionTree	0.536	0.544
5	Logistic Regression	0.561	0.569
6	Random Forest	0.587	0.611
7	XGBoost(Oversampling)	0.572	0.605
8	XGBoost(weight_balancing)	0.584	0.651
9	LightGBM(oversampling)	0.569	0.529
10	LightGBM	0.554	0.655
11	Catboost	0.543	0.624

By trying with several above models we found that XGboost(weight\_balancing) and LightGBM model gave the best performance.