Score Evaluation

Score Evaluation Evaluation Report

index	baseline	baseline_pod	baseline_nv
Relative Likelihood	1.0	0.0	0.0
AIC	51980.2	52077.1	52511.8
Hosmer-Lemeshow	Well Ajusted	Well Ajusted	Well Ajusted
Wald Test	Informative Variable	Informative Variable	Informative Variable
Power Odds	4.61	4.29	2.84
AUC	0.394	0.3997	0.417
AUC Variance	0.0	0.0	0.0
Gini	0.2119	0.2006	0.1659
Gini CI Lower	0.2034	0.1917	0.1561
Gini CI Upper	0.2204	0.2094	0.1758
Log-Likelihood	-31011.2	-30923.8	-30173.9
BIC	52048.8	52145.8	52580.4

baseline

SCORE | BASELINE

MAIN DATAFRAME

index	score scr	score pod	score nv	restricoes
2	271.43	0.1482	171	3
13	330.25	0.1443	189	1
35	254.22	0.0952	334	0
37	359.27	0.2423	413	0
40	291.76	0.1109	282	1
48	690.15	0.577	328	1
68	330.25	0.2815	199	0
72	311.66	0.1195	146	8
74	295.81	0.0834	266	4
75	274.19	0.1321	284	2

index	idade	tipo_cliente	uf_loja_cliente	cidade_loja_cliente
2	40	novo	0	0
13	31	novo	1	0
35	22	novo	1	0
37	33	novo	0	0
40	34	novo	1	1
48	42	novo	1	0
68	48	novo	0	0
72	44	novo	0	0
74	42	novo	0	0
75	36	novo	1	1

index	over	data	split	_rating_
2	1	2024-01-01 16:48:58	train	F2
13	0	2024-01-02 08:00:22	train	F2
35	0	2024-01-02 08:15:17	train	F1
37	0	2024-01-02 08:16:03	train	E3
40	1	2024-01-02 08:27:43	test	F2
48	0	2024-01-02 08:43:01	train	A3
68	0	2024-01-02 08:37:15	test	D2
72	0	2024-01-02 08:37:14	test	G1
74	0	2024-01-02 08:50:18	train	G1
75	1	2024-01-02 09:00:32	train	F2

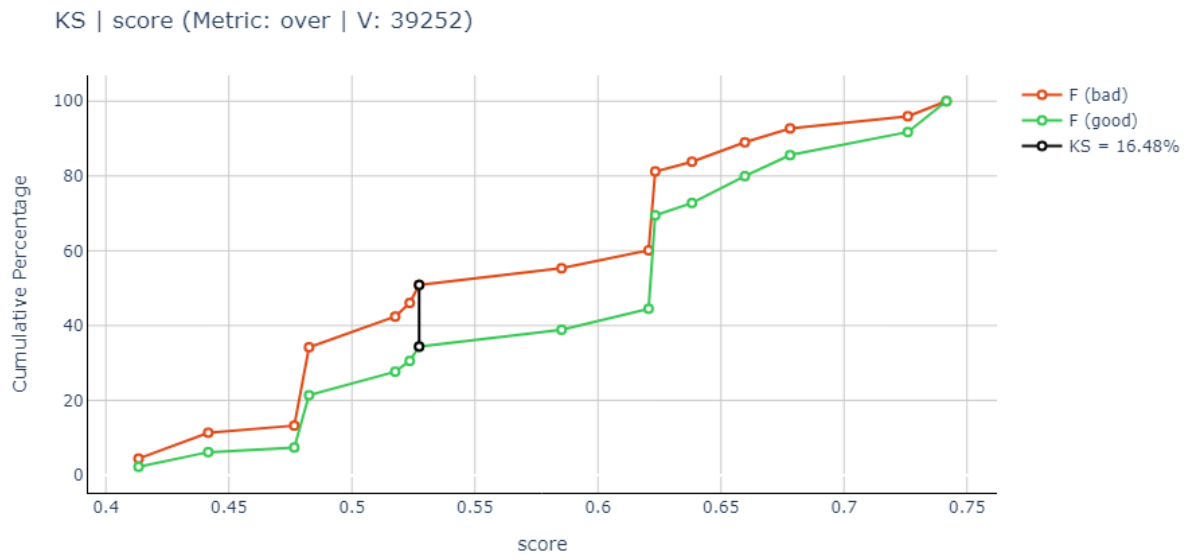
Score Comparison Evaluation Report

index	rating_	score
2	F	0.482571
13	F	0.482571
35	F	0.441597
37	E	0.523506
40	F	0.482571
48	A	0.725964
68	D	0.585227
72	G	0.527327
74	G	0.527327
75	F	0.482571

Score Comparison Evaluation Report

KOLMOGOROV SMIRNOV

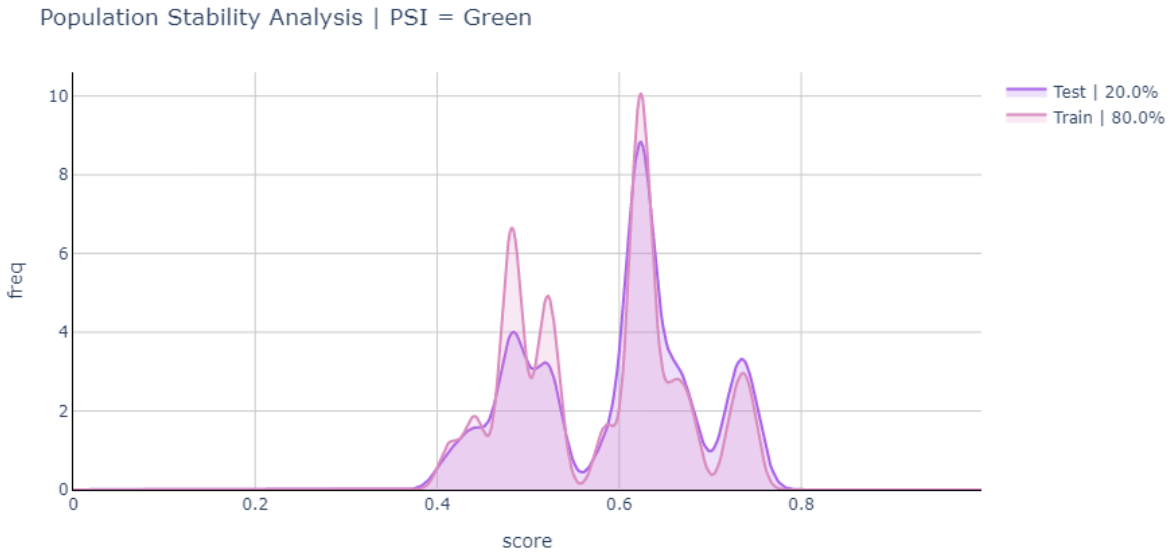
index	KS	Credit Score	Behavioral Score
score	16.481	Low	Low
score scr	16.152	Low	Low
score pod	15.188	Low	Low
score nv	11.207	Low	Low



POPULATION STABILITY INDEX

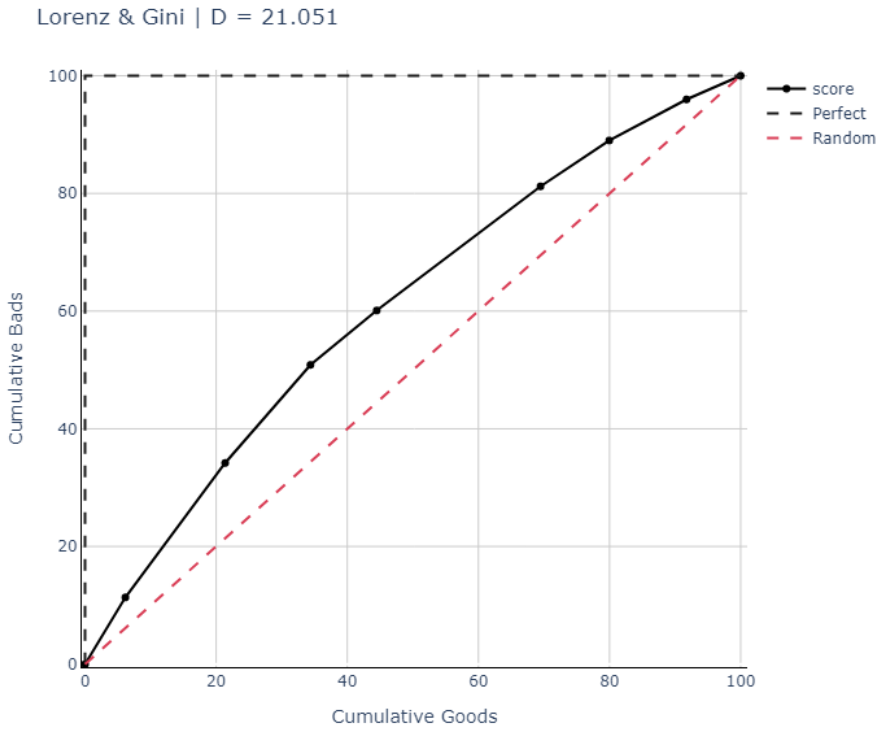
index	PSI	ANDERSON (2022)
score scr	0.0361	Green
score pod	0.013	Green
score nv	0.0036	Green
score	0.0366	Green

Score Comparison Evaluation Report



GINI LORENZ COEFFICIENT AND VARIABILITY


```
{'AUC': 0.606,
 'Gini': 0.2119,
 'Gini CI Lower': 0.2034,
 'Gini CI Upper': 0.2204,
 'N_B': 16373,
 'N_G': 22879,
 'Var (Bamber)': 0.0,
 'Var (Engelmann)': 0.0,
 'Var (Van Dantzig)': 0.0001}
```

Score Comparison Evaluation Report

INFORMATION VALUE

index	IV	SIDDIQI (2006)	THOMAS (2002)	ANDERSON (2022)
score pod	0.444725	Strong	Strong	Strong
score scr	0.204349	Moderate	Moderate	Moderate
score nv	0.171168	Moderate	Moderate	Moderate
score	0.145171	Moderate	Moderate	Moderate

HOSMER LEMESHOW


```
{'HL': 0.0,
 'conclusion': 'Well Ajusted',
 'degrees of freedom': 8,
 'p value': 1.0,
 'reject null': False}
```


DEVIANCE ODDS

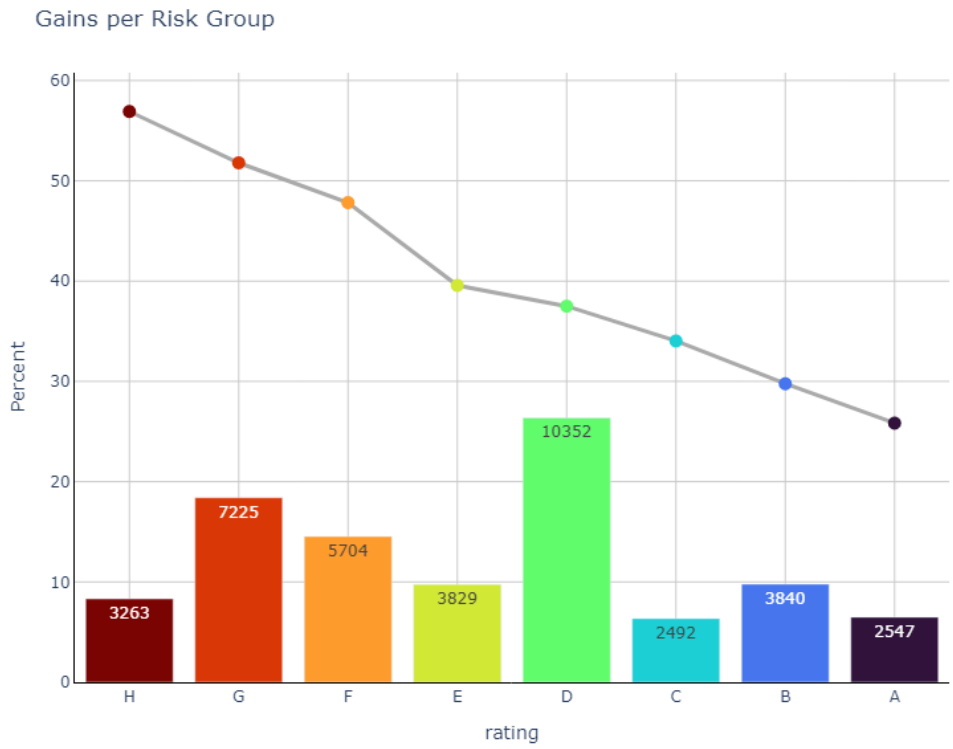

```
{'accuracy': 100.0,
 'conclusion': '<!> The model has weak predictive power, indicating limited '
               'ability to rank or discriminate between outcomes. It may need '
               'retraining or feature engineering. <o> The model is '
               'well-calibrated, with high naïve accuracy suggesting predicted '
               'probabilities align closely with observed outcomes.',
 'power': 4.61}
```

optimized

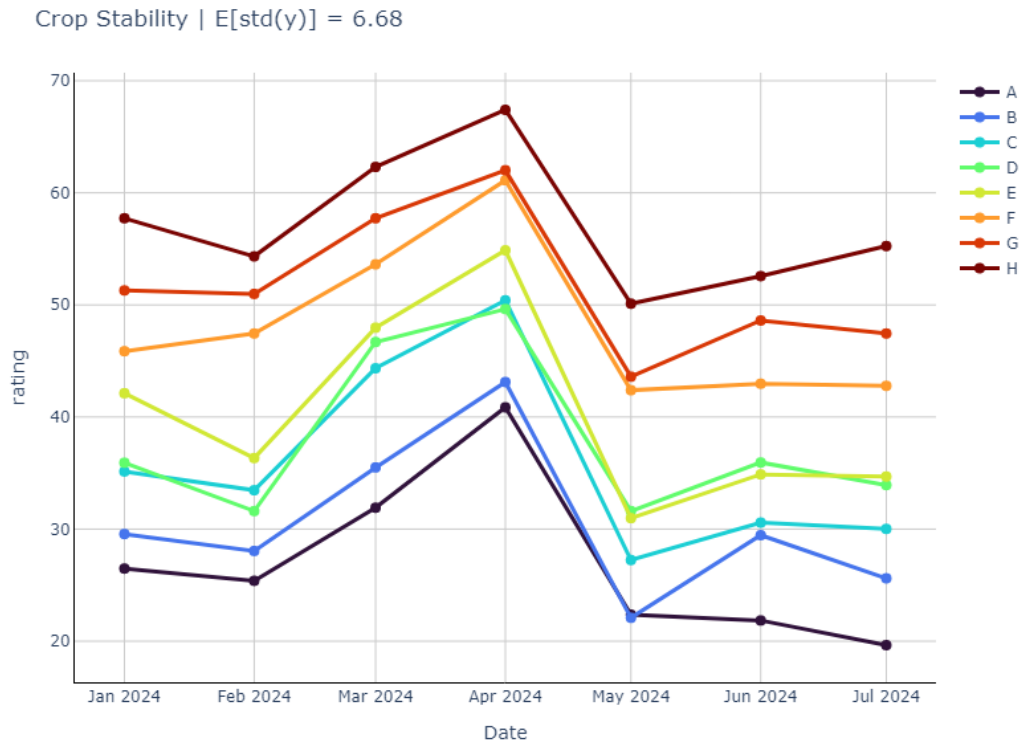
baseline

RATING | OPTIMIZED

GAINS PER RISK GROUP

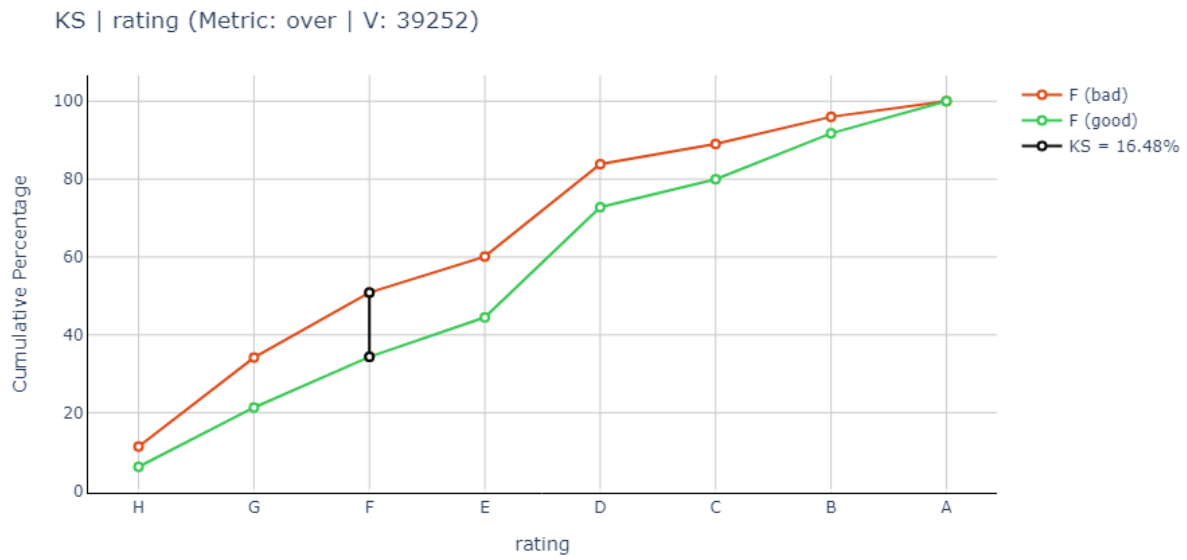


STABILITY IN TIME



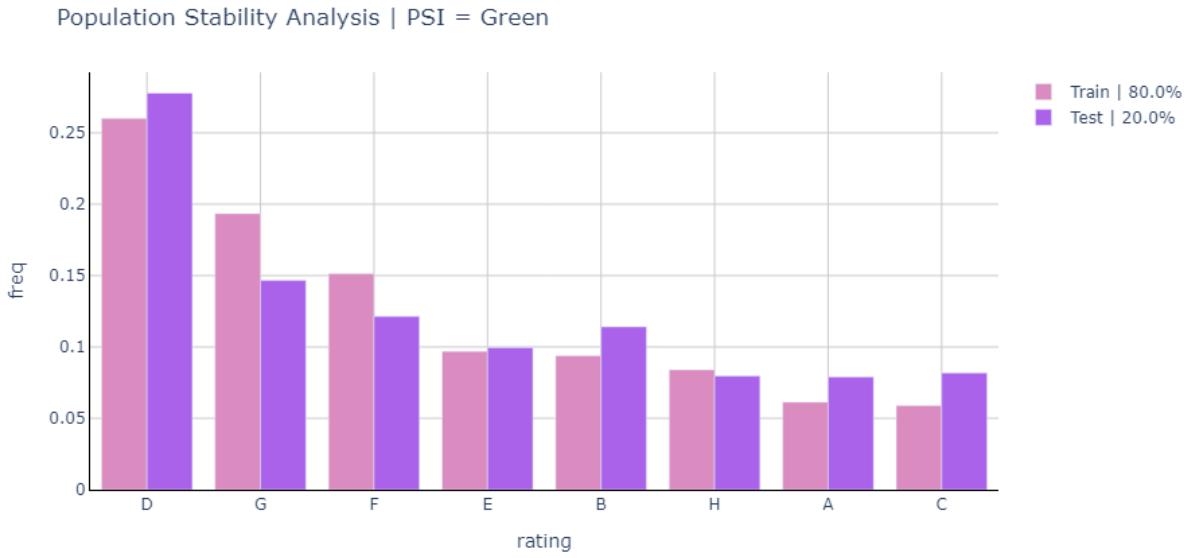
KOLMOGOROV SMIRNOV

index	KS	Credit Score	Behavioral Score
rating	16.481	Low	Low
score scr	16.152	Low	Low
score pod	15.188	Low	Low
score nv	11.207	Low	Low



POPULATION STABILITY INDEX

index	PSI	ANDERSON (2022)
score scr	0.0361	Green
score pod	0.013	Green
score nv	0.0036	Green
rating	0.0369	Green


Population Stability Analysis | PSI = Green
Train | 80.0%
Test | 20.0%
freq
0.25
0.2
0.15
0.1
0.05
0
D
G
F
E
B
H
A
C
rating

INFORMATION VALUE

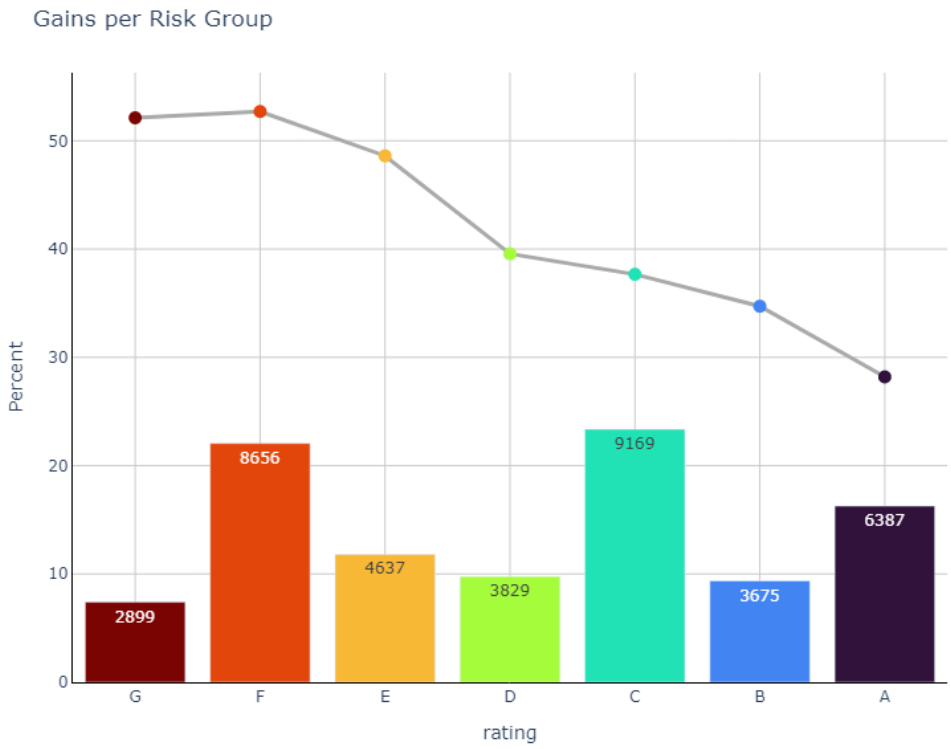
index	IV	SIDDIQI (2006)	THOMAS (2002)	ANDERSON (2022)
score pod	0.444725	Strong	Strong	Strong
score scr	0.204349	Moderate	Moderate	Moderate
score nv	0.171168	Moderate	Moderate	Moderate
rating	0.14298	Moderate	Moderate	Moderate

baseline

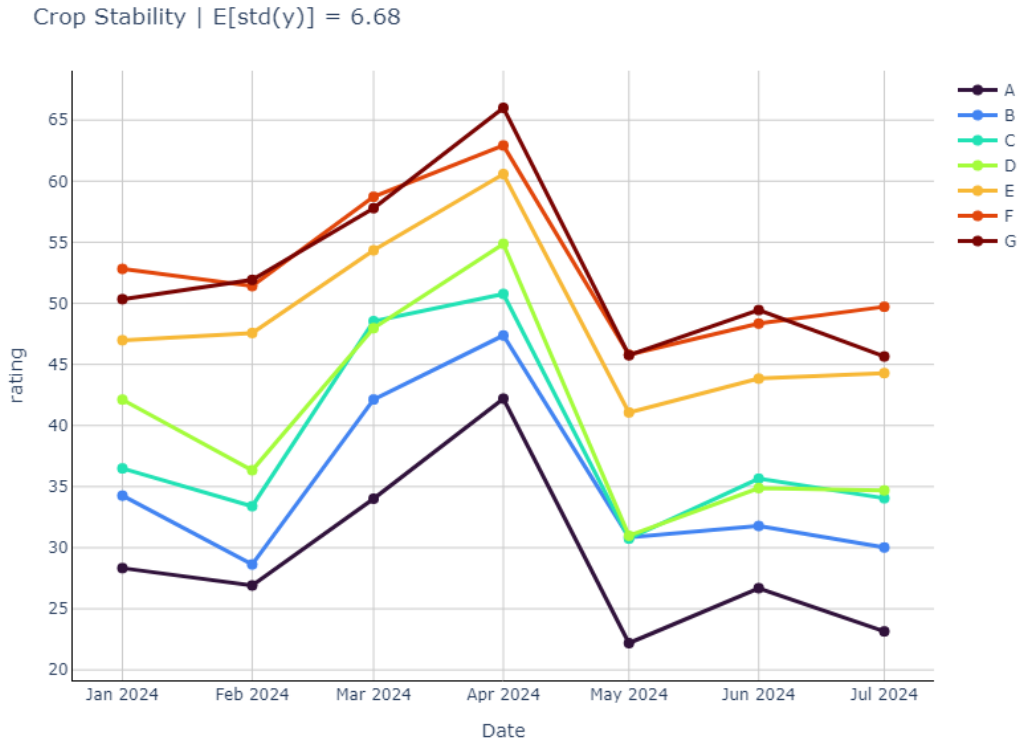
baseline

RATING | BASELINE

GAINS PER RISK GROUP

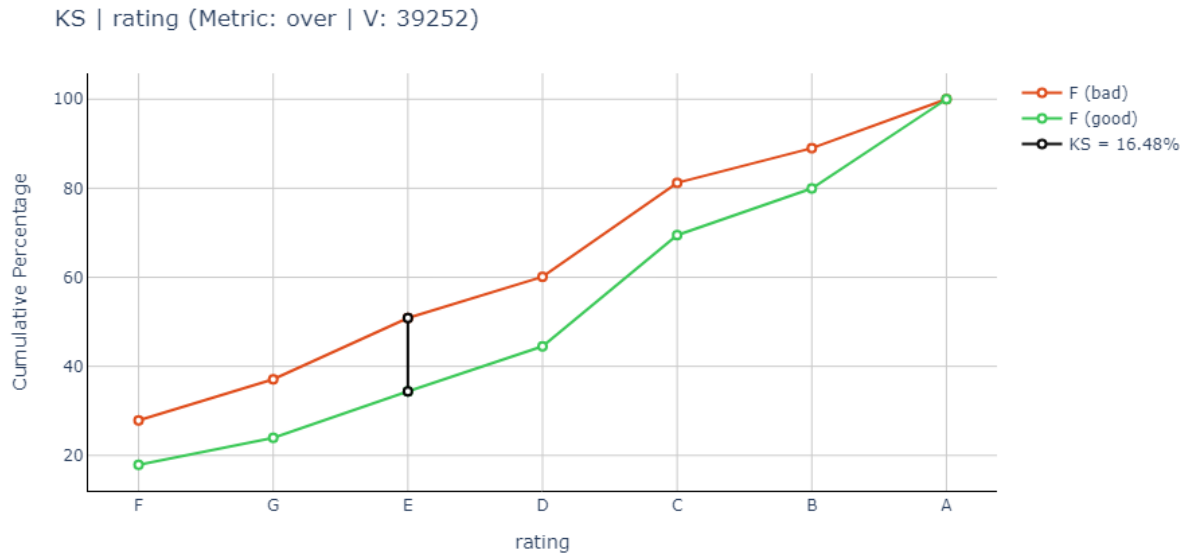


STABILITY IN TIME



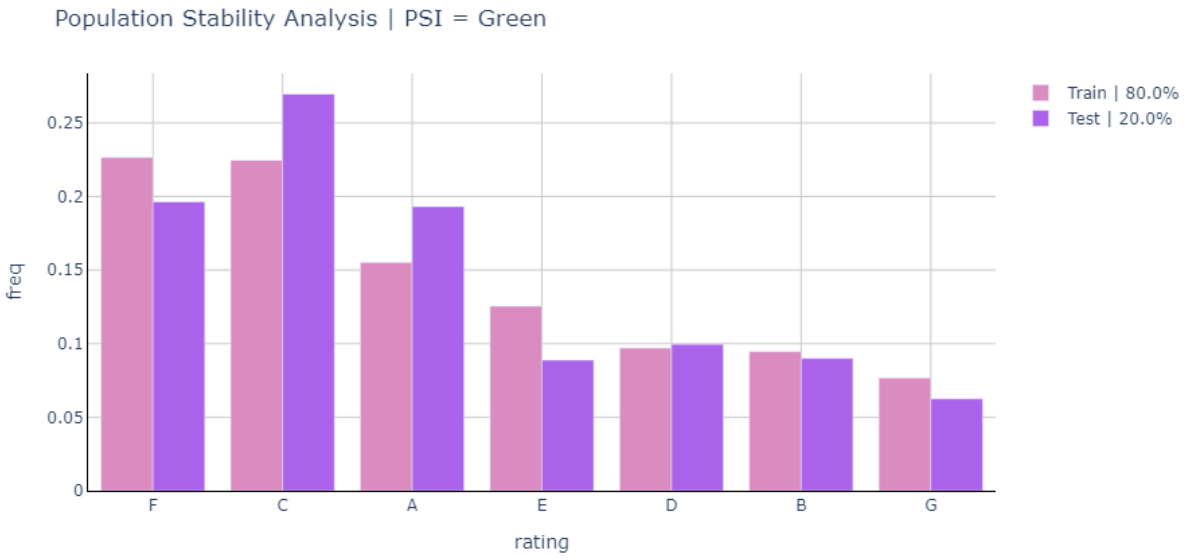
KOLMOGOROV SMIRNOV

index	KS	Credit Score	Behavioral Score
rating	16.481	Low	Low



POPULATION STABILITY INDEX

index	PSI	ANDERSON (2022)
rating	0.0367	Green



INFORMATION VALUE

index	IV	SIDDIQI (2006)	THOMAS (2002)	ANDERSON (2022)
rating	0.136348	Moderate	Moderate	Moderate

baseline_pod

SCORE | BASELINE_POD

MAIN DATAFRAME

index	score scr	score pod	score nv	restricoes
2	271.43	148.2	171	3
13	330.25	144.3	189	1
35	254.22	95.2	334	0
37	359.27	242.3	413	0
40	291.76	110.9	282	1
48	690.15	577	328	1
68	330.25	281.5	199	0
72	311.66	119.5	146	8
74	295.81	83.4	266	4
75	274.19	132.1	284	2

index	idade	tipo_cliente	uf_loja_cliente	cidade_loja_cliente
2	40	novo	0	0
13	31	novo	1	0
35	22	novo	1	0
37	33	novo	0	0
40	34	novo	1	1
48	42	novo	1	0
68	48	novo	0	0
72	44	novo	0	0
74	42	novo	0	0
75	36	novo	1	1

index	over	data	split	_rating_
2	1	2024-01-01 16:48:58	train	E4
13	0	2024-01-02 08:00:22	train	F1
35	0	2024-01-02 08:15:17	train	F1
37	0	2024-01-02 08:16:03	train	F1
40	1	2024-01-02 08:27:43	test	F1
48	0	2024-01-02 08:43:01	train	B1
68	0	2024-01-02 08:37:15	test	D2
72	0	2024-01-02 08:37:14	test	E4
74	0	2024-01-02 08:50:18	train	E4
75	1	2024-01-02 09:00:32	train	F1

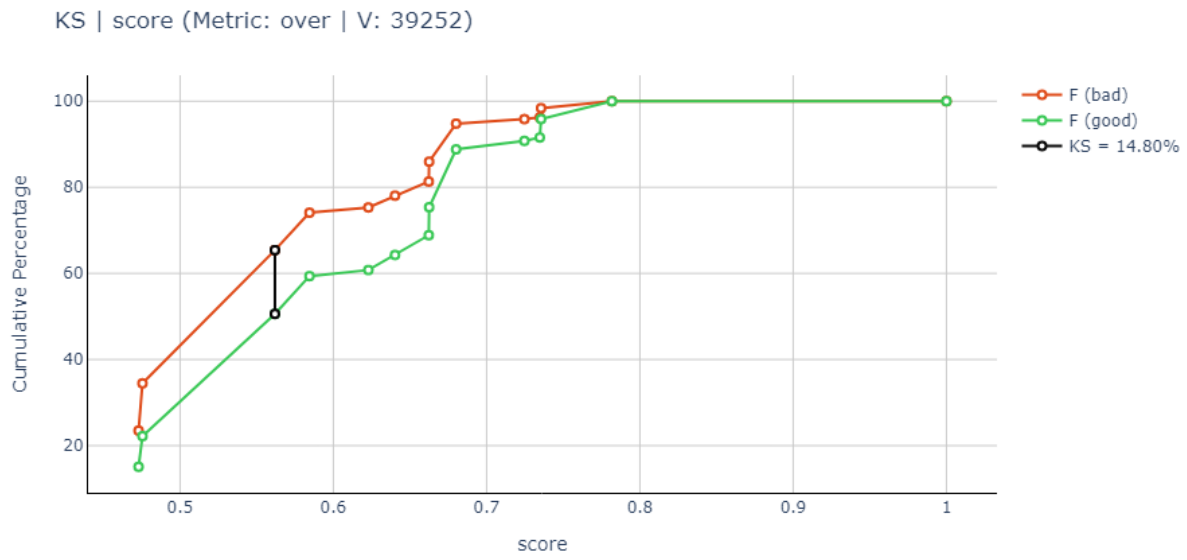
Score Comparison Evaluation Report

index	rating_	score
2	E	0.561878
13	F	0.472927
35	F	0.472927
37	F	0.472927
40	F	0.472927
48	B	0.724638
68	D	0.662506
72	E	0.561878
74	E	0.561878
75	F	0.472927

Score Comparison Evaluation Report

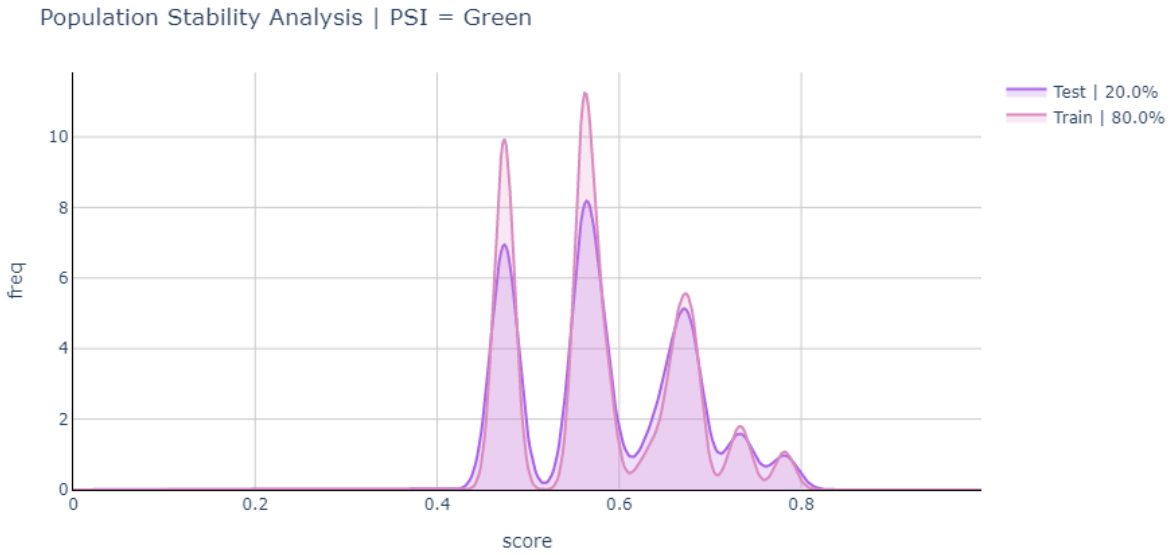
KOLMOGOROV SMIRNOV

index	KS	Credit Score	Behavioral Score
score scr	16.152	Low	Low
score pod	15.188	Low	Low
score	14.803	Low	Low
score nv	11.207	Low	Low



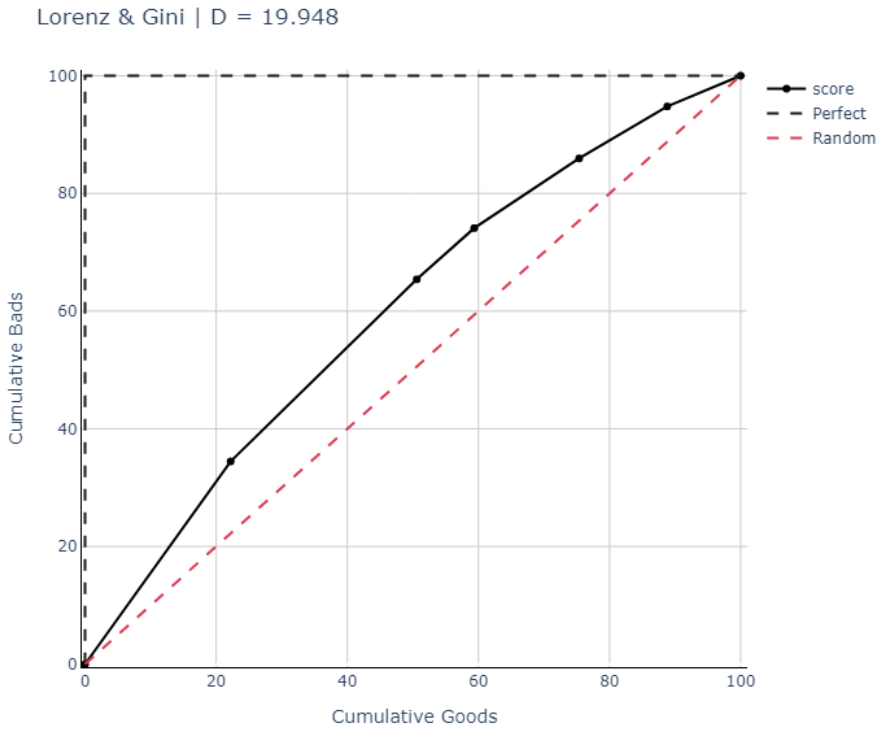
POPULATION STABILITY INDEX

index	PSI	ANDERSON (2022)
score scr	0.0361	Green
score pod	0.013	Green
score nv	0.0036	Green
score	0.0086	Green



GINI LORENZ COEFFICIENT AND VARIABILITY


```
{'AUC': 0.6003,
 'Gini': 0.2006,
 'Gini CI Lower': 0.1917,
 'Gini CI Upper': 0.2094,
 'N_B': 16373,
 'N_G': 22879,
 'Var (Bamber)': 0.0,
 'Var (Engelmann)': 0.0,
 'Var (Van Dantzig)': 0.0001}
```

Score Comparison Evaluation Report

INFORMATION VALUE

index	IV	SIDDIQI (2006)	THOMAS (2002)	ANDERSON (2022)
score pod	0.444725	Strong	Strong	Strong
score scr	0.204349	Moderate	Moderate	Moderate
score nv	0.171168	Moderate	Moderate	Moderate
score	0.135406	Moderate	Moderate	Moderate

HOSMER LEMESHOW


```
{'HL': 0.0,
 'conclusion': 'Well Ajusted',
 'degrees of freedom': 8,
 'p value': 1.0,
 'reject null': False}
```


DEVIANCE ODDS

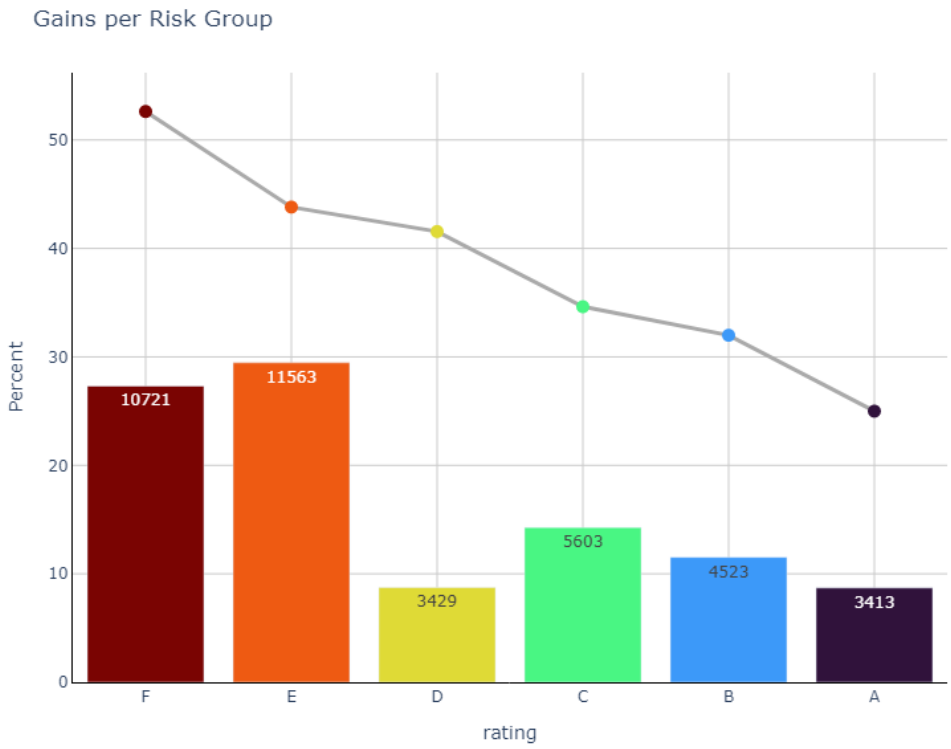

```
{'accuracy': 100.0,
 'conclusion': '<!> The model has weak predictive power, indicating limited '
               'ability to rank or discriminate between outcomes. It may need '
               'retraining or feature engineering. <o> The model is '
               'well-calibrated, with high naïve accuracy suggesting predicted '
               'probabilities align closely with observed outcomes.',
 'power': 4.29}
```

optimized

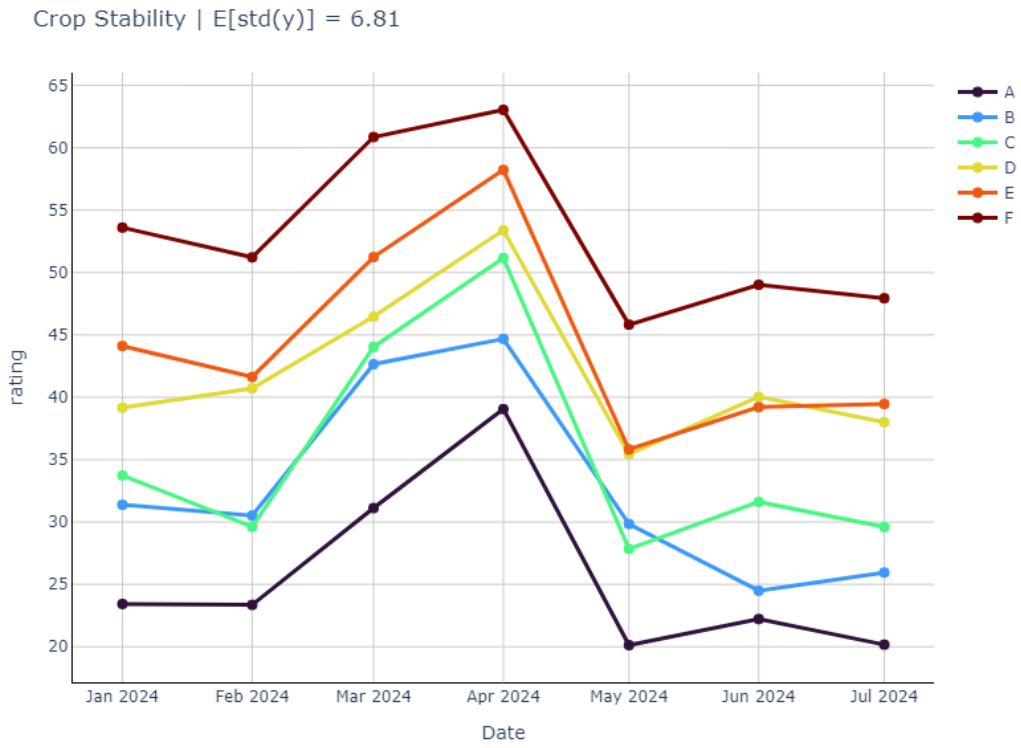
baseline_pod

RATING | OPTIMIZED

GAINS PER RISK GROUP

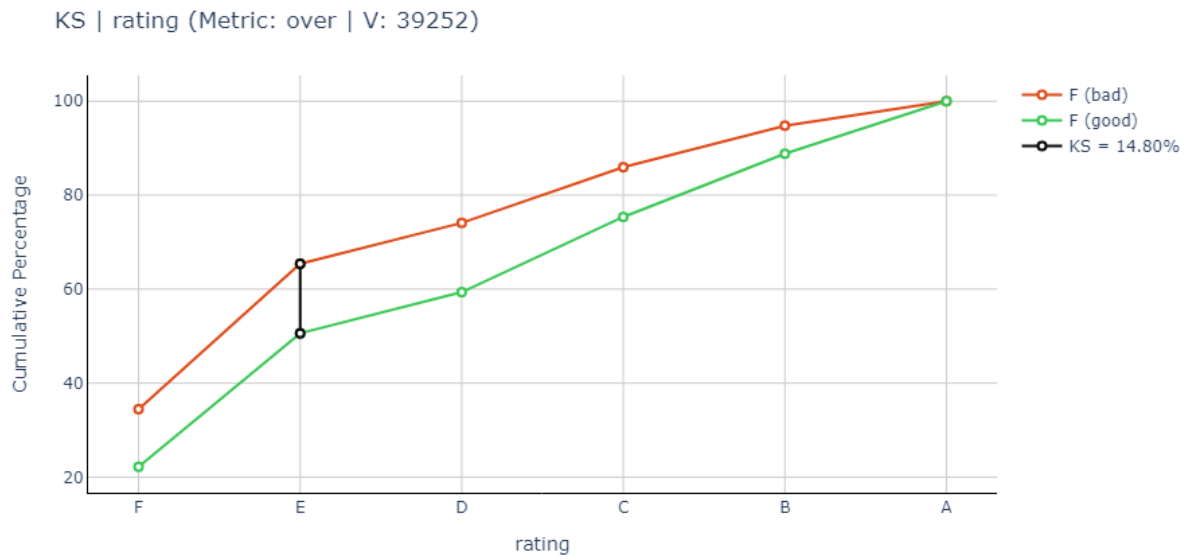


STABILITY IN TIME



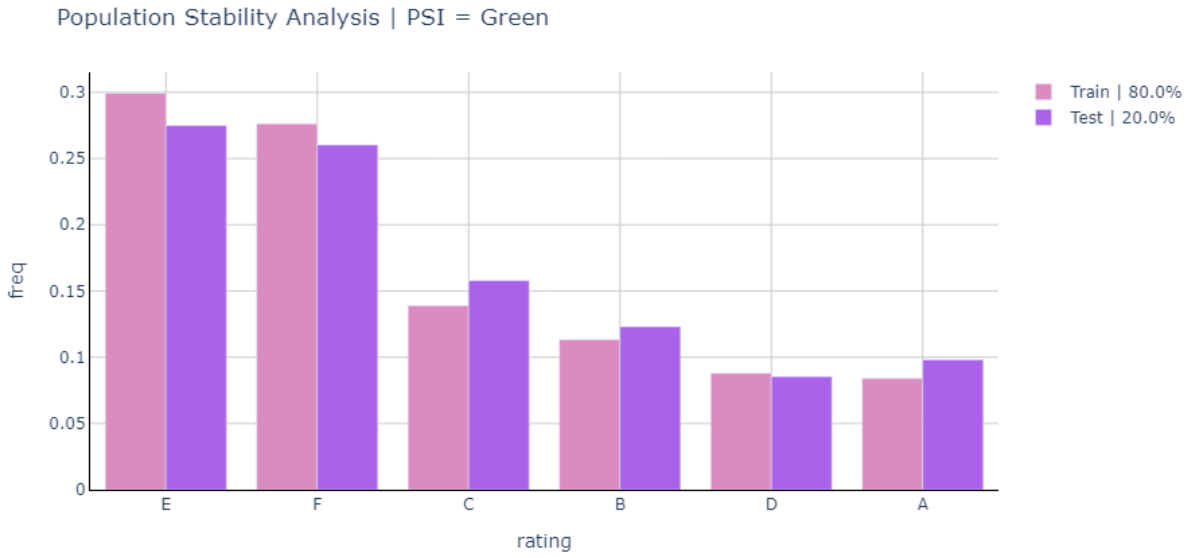
KOLMOGOROV SMIRNOV

index	KS	Credit Score	Behavioral Score
score scr	16.152	Low	Low
score pod	15.188	Low	Low
rating	14.803	Low	Low
score nv	11.207	Low	Low



POPULATION STABILITY INDEX

index	PSI	ANDERSON (2022)
score scr	0.0361	Green
score pod	0.013	Green
score nv	0.0036	Green
rating	0.0086	Green


Population Stability Analysis | PSI = Green
freq
0.3
0.25
0.2
0.15
0.1
0.05
0
E
F
C
B
D
A
rating
Train | 80.0%
Test | 20.0%

INFORMATION VALUE

index	IV	SIDDIQI (2006)	THOMAS (2002)	ANDERSON (2022)
score pod	0.444725	Strong	Strong	Strong
score scr	0.204349	Moderate	Moderate	Moderate
score nv	0.171168	Moderate	Moderate	Moderate
rating	0.133657	Moderate	Moderate	Moderate

baseline_nv

SCORE | BASELINE_NV

MAIN DATAFRAME

index	score scr	score pod	score nv	restricoes
2	271.43	0.1482	171	3
13	330.25	0.1443	189	1
35	254.22	0.0952	334	0
37	359.27	0.2423	413	0
40	291.76	0.1109	282	1
48	690.15	0.577	328	1
68	330.25	0.2815	199	0
72	311.66	0.1195	146	8
74	295.81	0.0834	266	4
75	274.19	0.1321	284	2

index	idade	tipo_cliente	uf_loja_cliente	cidade_loja_cliente
2	40	novo	0	0
13	31	novo	1	0
35	22	novo	1	0
37	33	novo	0	0
40	34	novo	1	1
48	42	novo	1	0
68	48	novo	0	0
72	44	novo	0	0
74	42	novo	0	0
75	36	novo	1	1

index	over	data	split	_rating_
2	1	2024-01-01 16:48:58	train	E4
13	0	2024-01-02 08:00:22	train	F1
35	0	2024-01-02 08:15:17	train	F2
37	0	2024-01-02 08:16:03	train	C1
40	1	2024-01-02 08:27:43	test	F2
48	0	2024-01-02 08:43:01	train	F2
68	0	2024-01-02 08:37:15	test	E4
72	0	2024-01-02 08:37:14	test	E4
74	0	2024-01-02 08:50:18	train	E4
75	1	2024-01-02 09:00:32	train	F2

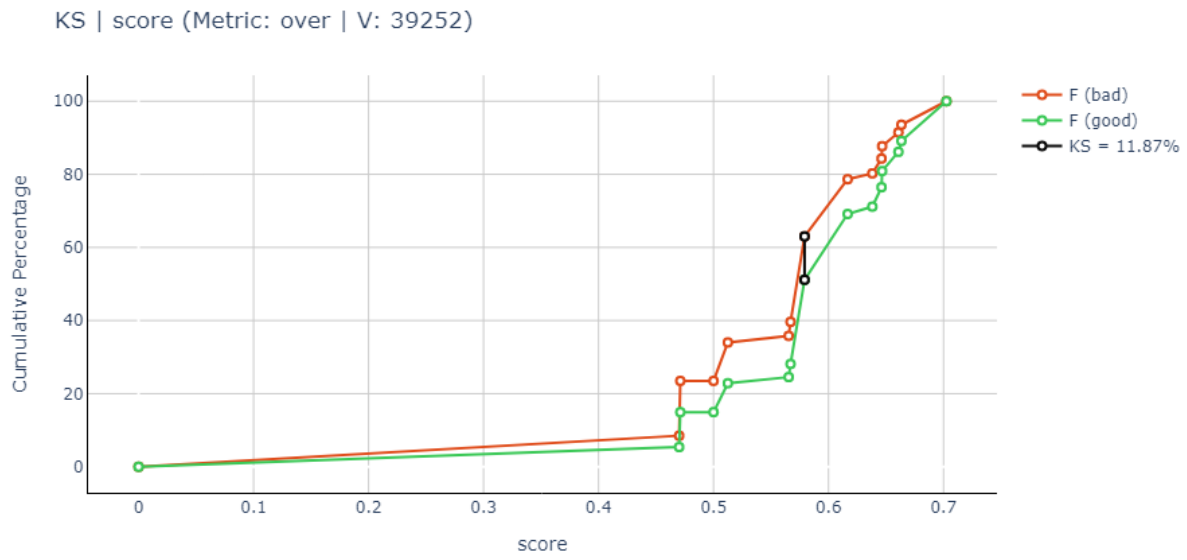
Score Comparison Evaluation Report

index	rating_	score
2	E	0.579173
13	F	0.471121
35	F	0.512465
37	C	0.616629
40	F	0.512465
48	F	0.512465
68	E	0.579173
72	E	0.579173
74	E	0.579173
75	F	0.512465

Score Comparison Evaluation Report

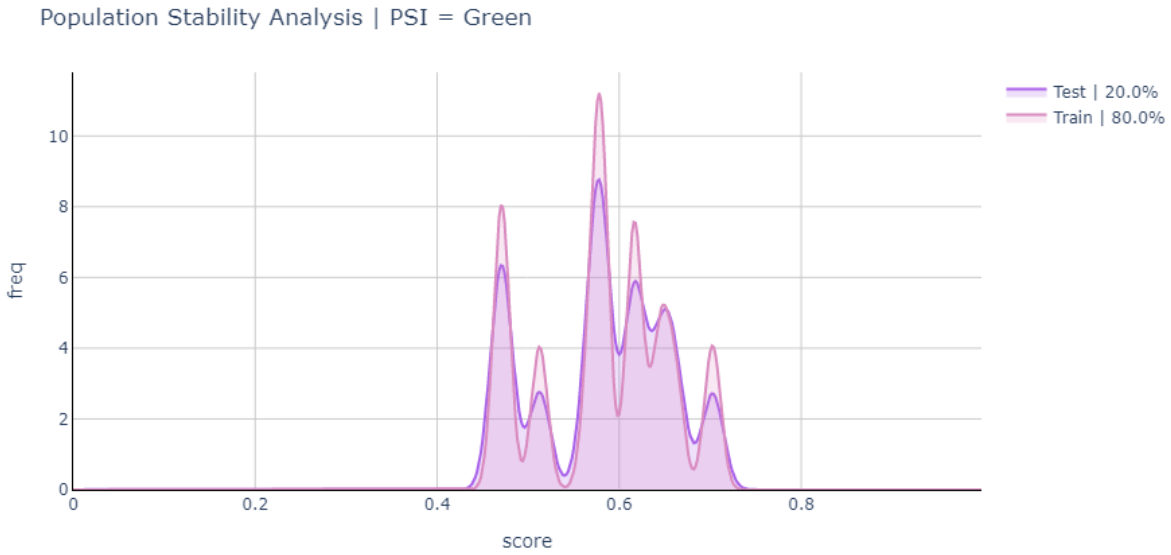
KOLMOGOROV SMIRNOV

index	KS	Credit Score	Behavioral Score
score scr	16.152	Low	Low
score pod	15.188	Low	Low
score	11.866	Low	Low
score nv	11.207	Low	Low



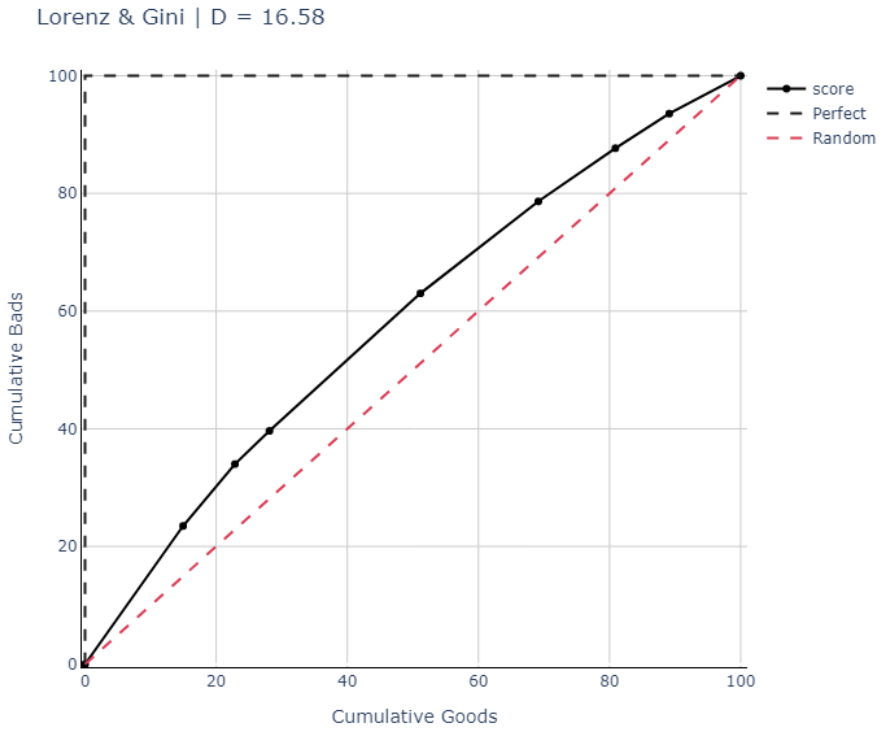
POPULATION STABILITY INDEX

index	PSI	ANDERSON (2022)
score scr	0.0361	Green
score pod	0.013	Green
score nv	0.0036	Green
score	0.0065	Green



GINI LORENZ COEFFICIENT AND VARIABILITY


```
{'AUC': 0.583,
 'Gini': 0.1659,
 'Gini CI Lower': 0.1561,
 'Gini CI Upper': 0.1758,
 'N_B': 16373,
 'N_G': 22879,
 'Var (Bamber)': 0.0,
 'Var (Engelmann)': 0.0,
 'Var (Van Dantzig)': 0.0001}
```

Score Comparison Evaluation Report

INFORMATION VALUE

index	IV	SIDDIQI (2006)	THOMAS (2002)	ANDERSON (2022)
score pod	0.444725	Strong	Strong	Strong
score scr	0.204349	Moderate	Moderate	Moderate
score nv	0.171168	Moderate	Moderate	Moderate
score	0.087978	Weak	Weak	Weak

HOSMER LEMESHOW


```
{'HL': 0.0,
 'conclusion': 'Well Ajusted',
 'degrees of freedom': 8,
 'p value': 1.0,
 'reject null': False}
```


DEVIANCE ODDS

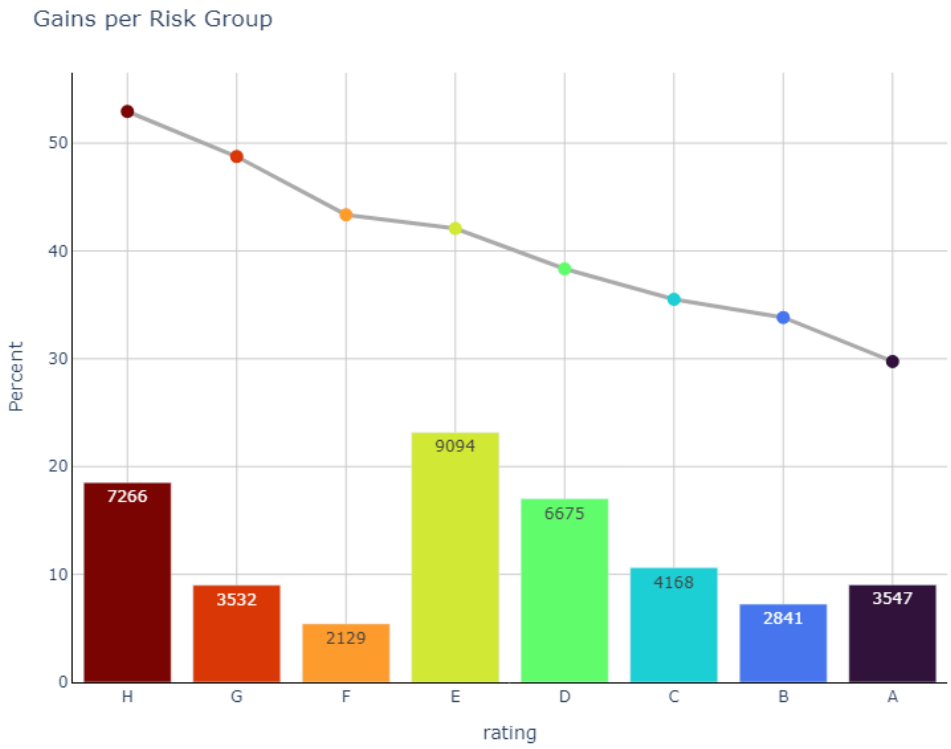

```
{'accuracy': 100.0,
 'conclusion': '<!> The model has weak predictive power, indicating limited '
               'ability to rank or discriminate between outcomes. It may need '
               'retraining or feature engineering. <o> The model is '
               'well-calibrated, with high naïve accuracy suggesting predicted '
               'probabilities align closely with observed outcomes.',
 'power': 2.84}
```

optimized

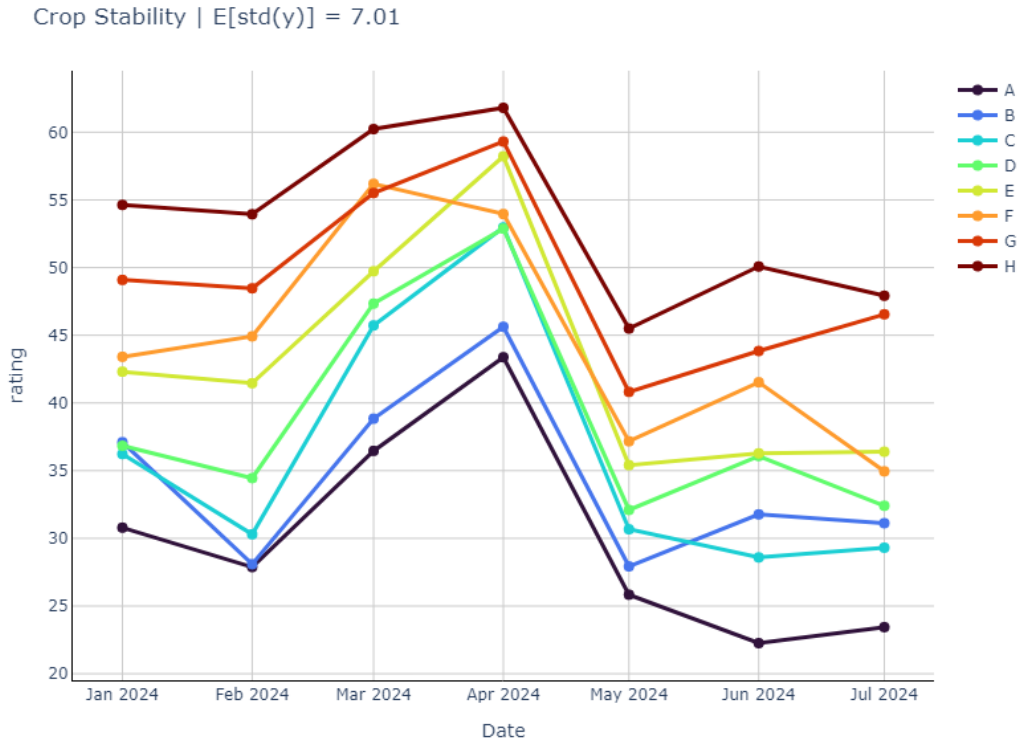
baseline_nv

RATING | OPTIMIZED

GAINS PER RISK GROUP

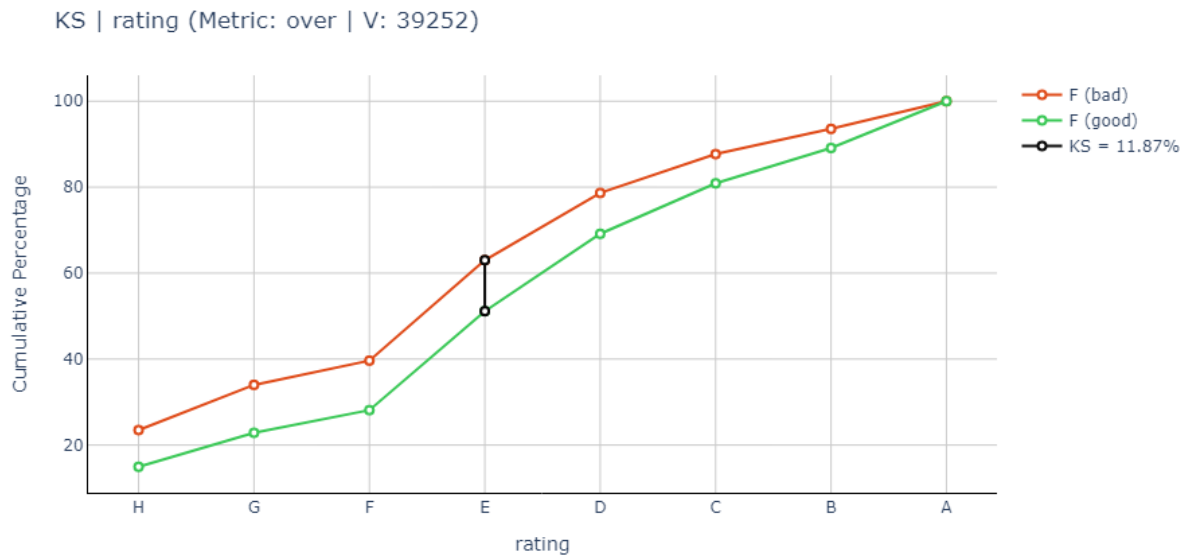


STABILITY IN TIME



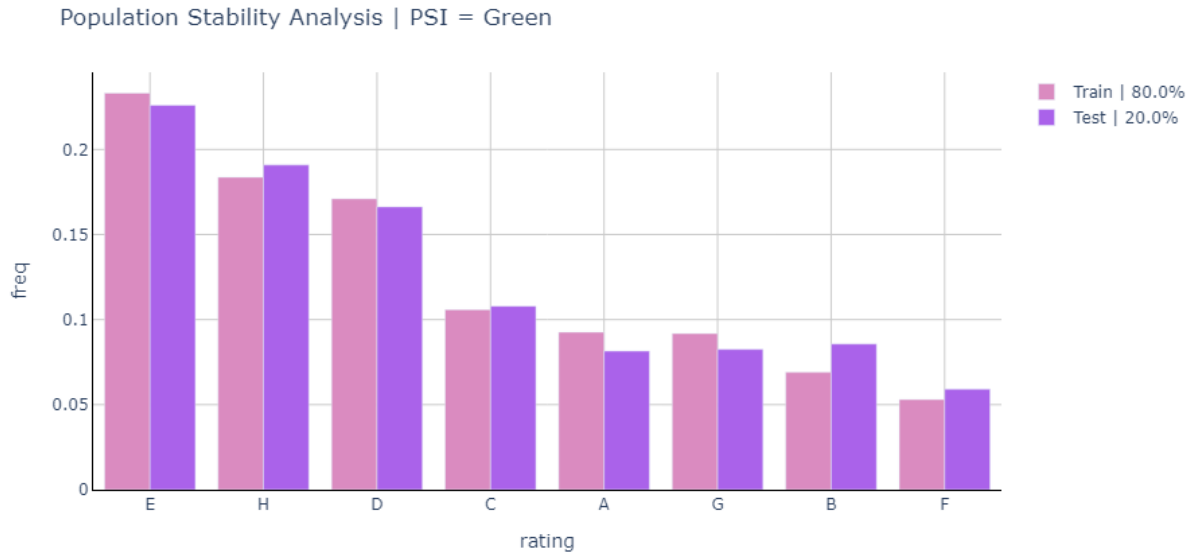
KOLMOGOROV SMIRNOV

index	KS	Credit Score	Behavioral Score
score scr	16.152	Low	Low
score pod	15.188	Low	Low
rating	11.866	Low	Low
score nv	11.207	Low	Low



POPULATION STABILITY INDEX

index	PSI	ANDERSON (2022)
score scr	0.0361	Green
score pod	0.013	Green
score nv	0.0036	Green
rating	0.0073	Green


Population Stability Analysis | PSI = Green
Train | 80.0%
Test | 20.0%
freq
0
0.05
0.1
0.15
0.2
E
H
D
C
A
G
B
F
rating

INFORMATION VALUE

index	IV	SIDDIQI (2006)	THOMAS (2002)	ANDERSON (2022)
score pod	0.444725	Strong	Strong	Strong
score scr	0.204349	Moderate	Moderate	Moderate
score nv	0.171168	Moderate	Moderate	Moderate
rating	0.088004	Weak	Weak	Weak