Bank of the Crown

SAP Predictive Analytics Project

TEAM C

Agenda

1. **Scenario 1**

2. **Scenario 2**

3. **Scenario 3**

Introduction

Bank of the Crown is established in the 17th Century. It considered as one of the world's oldest and largest global banks known Current economic and regulatory environments driving the bank towards digital transformation. Banking Dataset and 3 Business Scenarios to be addressed with SAP Predictive Analytics. Banking Dataset consists of eight tables. These tables are:

1. BOC_ACCOUNT
2. BOC_CLIENT
3. BOC_CREDIT_CARD
4. BOC_DISPOSITION
5. BOC_GEODEMO
6. BOC_LOAN
7. BOC_ORDERS
8. BOC_TRANSACTIONS

Scenario 1

Business Goals

- Increase profits by identifying performing loans.
- Reduce risk by avoiding making loans to potential defaulters.

Business Success Criteria

- Percentage of bad loans decreases from 11% to 7%.

Data Science Goals

- Create a classification model that predicts: which current customers might default on a payment if given a loan.

Scenario 1

Main Goal:

- Predict whether a customer will default on a loan or not.

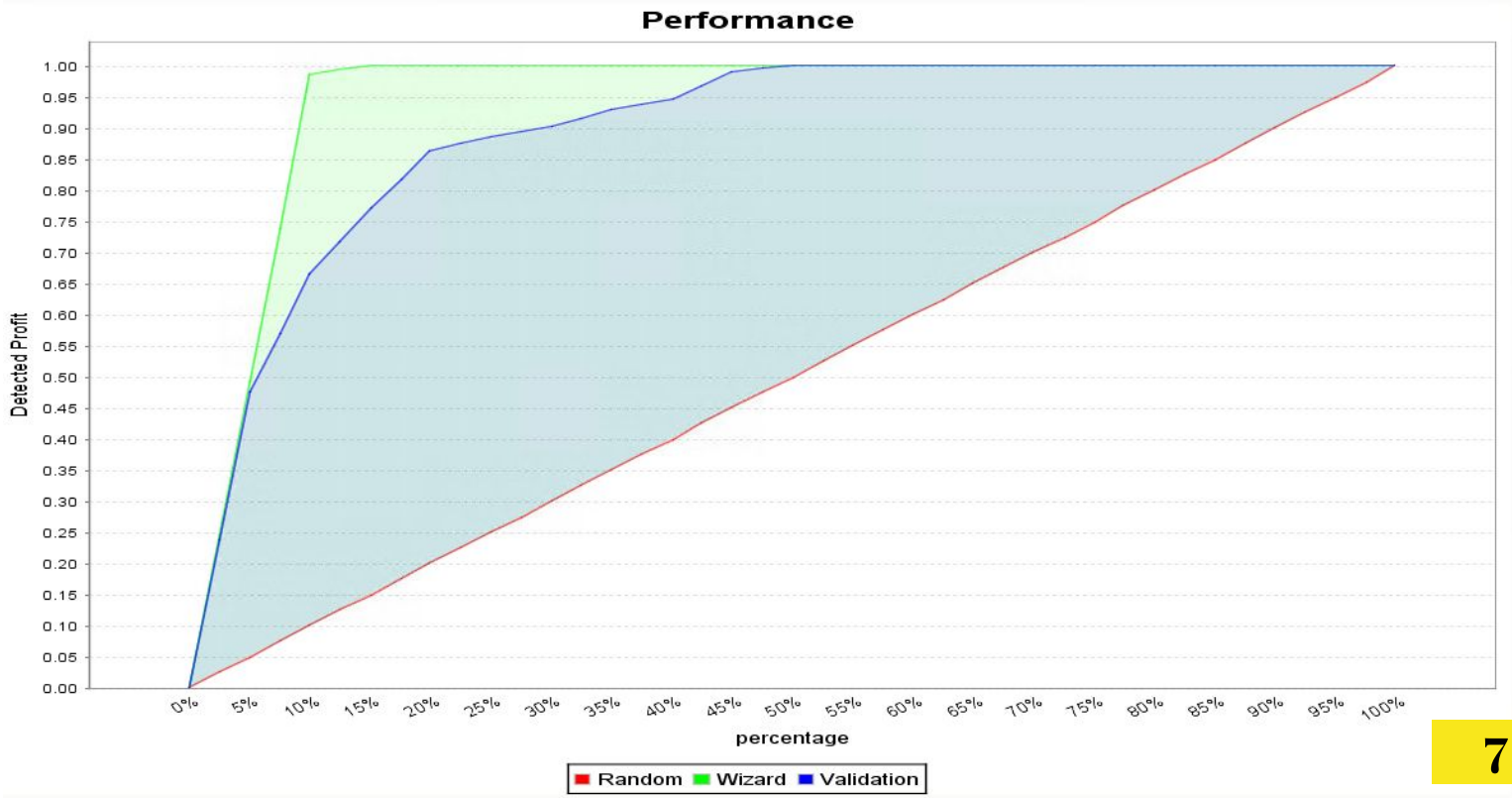
Target:

- LOAN_STATUS

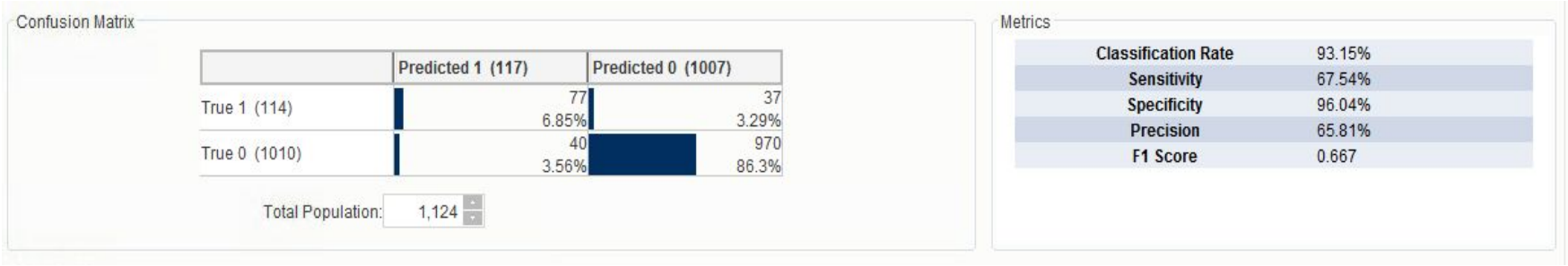
Classification KI & KR

Target	KI	KR	Missing value
TARGET	0.88	0.95	ZERO

Classification : Performance



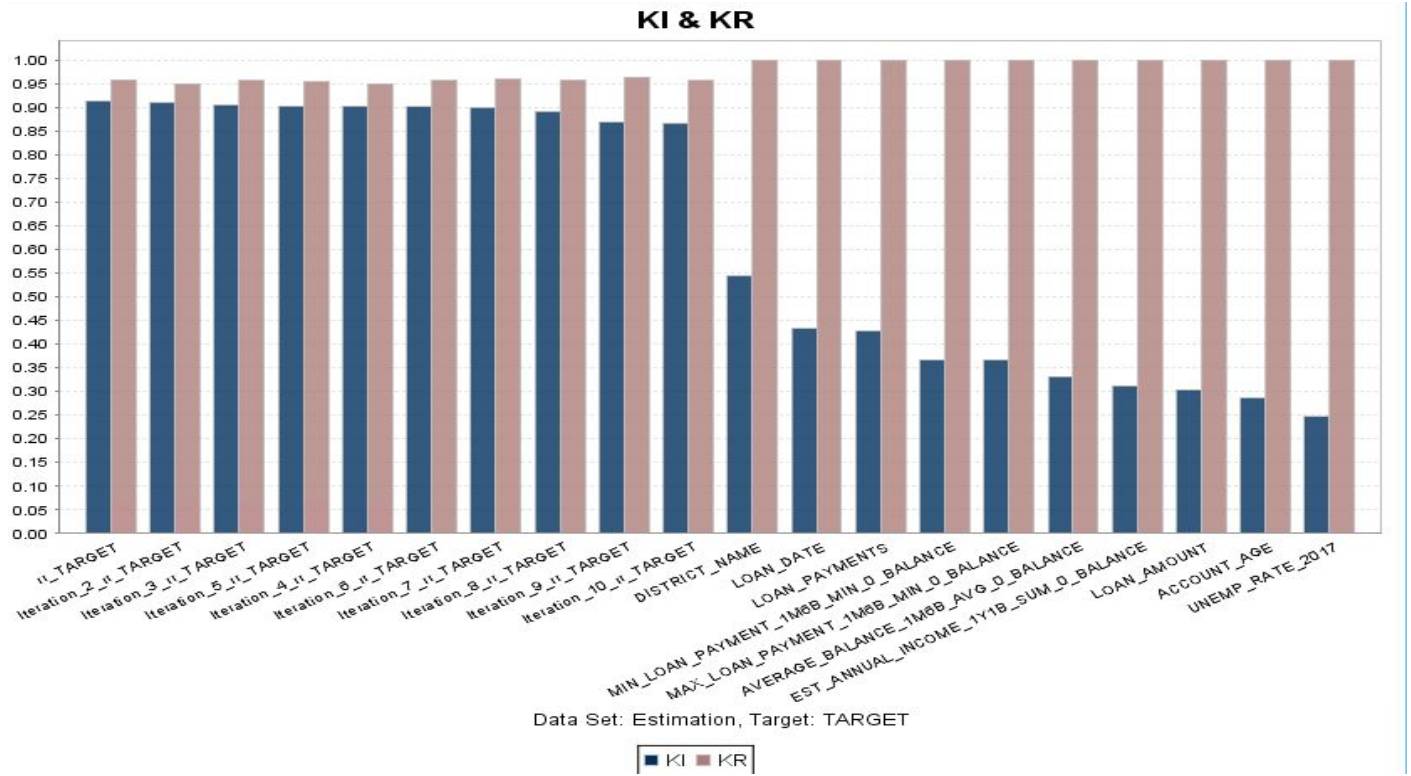
Confusion Matrix



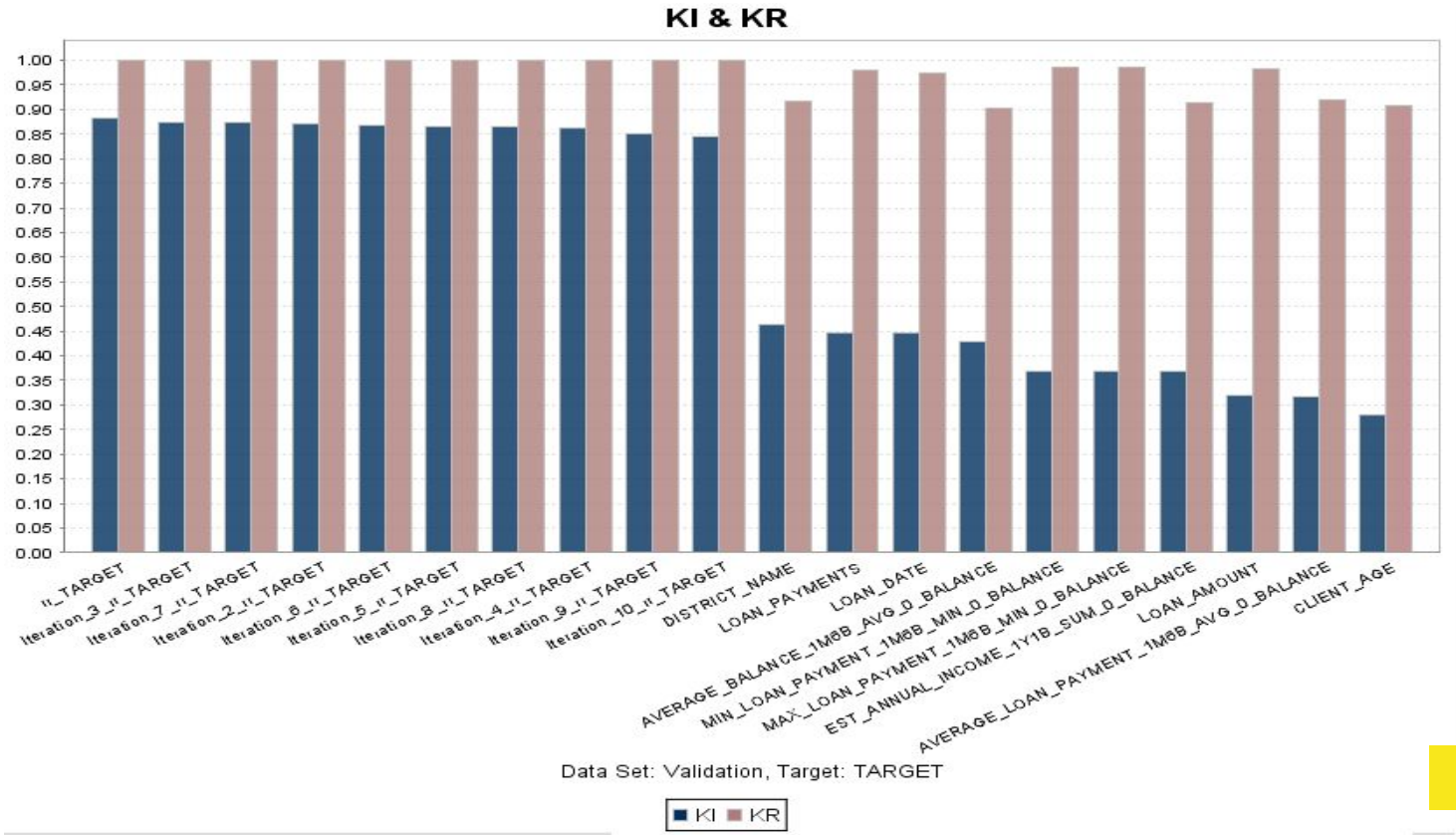
Indicators

Indicator	Estimation	Validation
L1	0.227	0.225
L2	0.282	0.283
LInf	0.949	0.866
ErrorMean	-0.098	-0.08
ErrorStdDev	0.265	0.271
ClassificationRate	0.935	0.932

KI & KR Estimation



KI & KR Validation



Scenario 2

Business Goals

- To establish better customer relationship management strategies.
- Improve existing services and increase customer satisfaction and loyalty.

Data Science Goals

- Create a k-means clustering model that strategically segments the customer base
- There will be between 3 and 8 clusters ($3<k<8$)

Business Success Criteria

- Cross-sales increase by 5%
- Customer click-through rate on promotional offers increase from 5% to 7%

Scenario 2

Main Goal:

- Using SAP Predictive Analytics to support the promotion of credit card usage.
- Credit cards are important for a bank for many reasons.

Target:

Estimated Annual Income

Data Science Success Criteria

The purpose of the model is to provide highly accurate predictions of defaulting on a loan. This can be measure using Predictive Power of the target.

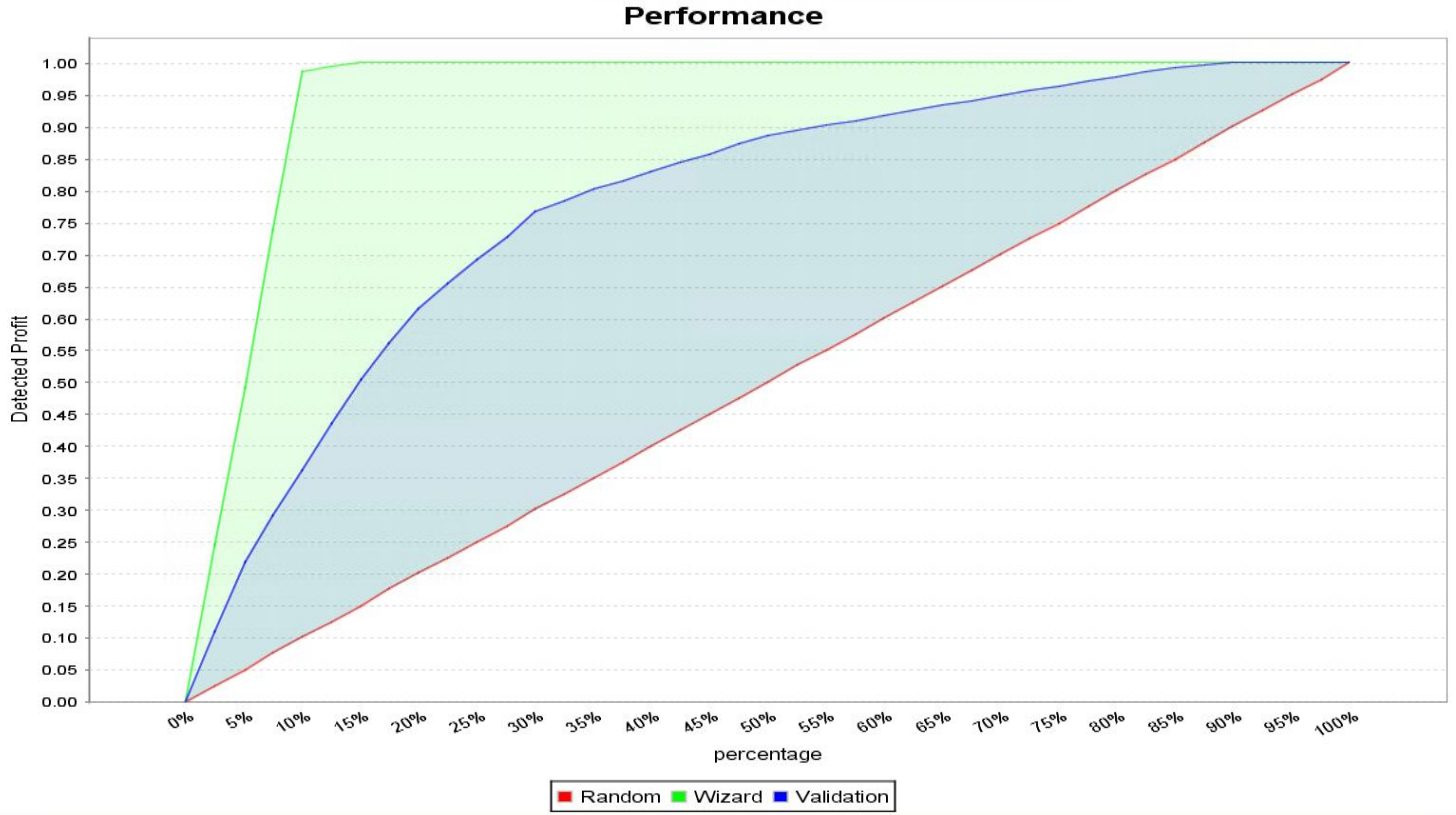
Findings of the model:

Predictive Power (KI)	0.63
Prediction Confidence (KR)	0.95

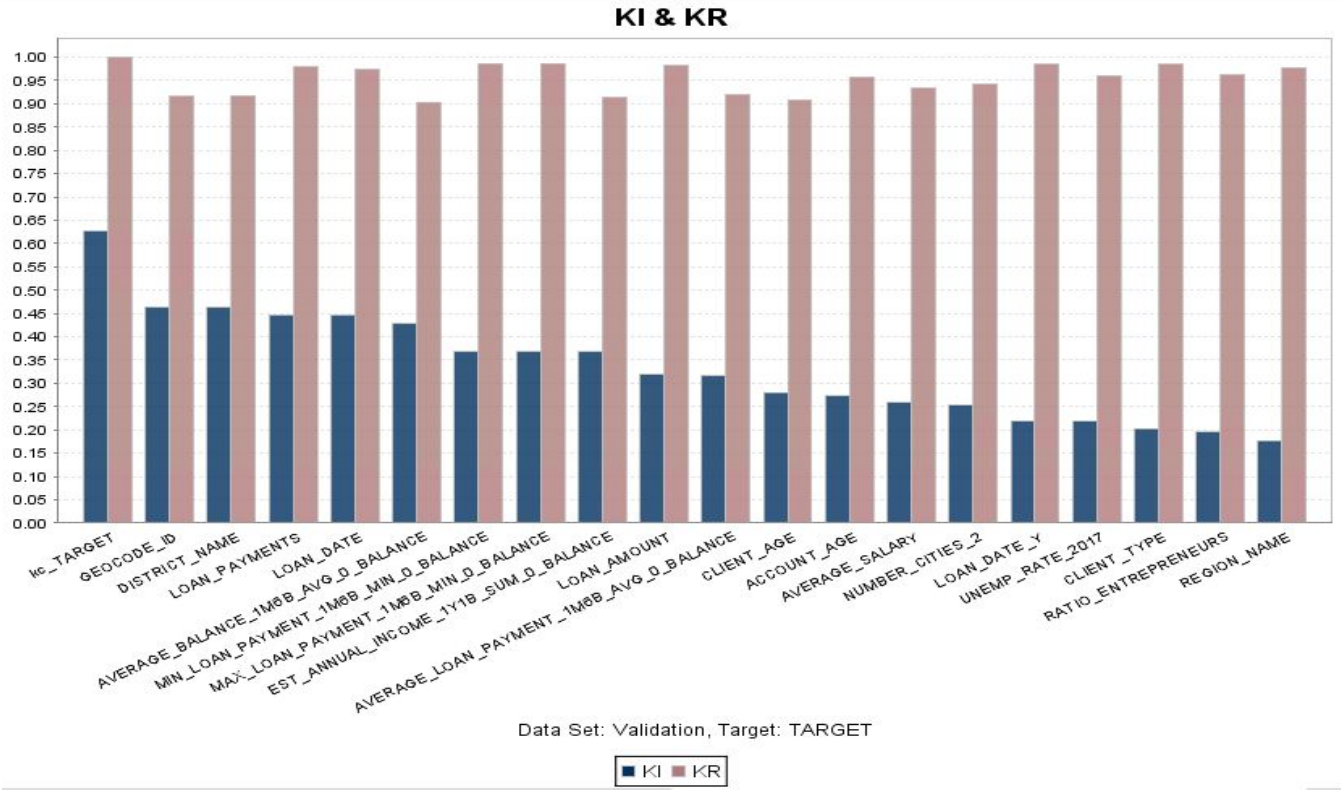
Cluster Metrics

Target	Cluster Variance	KI	KR	Overlap	Unassigned Records
TARGET	0.724	0.620	0.9558	43.58%	0.8%

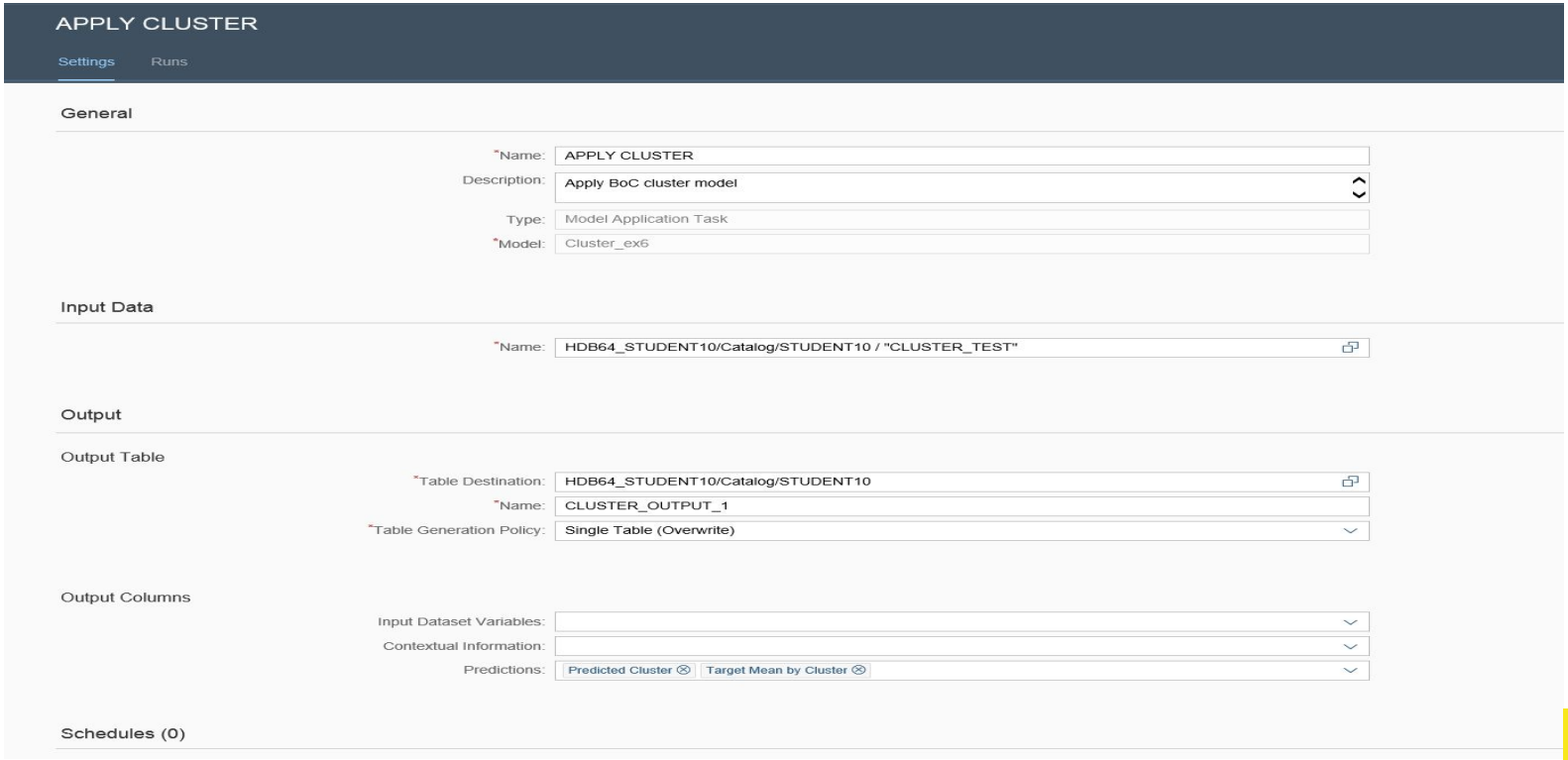
Cluster : Performance



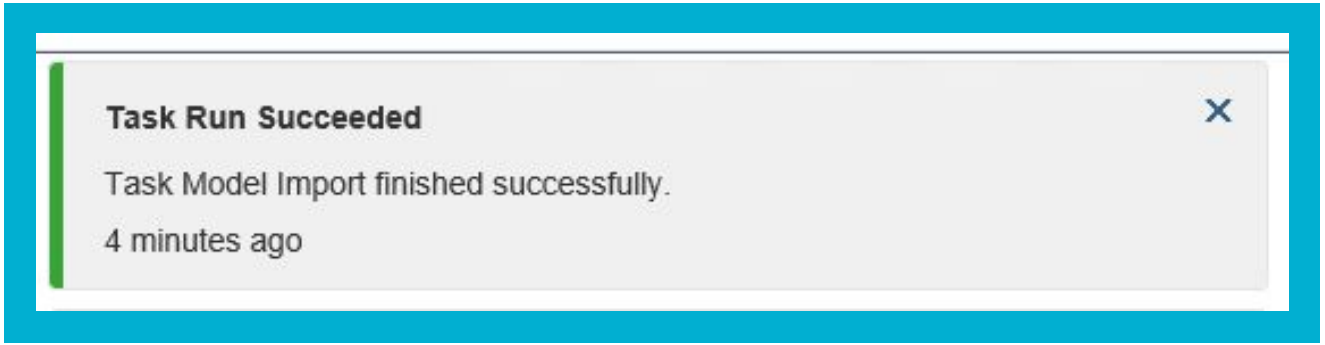
KI & KR Validation



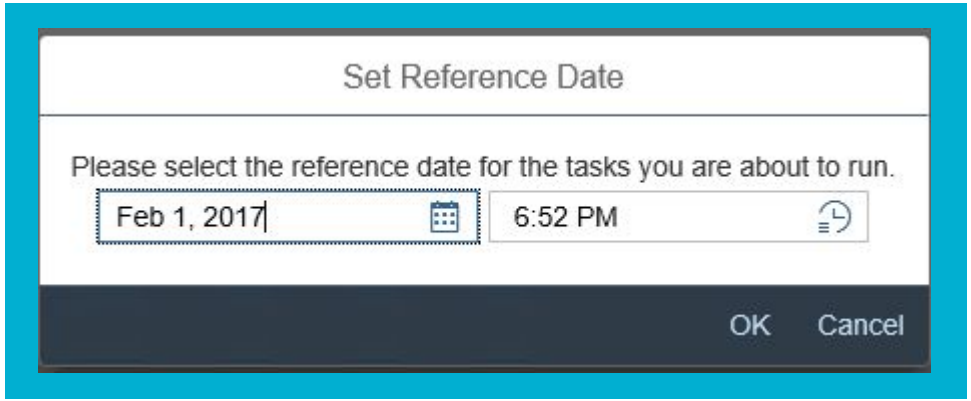
Import the cluster model into Predictive Factory



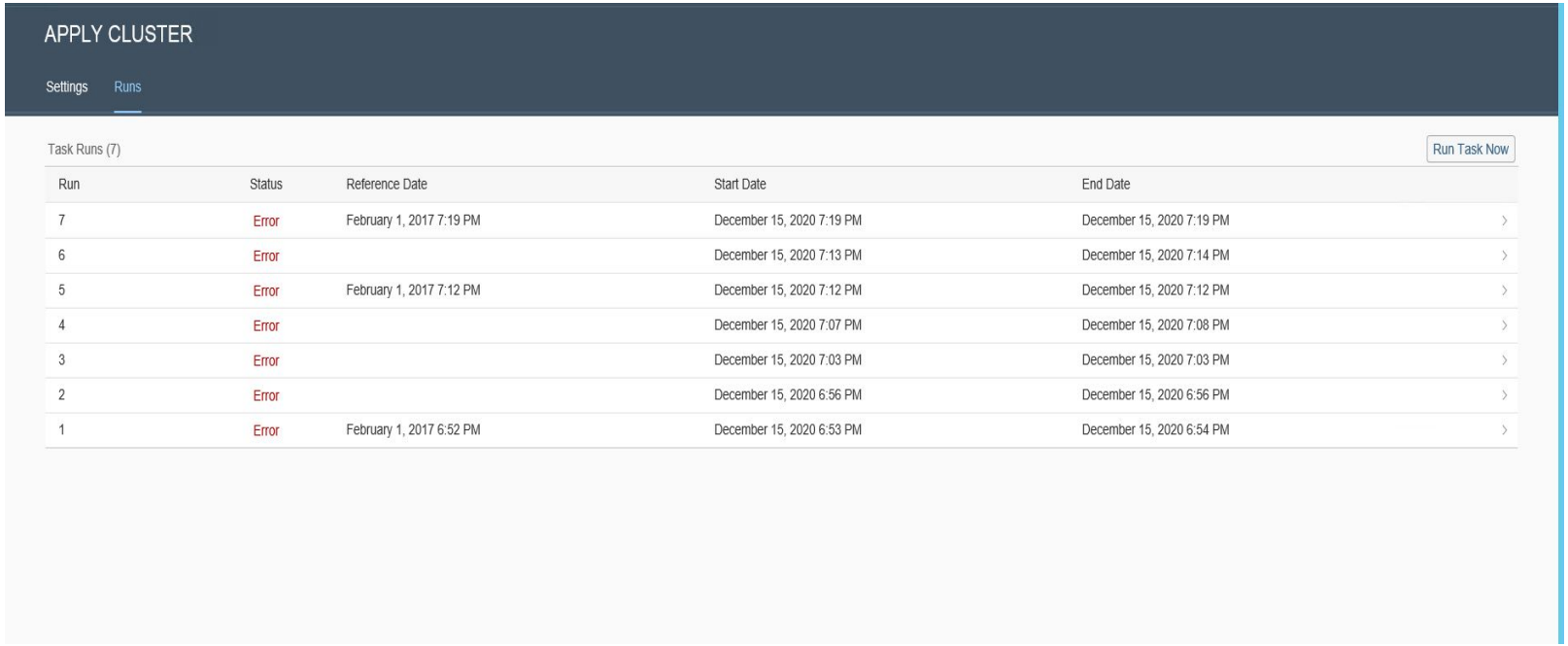
Imported Successfully



Set the reference date

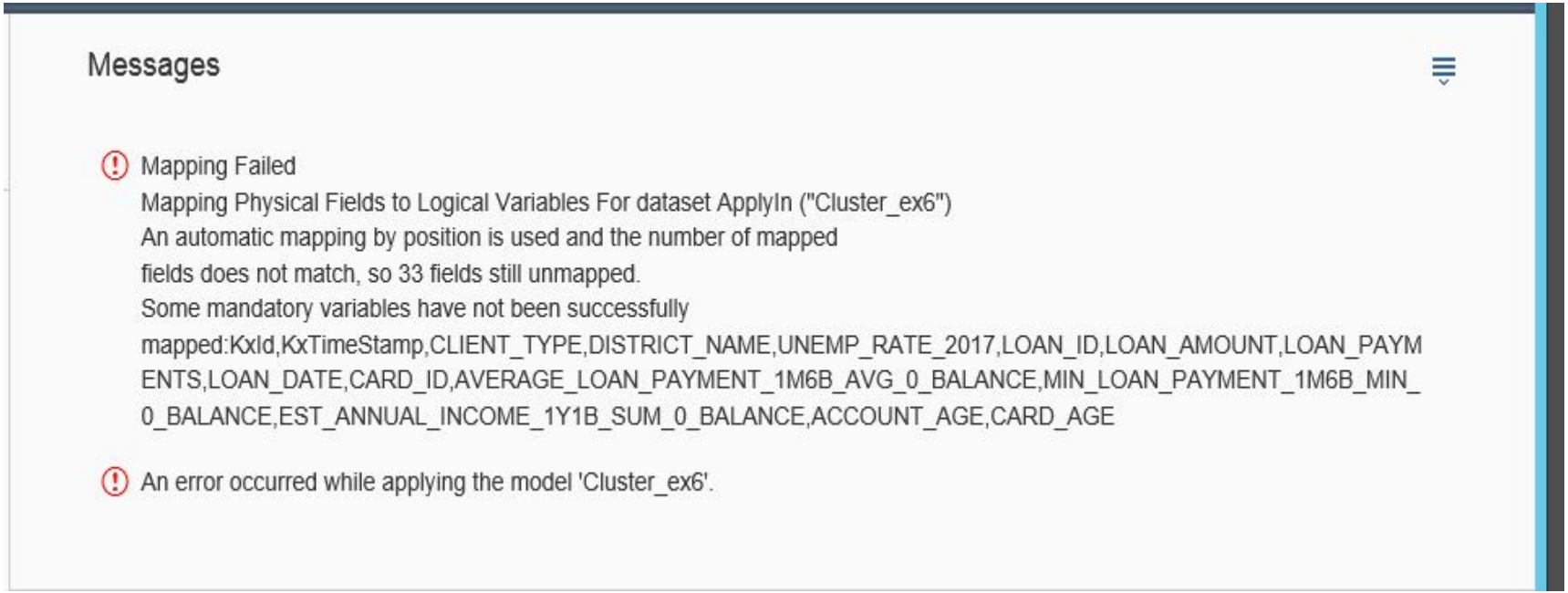


Struggles-part 1



Run	Status	Reference Date	Start Date	End Date
7	Error	February 1, 2017 7:19 PM	December 15, 2020 7:19 PM	December 15, 2020 7:19 PM
6	Error		December 15, 2020 7:13 PM	December 15, 2020 7:14 PM
5	Error	February 1, 2017 7:12 PM	December 15, 2020 7:12 PM	December 15, 2020 7:12 PM
4	Error		December 15, 2020 7:07 PM	December 15, 2020 7:08 PM
3	Error		December 15, 2020 7:03 PM	December 15, 2020 7:03 PM
2	Error		December 15, 2020 6:56 PM	December 15, 2020 6:56 PM
1	Error	February 1, 2017 6:52 PM	December 15, 2020 6:53 PM	December 15, 2020 6:54 PM

Struggles-part 2



Scenario 3

Business Goals

Improve customer loyalty and satisfaction by identifying high-net-worth customers and making them appropriate offers

Business Success Criteria

- **Customer attrition rate decreases from 17% to 10%2.**
- **Customer satisfaction increases from 75% to 85%**

Data Science Goals

Create a regression model that estimates the deposit sum for each customer for the next three months. Consider the following model architecture:

- **Latency Period**:- 1 month
- **History Period**:- 6 months
- **Target Period**- 3 months
- **Population Filters**- Exclude customers with less than 6 months of history

Scenario 3

Main Goal:

Improve customer loyalty and satisfaction by identifying high-net-worth customers and making them appropriate offers using regression model.

Target:

The target estimates deposits for next 3 months after the latency period.

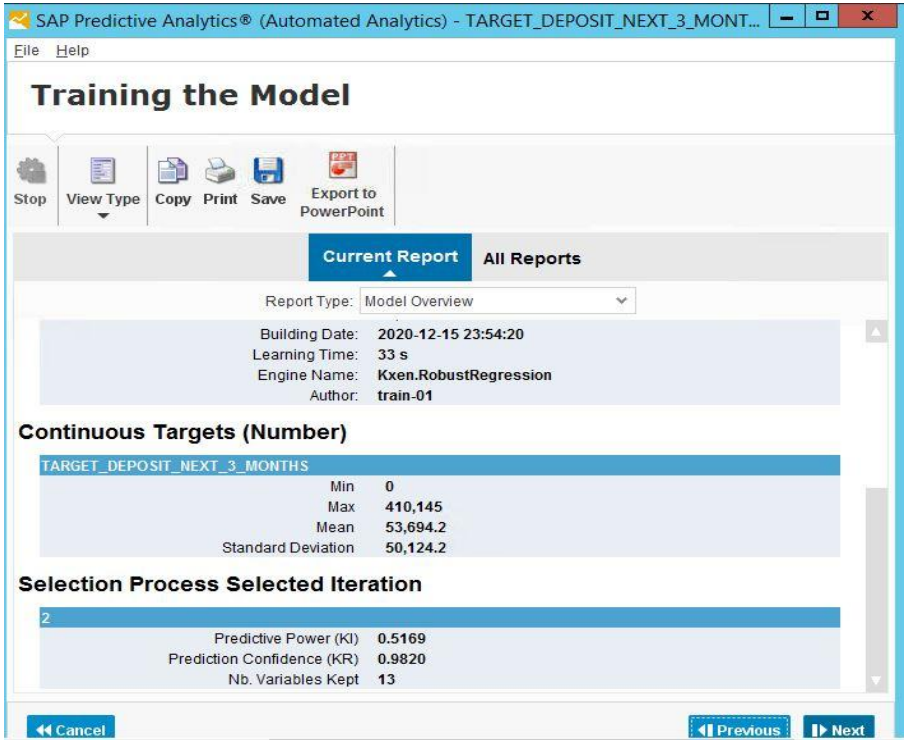
Regression Model- Overview

Continuas Target (Number)

- MIN : 0
- Max: 410,145
- Mean: 53,694.2
- Standard Deviation: 50,124.2

Selection process selected iteration

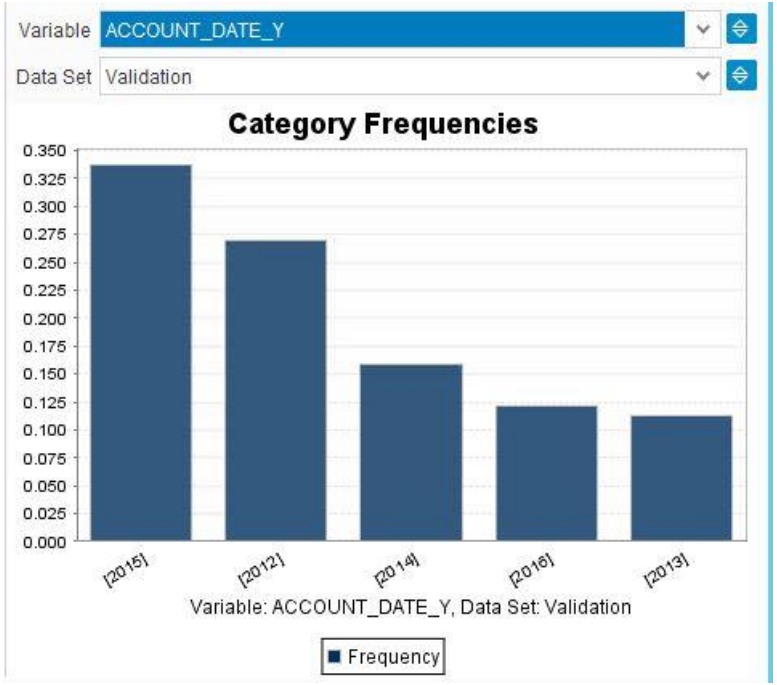
- Predictive power (KI): 0.51689
- Prediction confidence (KR): 0.9820



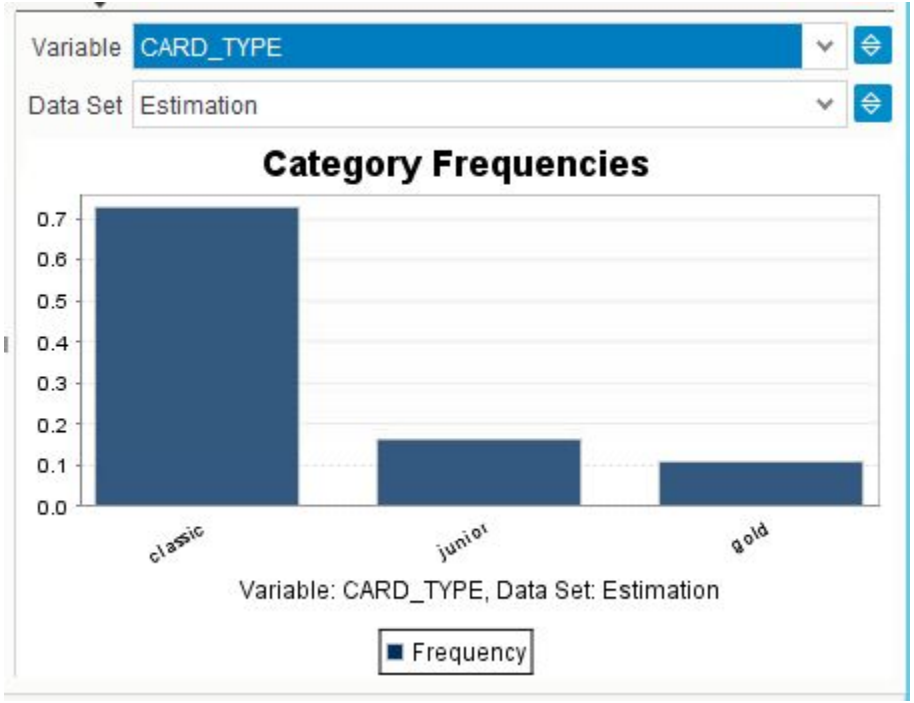
Regression Model- Performance

Category Frequencies - Account Age

Year	Frequency
2015	0.337.5
2012	0.272
2014	0.162.5
2016	0.125
2013	0.115

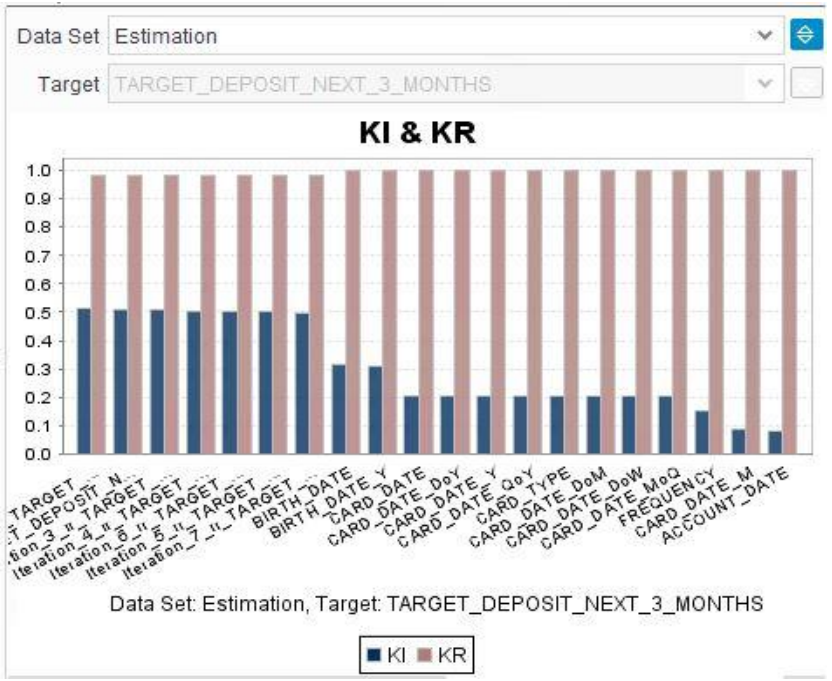


Category Frequencies - Card Type



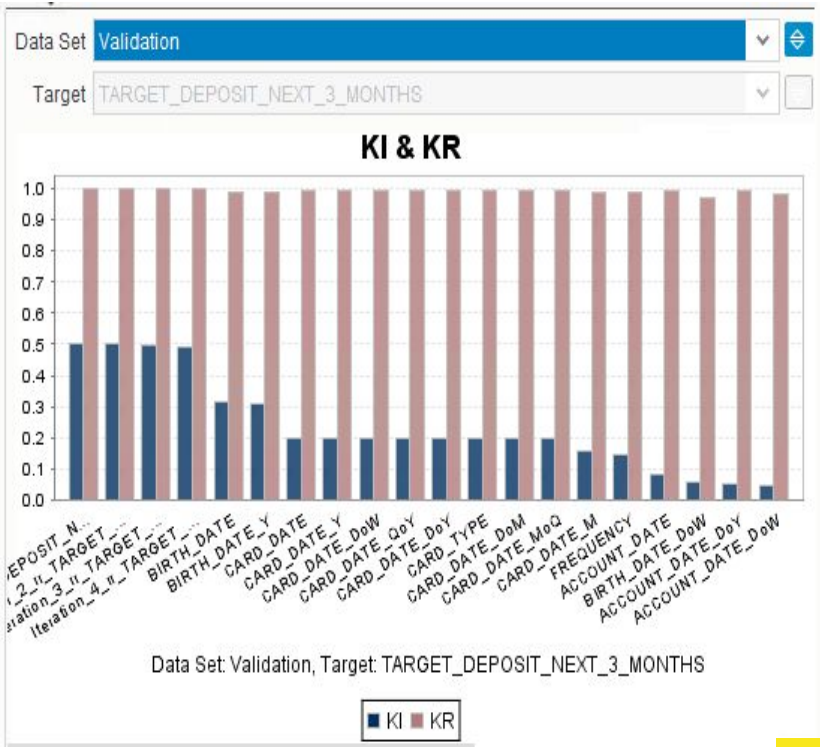
KI & KR Estimation

VARIABLES	KI	KR
TARGET	0.5	0.9
DEPOSITION	0.5	0.9
BIRTH_DATE	0.28	0.9
CARD_DATE	0.2	0.9
FREQUENCY	0.18	0.9
ACCOUNT_DATE	0.1	0.9



KI & KR Validation

VARIABLES	KI	KR
TARGET	0.5	0.9
DEPOSITION	0.5	0.9
BIRTH_DATE	0.3	0.9
CARD_DATE	0.2	0.9
FREQUENCY	0.15	0.9
ACCOUNT_DATE	0.8	0.9



Conclusion

In the three Business Scenarios addressed using SAP Predictive Analytics driving the bank towards digital transformation. The models created in order to enhance the bank to reduce risk from bank loans, enhance communications strategy, and Improve Customer Satisfaction in the Bank of the Crown.

THANKS