

Hints for Final Projects: Credit Card Customer Segmentation

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Hints: Credit Card Customer Segmentation

0. Please go through data, data dictionary, business problem, expectations document. You need to use Scientific segmentation (K-Means cluster analysis).

1. Create Detailed data audit report and identify key steps

2. Create all necessary KPI's as part of data

$\text{Monthly_avg_purchase} = \text{PURCHASES} / \text{TENURE}$

$\text{Monthly_cash_advance} = \text{CASH_ADVANCE} / \text{TENURE}$

$\text{limit_usage} = \text{BALANCE} / \text{CREDIT_LIMIT}$

if $\text{ONEOFF_PURCHASES} = 0$ & $\text{INSTALLMENTS_PURCHASES} = 0$ then $\text{purchase_type} = \text{'None'}$

if $\text{ONEOFF_PURCHASES} > 0$ & $\text{INSTALLMENTS_PURCHASES} = 0$ then $\text{purchase_type} = \text{'One_Of'}$

if $\text{ONEOFF_PURCHASES} = 0$ & $\text{INSTALLMENTS_PURCHASES} > 0$ then $\text{purchase_type} = \text{'Installment_Purchases'}$

if $\text{ONEOFF_PURCHASES} > 0$ & $\text{INSTALLMENTS_PURCHASES} > 0$ then $\text{purchase_type} = \text{'Both'}$

3. Treat outliers (both lower and upper side), don't delete the outliers. Cap & floor them as required (you may use 5th & 95th pctls as lower and upper cap for flooring and capping). Treat missing values (impute with median/mean). Convert categorical variables into numerical variables

4. Standardize the variables (with mean=0 and standard deviation=1). Perform factor analysis (select more than one variable in initial factors (where factors having more number of variables) and select variables based on it.

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5. Perform the segmentation using selected variables from the factor analysis (you need to iterate the solution with different variables in case of not getting proper segments). Since we don't know about K-value, you need to build multiple solutions (Typically 3 to 8 solutions). Append segment solutions to original variables
6. Finalize the K-value using metrics (like SC value, Pseudo F-value (elbow method)), Dendrogram, Profiling , best practices like segment distribution etc.
7. Once you finalize the segment solution, profile them with original variables (don't use standardized variables). In the profiling, you need to include all the variables (both variables used in segmentation and other variables excluded from the segmentation).
8. Finalize the solution, identify the characteristics of each segment and define the strategy for each segment based on the business problem.
9. Implementation code for new customers to classify into segments.
10. Detailed documentation as per expectations document

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