INDIVIDUAL ASSIGNMENT COVER SHEET

Course: INFS5700_____

LIC/Tutor: Jacky Mo_____

Assignment Title: Individual Assignment_____

World Count: 1197_____

Due Date: 4pm Friday, 23 June_____

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Student Name: Kawitsara Boonvisud_____

Student zID: z5234091_____

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This cover sheet has to be completed and signed by the student, and submitted along with the assignment.

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Introduction

In 2019, there were 8 main credit card issuers in Singapore. OCBC Bank held the third largest market share in terms of transaction value. However, based on Marcus, Chen & Pinar (2022), in the ISE's study of the Customer Satisfaction of Singapore (CSISG) in 2019, OCBC Bank's credit card business was ranked last among all credit card issuers studied. OCBC Bank had a relatively bad ranking in the likelihood of using the credit card again and the likelihood to recommend to others metric. These negative results of the customer's attitude survey indicate an adverse projection for the OCBC Bank's future business performance.

This report aims to define and solve a primary business problem faced by OCBC Bank. To address this problem, relevant research questions would be developed and the application of several types of analysis would be explored.

Primary Business Problem

Developing a business understanding is the first key step in the process of building an analytics solution. The primary business problem of OCBC Bank is, therefore, identified. The primary business problem faced by OCBC Bank is its underperformance in customer satisfaction and customer loyalty metrics within Singapore's highly competitive credit card market, posing a threat to its market shares and profitability in the long run.

Research Questions

To have a better understanding of the reasons behind the OCBC Bank's low customer satisfaction, 3 research questions are defined. The potential application of descriptive, predictive and prescriptive analysis would also be discussed aiming to answer these questions. The available data for this project is taken into account when discussing about the applicable analysis.

Research Question 1: What are the important contributing factors of the OCBC Bank's lower customer satisfaction and customer loyalty ratings compared to other credit card issuers?

To address this research question, a descriptive analysis should be conducted to gain a comprehensive insight of the attributes that might contribute to low customer satisfaction and loyalty. First, calculate the summary statistics of different rating variables that is related to customer satisfaction as well as royalty. Then, compare these statistics of the OCBC Bank with those of the other credit card issuers. These different rating variables might include "merchant tie-ups that meet your needs", "ease of reward redemption" and "card benefits". By conducting this, it would help identify specific attributes that OCBC Bank is lagging behind others. Additionally, visualizations could be created to show the relationships between customer satisfaction and different factors, especially the factors that OCBC Bank is shown to be lagging behind from the previous analysis. For instance, scatter plots could be created to explore the correlation between customer satisfaction and different attributes such as "quality given price", "flexibility of policies such as a waiver of charges" and "merchant tie-ups that meet your needs". This could give a clue regarding factors contributing to OCBC Bank's low customer satisfaction. Lastly, statistical tests such as a chi-square test should also be conducted to identify attributes that have the strongest correlation with low customer satisfaction and loyalty.

Additionally, a predictive analysis should be implemented by building a predictive model and analysing the variable importance. To be more precise, after a model that could predict customer satisfaction based on specified factors has been built, its results should be analysed. The coefficients or feature importance provided by the model could be examined in order to determine the key attributes that have significant impacts on the customer satisfaction and loyalty. Therefore, this analysis could shed light on areas that OCBC Bank should focus on to enhance its customer satisfaction in the credit card business.

Research Question 2: Could merchant tie-ups be used to help improving OCBC Bank's performance?

As Marcus, Chen & Pinar (2022) present that "merchant tie-ups that meet your needs" is one of the top drivers of customer satisfaction, it is worth to explore more into the merchant tie-ups attribute.

For a descriptive analysis, firstly, visualizations could be used to study the relationship between "the merchant tie-ups that meet your need" and customer satisfaction rating. After that, another descriptive analysis should be conducted to identify the specific merchant and privilege categories that receive the highest and lowest customer satisfaction rating. This could be done by grouping the dataset by specific categories in "Categories are you most satisfied with (INSERT CARD NAME)'s privileges" and calculate the average customer satisfaction rating for each category. Then, rank the privilege categories based on their average customer satisfaction rating in order to identify the categories that have the highest and lowest customer satisfaction level. This analysis should be done both across all credit card issuers and only for OCBC Bank. By conducting it across all issuers, it could give a better understanding on the overall customers' preferred privilege while by doing it only for OCBC Bank, it could give an insight on the privilege category that OCBC has provided and is most satisfied by its customers. With this analysis, it would help in making a decision on which merchant categories that OCBC Bank should remain and which categories OCBC Bank should secure to be their new merchant tie-ups in order to maintain and expand its customer base. Moreover, to get more insights, all these processes could be repeated for "the Category of recent purchase" factor.

Furthermore, a prescriptive analysis could also be conducted. First, analyse the relationship and identify the significant correlations between merchant tie-ups and customer satisfaction rating using statistical techniques such as regression analysis. Then, from these findings, propose strategies to help improve OBCBC Bank's performance which might include improving specific merchant tie-ups that are adversely impact customer satisfaction or arranging new merchant tie-ups and offering more card benefits.

Research Question 3: Which customer segment has the lowest satisfaction and loyalty toward OCBC Bank's credit card?

To answer this, a descriptive analysis and prescriptive analysis would be needed. The descriptive analysis would be conducted first. Firstly, segment customers based on demographic variables such as age, gender and monthly personal income. This could be done using clustering techniques such as k-means clustering. Then, for each customer segment, calculate the average customer satisfaction ratings. By comparing these averages across all segments, the customer segment with the lowest satisfaction and loyalty could be identified.

After that, the prescriptive analysis could be applied to develop tailored marketing campaigns. Firstly, analyse the preference of the customer segment with the lowest satisfaction, and conduct market research to gain more understanding on their needs and expectations. With this, personalised marketing campaigns and customised offers, that would address this particular customer segment's needs, could be built.

Potential Challenges

There are 3 main challenges that OCBC Bank might face when conducting the analysis. First, the size of the data available for the analysis is relatively small, which could lead to a false result for the analysis. OCBC Bank needs to ensure that adequate data is utilised in the analysis. Second, for a predictive analysis, feature selection could be challenging as it requires due diligence. Model selection could also be challenging as if the complexed model is chosen, it could cause a difficulty in identifying the contributing factor of customer satisfaction. Third, prescriptive analysis could be challenging in a way that it would need a careful planning and consideration of practical implementation.

Reference

Marcus, A, Chen, Y & Pinar, D 2022, 'Getting The Next Swipe: Improving Customer Loyalty For OCBC Bank Credit Cards', Singapore Management University.