**Data Analyst Written Report**

Jenny Ro

Dr. Mehall

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**Introduction:**

The assigned scenario placed me into the role of a data analyst working with the data from a large credit card company. The company recently conducted a marketing study focusing on 18,000 participants taken from their current user base. From this, I was directed to create a 3-page report using analytical methods at my own discretion to interpret the responses from the study. The main areas of focus are whether or not the offer was accepted (Yes/No), the customer’s credit rating, income level, household size, reward type, and mailer type. Though the goals of the company’s study is not specifically outlined, it will be inferred that there is a need to increase credit card offers accepted from within their existing customer base.

**Data Findings:**

Generally, the event of offer acceptance was rare, with only 1,023 of the entire 18,000 accepting the offer. Page 1 of this report displays this alongside the reward type associated with whether or not the offer was accepted. I chose this as supplemental information in addition to the required data because it revealed the main incentives that were used to add value to the credit card offer. Through the study, the group was evenly split into three groups, which all received a different type of reward. We can see that the offer that was significantly more likely to be accepted was the ones that included a reward of air miles.

The second page of the report displays the frequency of offer acceptance through the lens of three different attributes, being income level, credit rating, and mailer type. When taking income level into consideration, it is observed that those with high, and especially those from a low income level were more likely than those from the medium income level to accept the credit card offer. When looking into credit rating, a majority of those that accepted the offer possessed low and medium credit ratings. Overall, we see a trend that financially healthy participants were less likely to accept the program offer than those that demonstrated a higher likelihood of financial need in terms of income level and credit score. Lastly, it is noteworthy to consider the mailer type by which the offer was distributed to participants. The two methods used were postcard and letter, where postcards were significantly more likely to garner an accepted offer.

On the last page, I placed the last attribute of household size, which ultimately yielded that those with a 4.2 household size were more likely to accept the offer than any other group. To accompany this, I put a cluster analysis to visualize how certain groups behaved in relation to other attributes. Significance is able to be drawn from the analysis, specifically from the second cluster. When highlighted, it is seen that there was no instance of offer acceptance throughout this cluster. Despite this, they behave similarly in that they are from all credit levels, income levels, and received both types of mailers. This fact emphasizes the need to expand on the study.

**Future Implications & Conclusion:**

From this study, we can conclude that the current methods of offering credit card programs are rather ineffective. While an overwhelming minority accepted the program, those that did usually originated from low income levels accompanied by a low credit rating. While this can be observed, the company should be cautious to avoid predatory lending processes to these specific demographics and ensure that they would be able to pay off their debt including interest. To avoid an inherent rejection of offers, the methods of distributing the offers should be expanded beyond postcards and letters. By moving the program offer online through the website and email, it would allow participants to view the offer and simplify the process of application.

Additionally, it would be beneficial to the study to include other demographic variables such as the APY offered, gender of the participant, and age of the participant. By including this information, the actions moving forward can be specified to meet the underlying needs revealed by the data.