AllLife Customer Segmentation Study

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Post Graduate Program in Data Science and Business Analytics

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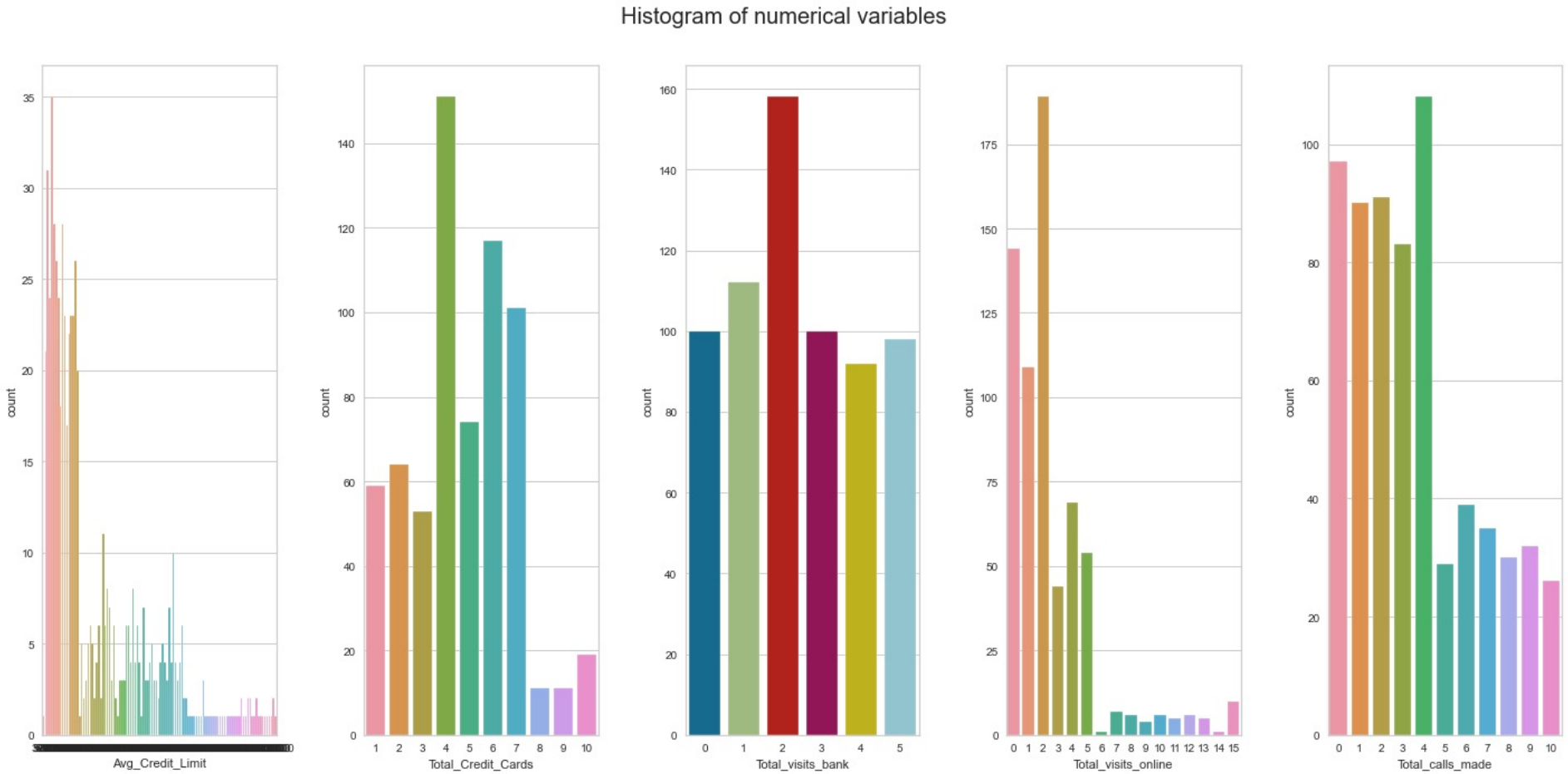
Background, Context, Objective & Deliverables

AllLife Bank wants to focus on its credit card customer base in the next financial year. They have been advised by their marketing research team, that the penetration in the market can be improved. Based on this input, the Marketing team proposes to run personalized campaigns to target new customers as well as upsell to existing customers.

Another insight from the market research was that the customers perceive the support services of the back poorly. Based on this, the Operations team wants to upgrade the service delivery model, to ensure that customers queries are resolved faster. Head of Marketing and Head of Delivery both decide to reach out to the Data Science team for help.

Build a customer segmentation recommendation based on Clustering and make business recommendations.

Customer Spending and Interaction Attributes



Insights based on EDA

The dataset does not contain a meaningful data dictionary to understand the features in a more nuanced fashion. Given that we are trying to provide actional insights to Marketing and leadership to help improve customer perceptions in service, we need to get a better understanding of the time element for variables such as Total Visits to the bank in person, on-line, calls made to the support line. It would also be good to have an understanding of the duration of those visits, calls, on-line sessions to understand how quickly a customer can gain resolution. Or in this case, was the visit on-line or in-person for a problem to be resolved. It is simply not clear from the amoutn of information given.

- For the same of this EDA insights and later clustering and business recommendations, I will assume the following:

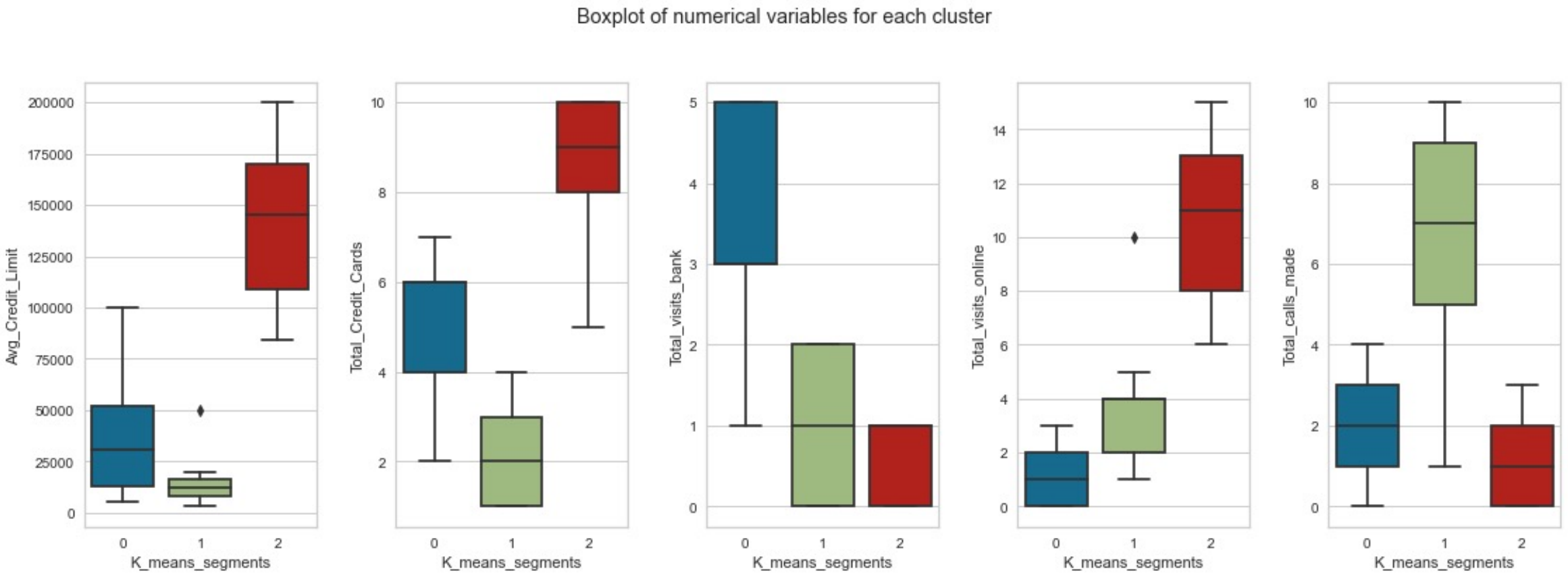
- **Average_Credit_Limit :** annual snapshot through any given year. These credit limits suggest a mix of individuals and small-to-medium businesses.
- **Total_Credit_Cards :** this represents a single customer, who could be a consumer or a business owner that has multiple cards on the same account with the Average_Credit_Limit reported
- In terms of visits, I will assume these numbers are annual as well as represent problem resolution visits through a specific channel....namely on-line, in person, and through a support call.

- ** Please note that I would want to normally validate all of this with the key stakeholders **

Insights based on EDA (continued)

- Customers have a wide range of credit limits, USD 3,000 - USD 200,000 suggesting a mix of personal and business banking. On average, customer have a USD 34,574 Credit limit with 50% of the customers lying between USD 10,000 and USD 48,000. The median Credit Limit is USD 18,000. The data has a significant number of outliers which are probably the handful of bsuiness customers. This is all supported by Customers having at least 1 credit card (personal banking), and up to 10 credit cards (possibly a SMB). Data is left skewed, i.e., customers tend toward having fewer than more credit cards...again supporting the predominance of personal banking. 50% of the customers will have between 3 to 6 cards which might make sense if most of the customers were married and potentially had children who shared cards. Unlikely that a bank is opening 3-6 discrete Credit Card accounts for a single customer.
- When customers choose to visit in-person the maximum number of visits is 5. Half of all the customers will make between 1 and 4 trips which seems very high. This is assumed to be the most inconveniencing form of problem resolution or method to get answers to any queries given the time and energy to visit the bank. It would be good to know the time to resolve when they do visit if we could gather that form the key stakeholders.
- When a customer chooses to contact the bank on-line, the average is about 2.6 times. Half of the customers will visit on-line between 1 and 4 times. Again these seem like high contact magnitudes and affected customer base, even in a year for problem resolution. Some customers have had to visit up to 15 times.
- And when a customer has to call in to resolve an issue, it sometimes has taken up to 10 calls or they have had separate needs to call in up to 10 times in a given period. We don't know specifically, but we know on average, customers make up to 3.58 calls and over half will make between 1 and 5 calls.
- Assuming again, these calls are all made in a period of 1 year, these numbers all seem very high based on personal experience in having to call into my bank to address questions or concerns with my own credit cards. It is understandable that customers are frustrated and have a poor perception of the customer service.
- We do not have enough reasons to meaningfully address the "Why?" customers have for reaching out, but we can group them in the next section to explore patterns in behavior based on their number of cards and average credit limit.

Customer Segments Based on Clustering



Observations: Clustering

There are 3 main clusters to review. These comments for each cluster is based on the IQR values (namely, the behavior between quartiles 25% and 75%) representing typical behavior. Extremes will be commented on as approporiate.

Cluster 0

- Customers have between ~ 12.5K and 55K USD in Average Credit Limit. Notably, this group of customers have the minimum average credit limit and go up to 100K USD.
- Customers tend to have between 4 and 6 credit cards, but could have as few as 2 and as many as 7.
- They will typically make 3-5 in-person visits to the bank for query/problem resolution.
- They will typcailly make 0-2 online visits, with a max of 3.
- They will make 1-3 calls, with a maximum of 4.

Cluster 1

- These customer have a very narrow Average Credit limit with outliers up to 50K USD. They tend to have what appears to be very low credit limits in general. This could be customers who are new to building credit or customers repairing credit.
- They tend to have between 1 and 3 cards and amaximum of 4 cards. Also indicating personal banking usage.
- These customers tend to visit between 0 and 2 times in person, make 2-4 visits on-line, and make the most number of calls. Their grand max is 10, and over half of them will make between 5 and 9 calls.

Cluster 2

- This group of customers have the highest credit limits and number of cards typically. The scale of the limits and number of cards suggest that these could be business accounts.
- This group of customers make 0-1 trips per year and the fewest number of calls. They prefer to bank on-line and ask/resolve their issues this way.

Business Recommendations

AllLife is focused on targeting new customers and upselling to existing customers through targeted marketing campaigns, with a tertiary goal of improving service levels to these customers.

Step 1:Customer Segmentation

- AllLife should segment their customers based on their stage in the credit journey characterized mainly by their Average Credit Limit and the number of cards they have/need for their accounts.
  - **A. Established Customers (Cluster 0 attributes)**
  - **B. Credit Builders (Cluster 1 attributes)**
  - **C. Business Customers (Cluster 2 attributes)**

Step 2: Target the customers you have for upsell activities & improving service quality perception

- Based on these characteristics described for each of the Cluster Attributes, marketing can quick identify specific customers in each segment and build a message around new products, as well as methods to share information based on their preferred engagement channel for questions/problem resolution. They could also use this as an opportunity to earn trust with these customers, share improvements that have been made in these different channels to improve resolution time, as well as help improve the migration of customers who prefer walk-in and calls to using on-line resolution. They may also consider enhancing their collateral describing these communication channels and how efficient they can be. This will give the customer a feel that AllLife cares about their Experience each time they need support.

Step 3: Target New Customers

- These Cluster Attributes and customer tendencies used in segmentation can be used to do another study of demographics, as well as tailor their outreach programs to include local advertising for customers looking to a bricks and mortar (in-person) experience versus those who engage for Credit Card services on-line. They may consider techniques such as mailers, GoogleAds, account based marketing, as well as enhancing their websites based on SEO best practices.

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