Literature Review

(Al-Dabbas et al., 2023) focused on utilizing K-means clustering as a technique for segmenting the customer personalities to help businesses understand the customer's more effectively and modify the products accommodating the specific needs, behaviors, and interests of different customer segments. Utilizing the unsupervised learning for customer personality analysis to cluster the customers with shared characteristics will allow companies to create tailored marketing strategies. This proved the effectiveness of the performing the clustering and getting valuable insights

The referenced papers provide valuable information for our study on customer personality analysis as they highlight the significance of analyzing demographic information about consumers and using algorithms like K-Means clustering to understand various consumer groups. These techniques help to shape targeted marketing strategies by highlighting how demographic factors affect purchasing behavior. The machine learning algorithms stated in these research articles, like association rule mining and K-means clustering, can be utilized to analyze the relationship between personality traits and purchasing behavior.

The research questions this paper is attempting to answer are, how customers in the dataset are distributed across different age groups, education levels, and marital statuses and certain characteristics, preferences, and behaviors of different customer segments, does the purchase of one item influence the purchase of others, and to what extent is there a correlation between

different products, and does income influence the purchase of certain goods, and to what extent is there a correlation between different products and income.

The project hypothesizes that there will be significant variations in customer distribution across different age groups, education levels, and marital statuses. It is specifically anticipated that there would be distinct clusters within each demographic category. Another hypothesis would be that income levels will have a discernible impact on the purchase of certain goods. Higher income brackets could be associated with a greater propensity for acquiring luxury or high-end products.

REFERENCES

Basu, R., Lim, W. M., Kumar, A., & Kumar, S. (2023). Marketing analytics: The bridge between customer psychology and marketing decision-making. Psychology & Marketing, 1–24. https://doi.org/10.1002/mar.21908

K. Bhade, V. Gulalkari, N. Harwani and S. N. Dhage, "A Systematic Approach to Customer Segmentation and Buyer Targeting for Profit Maximization," 2018 9th International Conference on Computing, Communication and Networking Technologies (ICCCNT), Bengaluru, India, 2018, pp. 1-6, doi: 10.1109/ICCCNT.2018.8494019.

L. Al-Dabbas, H. Al-Tarawneh and T. A. Al-Rawashdeh, "Customer Personality Segmentation Using K-Means Clustering," 2023 International Conference on Information Technology (ICIT), Amman, Jordan, 2023, pp. 537-543, doi: 10.1109/ICIT58056.2023.10225996.