

CUSTOMER SEGMENTATION OF A MALL USING MACHINE LEARNING

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ABSTRACT

Customer Segmentation is the division of potential customer in a given market into discrete groups, which is based on customers having similar needs and buying characteristics such as gender, age, interests, and miscellaneous spending habits. While the most companies possess enough market knowledge to predict which customer segments are the company's most profitable. The leaders of those businesses also know that scaling a business is not best left to guesswork. That's why, in a customer segmentation process, it's very important to develop customer segment hypotheses and variables, and then validate them with a well-developed, scientific research process. The project study and examines customer data and applies unsupervised machine learning methods such as K-Means and Hierarchical clustering to segment customers. The study also consolidates related work in the field of customer segmentation.

INTRODUCTION

The emergence of many competitors and entrepreneurs has caused a lot of tension among competing businesses to find new buyers and keep the old ones. As a result of the predecessor, the need for exceptional customer service becomes appropriate regardless of the size of the business. Furthermore, the ability of any business to understand the needs of each of

its customers will provide greater customer support in providing targeted customer services and developing customized customer service plans. This understanding is possible through structured customer service. Each segment has customers who share the same market features. Big data ideas and machine learning have promoted greater acceptance of automated customer segmentation approaches in favour of traditional market analytic that often do not work when the customer base is very large.

LITERATURE SURVEY

Customer segmentation is the process of dividing customers into groups based on common characteristics so companies can market to each group effectively and appropriately. In business-to-business marketing, a company might segment customers according to a wide range of factors, including: industry, number of employees, products previously purchased from the company, and location. In business-to-consumer marketing, companies often segment customers according to demographics that include: age, gender, marital status, location (urban, suburban, rural), life stage (single, married, divorced, empty, retired, etc.).

Customer segmentation, also called consumer segmentation or client segmentation, procedures include:

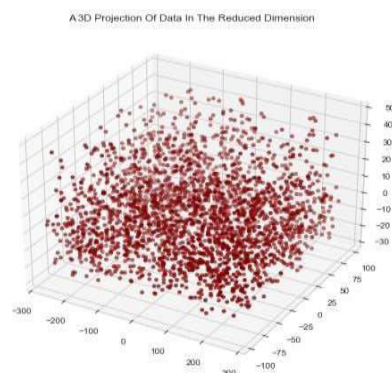
- ✓ Deciding what data will be collected and how it will be gathered
- ✓ Collecting data and integrating data from various sources
- ✓ Developing methods of data analysis for segmentation
- ✓ Establishing effective communication among relevant business units (such as marketing and customer service) about the segmentation
- ✓ Implementing applications to effectively deal with the data and respond to the information it provides.

PROPOSED

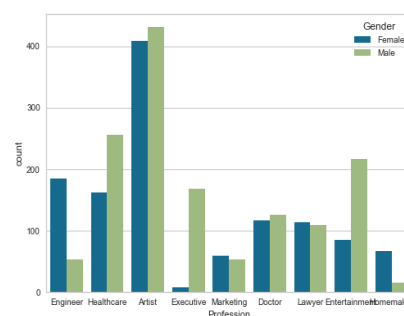
Over the years, increased competition among businesses and the availability of large-scale historical data has resulted in widespread use of data mining techniques to find critical and strategic information that is hidden in organizations' information. Customer Segmentation is the division of potential customer in a given market into discrete groups, which is based on customers having similar needs and buying characteristics such as gender, age, interests, and miscellaneous spending habits. While the most companies possess enough market knowledge to predict which customer segments are the company's most profitable. The leaders of those businesses also know that scaling a business is not best left to guesswork. That's why, in a customer segmentation process, it's very important to develop customer segment hypotheses and variables, and then validate them with a well-developed, scientific research process.

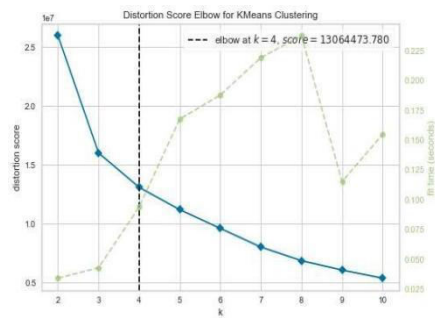
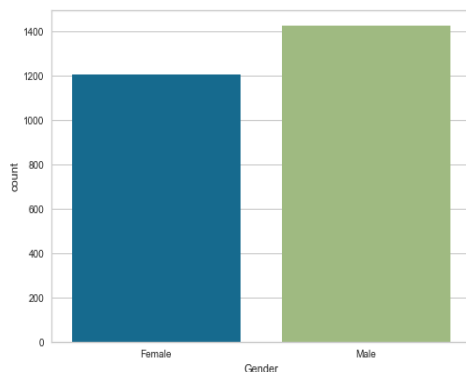
- ✓ The proposed system is based on using unsupervised machine learning methods such as
- ✓ Agglomerative clustering.
- ✓ K-Means and Elbow method.
- ✓ To find the number of clusters in a data set.
- ✓ Interpretation and validation of the consistence within cluster analysis designed.

RESULTS



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CONCLUSIONS

The study attempted to build unsupervised machine learning models such as K Means and Hierarchical clustering to segment customers. The future steps that to go for would be having a closer look at large data set feature and evaluating them and build an efficient model.

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