Customer Segmentation With K-Means Clustering Suzuki Mobil Bandung Customer Case Study

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Keywords:	ABSTRACT
suzuki bandung; clustering K-means; SPSS; canvasing	In the city of Bandung, it is recorded that until February 2023 as many as 500 thousand private cars crowded the streets in the city of Bandung. People's needs for private cars are met through the purchase of new cars from dealers or used purchases. As a dealer, the main task is to meet car sales targets every month and year. Suzuki dealers, especially in Bandung, do not have solid information about what type of car is most liked by the people of Bandung, what is the background of the customers and what marketing efforts are most optimal to increase sales. Suzuki car sales data for the June-October 2023 period was analyzed as many as 165 sales from various types of cars, customer domicile, customer's proffesion and marketing efforts carried out until the purchase occurred and the choice of payment method. In this paper, a clustering analysis of the K-means method with 4 clusters with car type, customer domicile location, marketing effort, customer profession, transmission type and payment method is made. Analysis performed with IBM SPSS v.29 program. The type of Carry passenger vehicle is the choice of many Suzuki customers in Bandung and Suzuki customers mostly come from the people of Bandung and around Bandung who work as entrepreneurs and traders. Suzuki Bandung needs to maintain and improve Canvansing as an effort to acquire customers as can be seen from the analysis of customer segmentation data in this paper

Introduction

Having a 4-wheeled vehicle is still a lot of desire and dream of families in Indonesia. The hope of owning a car is taken by the Indonesian people by buying a used car because of consideration of funds or also because of consideration of taste, many also have a new car by buying from dealers for various reasons such as sufficient funds, want to have the latest type of car, available payment system and other more personal reasons (Berkhin, 2016).

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Suzuki as one of the 4-wheeled vehicle brands from Japan entered Indonesia since 1970 in collaboration with one of the companies in Indonesia as a sales partner (Mulyo & Heikal, 2022).

Suzuki currently has various types of cars sold in Indonesia originating from 2 factories in Indonesia and some imported from factories abroad (import) (Della Resti & Heikal, 2023).

In 2022, Suzuki recorded car sales figures throughout Indonesia of 89,067 units with various types produced domestically and imported from outside Indonesia (CKD) (Lefait & Kechadi, 2010).

In 2011 Suzuki invested $800 million to produce low-cost eco-friendly cars and in 2013 reinvested $1 billion to build a factory in Cikarang to meet domestic and export car needs.

Customers in buying a car will choose a vehicle according to their needs, desires and tastes. Factors that are often taken into consideration before buying a car include vehicle type, capacity, transmission, color and available payment (Santosa, 2017).

In this paper, the author analyzes the segmentation of Suzuki car customers in Bandung based on sales data for June-October 2023 of 164 purchases (Chaffey & Smith, 2022).

This Suzuki car customer segmentation analysis can be used to support Suzuki dealer marketing efforts in the future by knowing customer information related to the type of car that is the choice of Suzuki customers, customer work background, customer living area and payments that many customers choose.

In the dynamic landscape of the automotive industry, understanding customer behavior and preferences is paramount for companies to tailor their marketing strategies effectively. Customer segmentation, a pivotal tool in market analysis, enables businesses to categorize their diverse consumer base into distinct groups with similar characteristics. This segmentation facilitates targeted marketing efforts, personalized communication, and ultimately, enhances customer satisfaction and brand loyalty.

This study focuses on Suzuki Mobil Bandung, a prominent player in the automotive sector, operating in the vibrant city of Bandung, Indonesia. By employing K-means clustering, a robust machine learning technique, this research aims to segment Suzuki Mobil Bandung's customer base into meaningful groups based on various demographic, psychographic, and behavioral factors.

Segmentation Precision The primary objective of this study is to achieve precise segmentation of Suzuki Mobil Bandung's customer base. By accurately delineating distinct customer groups, the company can tailor its marketing strategies to meet the unique needs and preferences of each segment (Mulyono, Ndini, Kharisma, & Heikal, 2023).

Market Insights: Through customer segmentation, this research aims to provide valuable insights into the diverse preferences, behaviors, and characteristics of Suzuki Mobil Bandung's clientele. These insights will enable the company to make informed decisions regarding product development, pricing strategies, and service enhancements.

By understanding the distinct segments within its customer base, Suzuki Mobil Bandung can optimize its marketing efforts. Tailored promotional campaigns, targeted advertisements, and personalized offers can be crafted to resonate with each segment, maximizing marketing ROI and driving customer engagement.

Benefits customer segmentation allows Suzuki Mobil Bandung to deliver personalized experiences tailored to the specific preferences of each segment. By

addressing the unique needs of different customer groups, the company can enhance customer satisfaction and foster long-term loyalty (Güçdemir & Selim, 2015).

By identifying high-potential customer segments, Suzuki Mobil Bandung can allocate its resources more efficiently. This includes optimizing advertising spend, allocating sales efforts strategically, and focusing product development initiatives on areas with the greatest market demand (Ariati, Norsa, Akhsan, & Heikal, 2023).

A deep understanding of its customer base gives Suzuki Mobil Bandung a competitive edge in the automotive market. By leveraging customer segmentation insights to anticipate market trends and consumer preferences, the company can stay ahead of competitors and drive sustainable growth (Kushwaha et al., 2020).

The novelty while customer segmentation is a well-established practice in marketing, the novelty of this study lies in its application of advanced machine learning techniques, specifically K-means clustering, to the unique context of Suzuki Mobil Bandung's customer base. By harnessing the power of data-driven insights, this research aims to offer a comprehensive and actionable framework for customer segmentation, tailored to the specific needs and challenges of the automotive industry in Bandung. Through the integration of cutting-edge analytics and industry expertise, this study endeavors to deliver innovative solutions that drive tangible business outcomes for Suzuki Mobil Bandung.

Research Methods

To understand Suzuki customers better, it is necessary to get an overview of customer profiles. For this purpose, it is necessary to segment Suzuki customers in Bandung. The approach is carried out by processing sales data owned by Suzuki Bandung, which in this paper is limited to the sales period of June-October 2023. Segmentation is done using the K-means clustering method with the help of the SPSS program (Sugiyono, 2021).

Clustering is a method for grouping a set of objects that have similar characteristics between one object and another.

Clustering is a data mining technique and is divided into 2 categories, namely hyrarchical clustering and non-hyrarchical clustering.

In hyrarchical clustering, two or more objects that have the closest similarity are grouped, then the process continues to the next object that has similarities and this process continues to be carried out so as to form a tree with clear levels (hyrarchi) between objects from the most similar to the least similar. In the end all objects come together in one cluster.

In contrast to hyrarchical clusters, in non-hyrarchical clustering methods the number of clusters is set early in the process. After the number of clusters is determined, the clustering process begins. In this paper the steps for preparing data before the analysis process is carried out using the SPSS program. Here is the flow of the analysis process carried out.

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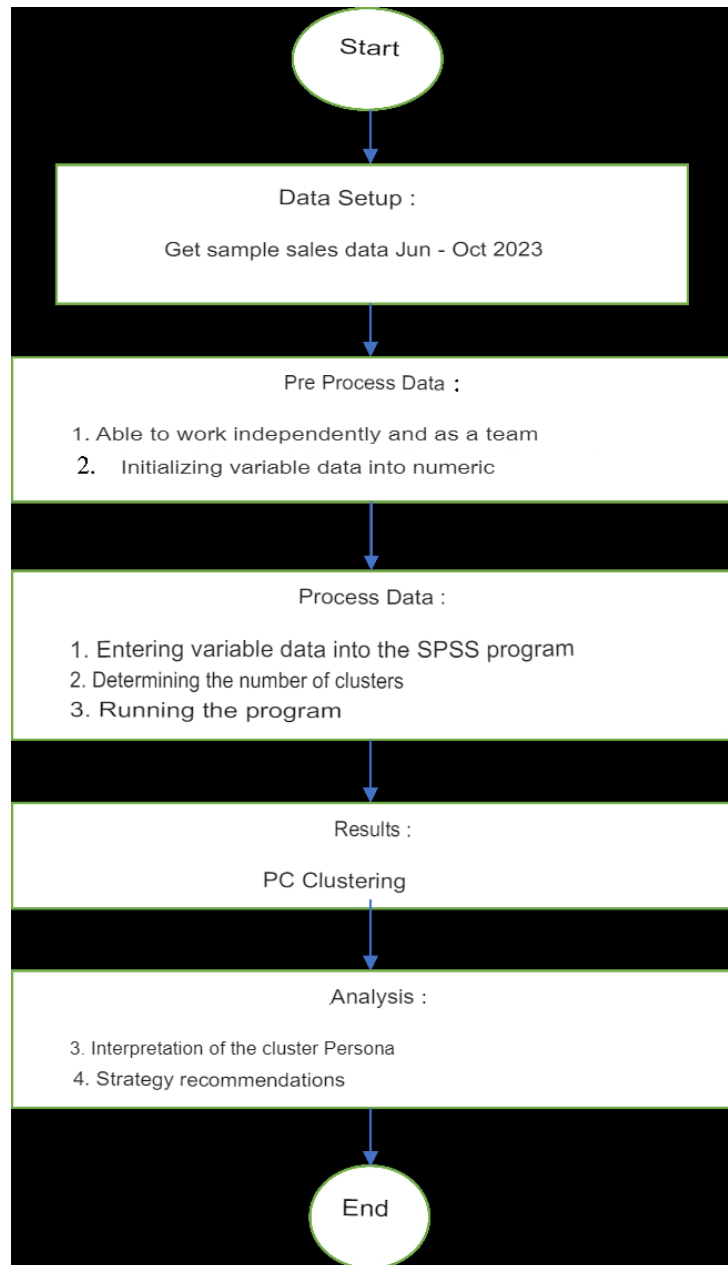
Results and Discussion

The data analyzed is a sample of sales data for the June-October 2023 period. The data consists of customer name, address, customer occupation, car type, color, type of transmission and payment method.

Furthermore, the data is made numerical initialization so that it can be processed by the K-means method.

The overall initialization data of 164 customers was then processed using the SPSS v.29 program for clustering using the K-means method and the results were as follows:

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	1	2	3	4
Lokasi				
Kod.BDG	0.61	1	0.65	0
Kab.BDG	0.39	0	0.35	1
Tipe Mobil				
New Carry 03	0.81	0	0.71	0
S-Presso 02	0.02	0.42	0.13	0.64
Grand Vitara	0	0.14	0	0.12
New XL-7	0.09	0.25	0.06	0.15
All New Ertiga 05	0.06	0.08	0.1	0.09
New Jimmy FE	0.02	0	0	0
Baleno	0	0.08	0	0
Ignis FE	0	0.03	0	0
	1	2	3	4
Effort				
Canvasing	0.56	0.69	0.74	0.48
Referensi	0.11	0.08	0.03	0.09
Exhibition	0.05	0.06	0.03	0.27
Media Cetak	0	0	0.03	0
Database	0.13	0.08	0.06	0.09
Showroom	0.11	0.03	0.03	0.06
Mediator	0.05	0.06	0.06	0
Jenis Pekerjaan				
Wirausaha	0.66	0.44	0.26	0.52
Pedagang	0.19	0.11	0.42	0.06
Kary PNS	0	0.08	0	0.09
Kary Swasta	0.03	0.19	0.13	0.24
Kary BUMN	0	0.08	0	0.06
Kontraktor	0.08	0.03	0	0
Pedagang	0	0	0	0
Pemilik Toko	0.03	0.06	0.06	0.03
Pertanian	0.02	0	0.13	0
Jasa	0	0	0	0
	1	2	3	4
Transmisi				
At	0	1	0	1
Mt	1	0	1	0
Cara Pembayaran				
Cash	1	0.44	0	0.3
Leasing	0	0.56	1	0.7

The clustering analysis above obtained the persona of each cluster as follows:
Cluster 1 :

It is the largest cluster with 61% living in Bandung and 39% around Bandung. In the choice of car types in this Cluster, 81% chose the Carry passenger car type, 9% the New XL-7 type and the rest other types. In terms of job type, this cluster is dominated by entrepreneurs 66%, traders 19% and 8% contractors. Cluster chooses payment with Cash as much as 100% (Agusta, 2017).
Cluster 2 :

100% of this cluster lives in the city of Bandung and chooses the S-presso car type 42%, New XL-7 25%, Grand Vitara 14%, New Ertiga 8% and Baleno 8%. This cluster is 44% Entrepreneurs, 19% Private employees, 11% Traders, 8% SOE employees, 8% Civil Servants and 6% Shop owners. 56% prefer payment by Leasing (Santoso, 2020).
Cluster 3 :

65% live in Bandung and 35% around Bandung. This group chose 71% of the Carry car type, 13% S-presso, 10% Ertiga and 6% New XL-7. This type of cluster work is 42% traders, 26% entrepreneurs, 13% private employees, 13% agricultural businesses and 6% shop owners. This cluster 100% chooses payment by Leasing (Kotler & Keller, 2016).
Cluster 4 :

100% of this cluster lives around the city of Bandung and chooses 64% S-presso car type, 15% XL-7, 12% Vitara and 9% Ertiga. For this type of work, 52% are entrepreneurs, 24% are private employees, 9% are civil servants, 6% are employees of state-owned enterprises, 6% are traders. Payment 70% vote by leasing.

Conclusion

Suzuki Mobil has a strong positioning in Bandung for the Carry passenger car type as seen in Cluster 1 and Cluster 3 which like this type of car 71%-81%. These types of cars are favored by Suzuki customers who work as entrepreneurs and traders, as seen from the many customers from this group in each cluster.

Marketing efforts with Canvasing are the dominant method to get customers as seen from the high percentage in all Clusters with a figure of 48%-74% so this method is recommended to continue to be improved and more massively carried out.

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