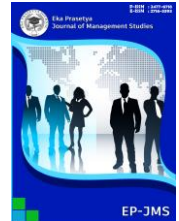




Jurnal Manajemen Bisnis Eka Prasetya

(Eka Prasetya Journal of Management Studies)



Segmentation Analysis of Consumer Expenditures in Home Appliances Products

Segmentation Analysis of Consumer Expenditures in Home Appliances Products

Michael¹, Helga Meilany², Aditya Rachman Zarkasih³, Jerry Heikal⁴

¹Program Studi Manajemen Fakultas Ekonomi Universitas Bakrie

²Program Studi Manajemen Fakultas Ekonomi Universitas Bakrie

³Program Studi Manajemen Fakultas Ekonomi Universitas Bakrie

⁴Program Studi Manajemen Fakultas Ekonomi Universitas Bakrie

Keywords:

Segmentation; Home Appliances; Consumer Expenditures; K-mean Clustering

Abstract. The digital era has brought significant changes in the way consumers view and purchase household appliances. Technological advances, lifestyle changes and emerging market trends have all played a role in shaping consumer spending habits in this sector. This research aims to determine the segmentation of consumer spending in shopping for home appliances products. The method used is descriptive quantitative k-mean clustering in SPSS software based on the results of a random sampling survey of 100 samples from 10.000 population. Based on research results, it shows that cluster 5 with persona SpendThrift Families is the best target cluster for home appliances companies to sell their products, especially in the categories of gardening equipment, kitchen appliances, and bathroom & laundry.

Corresponding author*

Email:

mingie2204@gmail.com¹,

helga.meilany@gmail.com²,

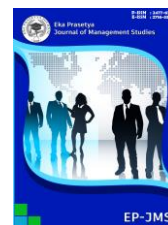
adityazarkasih@gmail.com³,

jerry.heikal@bakrie.ac.id⁴



Jurnal Manajemen Bisnis Eka Prasetya

(Eka Prasetya Journal of Management Studies)



1. INTRODUCTION

In the ever-growing digital era, dramatic changes can be seen in various aspects of life, including the way consumers view and buy household products, especially home appliances. The existence of the latest technology, changes in lifestyle, and continuously developing market dynamics have influenced consumer spending patterns in the context of home appliance products.

In Indonesian, Home Appliances are called household devices, which shows their role in facilitating various activities in the household. These tools are designed to assist individuals in carrying out their daily tasks efficiently and conveniently. The majority of these devices rely on electricity as the primary power source, allowing them to function effectively. In addition, this device is user-friendly and can be operated easily, as long as you pay attention to its electricity consumption (Cashbac, n.d.).

Another opinion states that household appliances are machines or devices that are widely used in residential and lodging properties. They are also known as Household Appliances, Electrical Appliances, and Home Appliances. In addition, household appliances are often associated with kitchen equipment, although there are other types of equipment present in our homes, such as electronic devices. However, electronic devices are specifically categorized as part of consumer electronics, a branch of equipment generally characterized by electronic mechanisms. Therefore, it can be said that household appliances not only include household and kitchen electrical equipment, but also include consumer electronics. This is especially seen in the fact that most kitchen or household appliances today use microchips, especially when it comes to smart kitchen appliances. (Medialdea, 2022)

Home appliances, or household devices, have a vital role in increasing the comfort and efficiency of daily life. From washing machines to sophisticated kitchen appliances, consumers have access to a variety of products that offer innovative features. Products in home appliances can be categorized into Home Living Appliances (tables, chairs, cupboards, shelves, and the like), Kitchen Appliances (cooking equipment such as Teflon, pans, steamers, knives, cutlery, etc.), Electronic Appliances (TV, refrigerator, AC, and the like), Cleaning Equipment (trash can, mop, broom and the like), Bathroom & Laundry (bathtub, towels, clothesline, washing machine, dryer and the like), Gardening Equipment (shovel, pot, fertilizer and its kind).

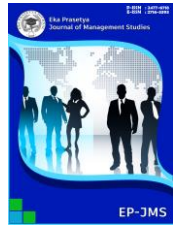
Categories or types of home appliances products are the impact of changes in consumer preferences and increased purchasing power. Factors such as lifestyle changes, new technology, and environmental trends have an impact on consumer preferences in choosing home appliance products. Therefore, consumer spending segmentation analysis is the key to understanding rapidly changing market dynamics and to designing more targeted marketing strategies.

This research aims to determine the segmentation of consumer spending in shopping for home appliances products. By understanding their preferences and needs, companies can increase their competitiveness and offer more value to consumers. Segmentation analysis is important not only for business profits, but also for empowering consumers to make informed



Jurnal Manajemen Bisnis Eka Prasetya

(Eka Prasetya Journal of Management Studies)



choices. This research will contribute to the development of sustainable marketing strategies that adapt to the changing dynamics of the Indonesian household equipment market so that companies can continue to adapt and meet the needs of the products most widely used by consumers (Kotler & Keller, 2016).

2. METHOD

This research is descriptive quantitative research using k-mean clustering in SPSS software. K-means clustering is a non-hierarchical cluster analysis algorithm. Cluster analysis is a tool for grouping data based on variables or features. The goal of k-means clustering, like other cluster methods, is to obtain groups of data by maximizing the similarity of characteristics within clusters and maximizing differences between clusters (Hussein, 2021).

The data collection technique used was to conduct a survey of respondents using a questionnaire on Google Form which was carried out by random sampling. From a total population of 10,000 a sample of 1% was taken, namely 100 respondents.

After the data is collected and processed by SPSS, the clustering results are then analyzed by looking at the average similarity of consumer spending in a relevant home appliances product category to find out which products have the highest consumer shared values so that researchers can segment product categories with consumer spending. from smallest to largest.

3. RESULT AND DISCUSSION

Based on the results of SPSS data processing, the following results are shown:

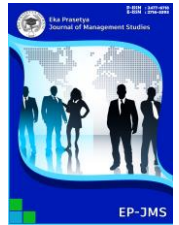
Tabel 1. Number of Cases in Each Cluster

Cluster	1	45.000
	2	2.000
	3	38.000
	4	2.000
	5	13.000
Valid		100.000
Missing		.000



Jurnal Manajemen Bisnis Eka Prasetya

(Eka Prasetya Journal of Management Studies)



Tabel 2. Final Cluster Centers

	1	2	3	4	5
Male	0,64	0,00	0,45	1,00	0,62
Female	0,36	1,00	0,55	0,00	0,38
Age (17-24)	0,02	0,00	0,11	0,00	0,08
Age (25-34)	0,31	0,50	0,39	0,00	0,46
Age (35-44)	0,40	0,00	0,29	0,50	0,23
Age (>45)	0,27	0,50	0,21	0,50	0,23
Jakarta	0,53	0,50	0,53	0,50	0,46
Non Jakarta	0,47	0,50	0,47	0,50	0,54
Self-Employed	0,13	0,00	0,11	0,50	0,23
Civil Servants	0,00	0,00	0,16	0,00	0,15
Student	0,00	0,00	0,00	0,00	0,00
Private Employee	0,67	1,00	0,47	0,50	0,38
Others	0,22	0,00	0,26	0,00	0,23
Marriage	0,82	1,00	0,68	1,00	0,69
Family Members	4,11	3,00	3,76	4,00	4,00
Income	20.404.444	17.600.000	9.239.474	16.750.000	13.638.462
Living Home Appliances	4.946.667	5.500.000	4.571.053	20.000.000	11.769.231
Kitchen Appliances	5.431.111	2.500.000	4.478.947	11.250.000	12.538.462
Electronic Appliances	5.408.889	6.250.000	5.321.053	22.500.000	12.400.000
Cleaning Equipment	4.442.222	16.000.000	3.717.105	5.000.000	12.061.538
Bathroom & Laundry	4.686.667	4.000.000	3.944.737	5.750.000	12.415.385
Gardening Equipment	3.844.444	1.000.000	2.436.842	1.500.000	13.423.077

The following are the results of identifying personas in each identified cluster that the cluster has become:

Cluster 1

In cluster 1, the identification of the persona is **Home Cooking families** with a profile category based on 64% men and 36% women. The highest age category is 35-44 years old, accounting for 40%. The majority of them live in Jakarta, accounting for 53%, and 67% are private employees. 82% of them are married. Meanwhile, based on the clustered identification of their expenditure, the average expenditure is below 6 million, with an average income of 20 million per month for the home appliances category. The highest expenditure in this cluster is on **kitchen appliances**.

Cluster 2

In Cluster 2, the identified persona is the **Hygiene Holic families** with a profile category based on 100% women. In terms of age, they are divided into two categories, 25-34 and >45 years old, each accounting for 50%. They also live both in Jakarta and outside Jakarta and are all private sector employees. Based on the clustered identification of their expenses, their average spending is below 7 million, and the highest expenditure among the clusters is on **cleaning equipment**, amounting to 16 million. Their average monthly income for each category of home appliances is 17 million.

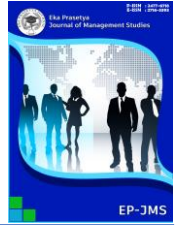
Cluster 3

In Cluster 3, the identified persona is **Frugal Living Families**, with a profile categorized as 45% male and 55% female. The highest age category is 25-34 years, accounting for 39% of the population. The majority reside in Jakarta, making up 53%, while 47% are private employees and 68% are married. Based on their clustered expenditure identification, their



Jurnal Manajemen Bisnis Eka Prasetya

(Eka Prasetya Journal of Management Studies)



average spending is below 6 million, with an average income range of 9 million per month. In terms of home appliances, the highest expenditure within this cluster is on **electronic appliances**.

Cluster 4

In cluster 4, the identification of personas is **high tech spending families** with a profile category based on 100% males, divided into two age categories of 35-44 and >45 years old, each accounting for 50%. They also reside in Jakarta and outside Jakarta, with 50% being private employees and entrepreneurs. Based on the clustered identification of their expenditures, the average spending is quite high for the 3 categories, with the highest expenditure among the categories being in **electronic appliances**, amounting to 22 million, followed by home living at 20 million. Their average income is above 16 million per month for each category of home appliances.

Cluster 5

In Cluster 5, the identified persona is **SpendThrift Families** with a profile category based on 62% male and 48% female. The highest age category is 25-34 years, accounting for 46%, and the majority live outside of Jakarta, with 54%. Additionally, 38% are private employees and 69% are married. Based on the clustered expenditure identification, their average spending is above 10 million, with an average income range above 12 million per month for each category of home appliances. The highest expenditure in this cluster is on **Gardening Equipment**, but the expenditure distribution does not differ significantly across the various categories of home appliances spending.

8P Marketing Mix in This Case

A marketing mix is holistic marketing. It's a framework to approach the marketing strategy for your products or services. And it centers on your target market. It helps you resonate with customers. And it gives direction to various activities and marketing management across departments in your company. With an effective marketing mix, you can achieve company goals with various elements working together (James, 2021). The following is the marketing mix in this case:

- **Price**

The following price in this section of the clustered resembles the price of middle-middle to up segmentation which ranged from the income based from 7 million to over 20 million. The following case above shows that each cluster of families have their own priorities when it comes to price preferences to spend, based also on their habits and members of families.

- **Product**

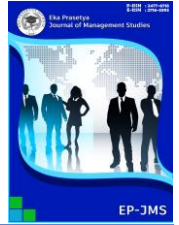
When it comes to products each respondent responded to the needs of the categorized appliances, this involving the connection between the needs of them and the supply of products which related to the qualities and durabilities of the current appliances offered to them.

- **Place**



Jurnal Manajemen Bisnis Eka Prasetya

(Eka Prasetya Journal of Management Studies)



The following place is where the categorization of home appliances is benchmarked from the Kawan Lama group “Ace Hardware”. Out of all questionnaire questions in the search of data information from random sampling being asked about their home appliances.

- **Promotion**

Digital promotion usually the company implements by using media social, SEO, SMS blast LBA and adsense towards the consumer those are in the perimeter of the locations.

- **People**

Demographics of people whose basic demand on this are various but mostly the need revolves around the house need. Mostly by the questionnaire reached it was more like a family type.

- **Process**

The delivery of products process is by ordering via online using ruparupa.com which is the official online based marketplace of ACE hardware. Consumers could order via online with pictures and description and resemblance the same between both of them, the products could be delivered with minimum payment. Or consumers could walk in and buy by themselves.

- **Performance**

The products offered have passed the Quality control which has the standard of SNI as well before it passed to distribute and sell around the outlets. And some of the products have their own quality assurance by giving the money back guarantee or returned with products.

- **Public Evidence**

Physical evidence when consumers buy online through the official market place is the digital pictures and description which will be the same as the products once it is delivered. And if the consumer bought through the walk-in method, they could feel and see the outlet and demo products are around there.

Cluster Target for Home Appliances Product

Based on the clustering results and the creation of personas for each cluster, the best cluster to focus on for selling home appliances is Cluster 5 with the persona of SpendThrift Families. This group consistently spends a significant amount on various home appliances throughout the year, with their average expenditure almost reaching their monthly income. To further narrow down the focus on the most popular category, the company can prioritize gardening products as they are the highest expenditure in this cluster, followed by kitchen appliances in second place and bathroom & laundry products in third place.

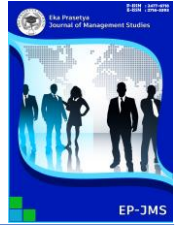
4. CONCLUSION

The survey results and subsequent analysis conducted using SPSS revealed several significant conclusions. Out of the total population surveyed, a mere 1% participated, leading to a final analysis that focused on men aged between 25 and 34, residing outside of Jakarta, and who were married. Interestingly, this particular group demonstrated a tendency to purchase various categories of home appliances, regardless of their income levels. Notably, cluster 5



Jurnal Manajemen Bisnis Eka Prasetya

(Eka Prasetya Journal of Management Studies)



exhibited a clear dominance, indicating that the highest average expenditure was observed in the garden equipment category.

Based on the data collected, it can be inferred that men in their productive years who are married exhibit a greater demand for household appliances when compared to individuals in other age groups. Interestingly, the level of income does not serve as a determining factor in this expenditure, as long as the income exceeds IDR 10,000,000,-. Moreover, the job status of this particular group reveals that the primary audience for these appliances are self-employed individuals or entrepreneurs.

REFERENCE

- Britannica. (2022). *Home appliance | Definition, History, Examples, & Facts*. Britannica. Retrieved November 10, 2023, from <https://www.britannica.com/technology/home-appliance>
- Cashbac. (n.d.). *Home Appliance - Arti, Jenis, Fungsi dan Manfaatnya untuk Kehidupan Sehari-hari*. Cashbac.com. Retrieved November 14, 2023, from <https://cashbac.com/blog/home-appliance-arti-jenis-fungsi-manfaat-untuk-kehidupan/>
- Chanel Cen. (2018, September 15). *Marketing Mix 4ps? 7ps? 8ps? – The Chanel Post*. The Chanel Post. Retrieved November 25, 2023, from <https://thechanelpost.wordpress.com/2018/09/15/marketing-mix-4ps-7ps-8ps/>
- Davey, L. (2023, August 22). *What Is Customer Segmentation? Definition and Guide (2024)*. Shopify. Retrieved November 11, 2023, from <https://www.shopify.com/id/blog/what-is-customer-segmentation>
- Hussein, S. (2021, October 13). *K-means Clustering: Pengertian, Metode Algoritma, Beserta Contoh*. geospasialis. Retrieved November 12, 2023, from <https://geospasialis.com/k-means-clustering/>
- James, J. (2021, September 5). *Your Simple Guide to the 8 Ps of Marketing*. 8-Bit Content. Retrieved November 26, 2023, from <https://www.8bitcontent.com/8-ps-of-marketing>
- Kotler, P., & Keller, K. L. (2016). *Marketing Management* (15th ed.). Pearson.
- Li, T. (2021, October 31). *Consumer Spending: Definition, Measurement, and Importance*. Investopedia. Retrieved November 14, 2023, from <https://www.investopedia.com/terms/c/consumer-spending.asp>
- Medialdea, R. (2022, April 21). *What is Home Appliances and Their Uses*. Home Appliance ideas. Retrieved November 14, 2023, from <https://homeapplianceideas.com/what-is-home-appliances-and-their-uses/>
- Putra, E. P. (2022, January 31). *Clustering Algoritma (K-Means) – School of Information Systems*. School of Information Systems. Retrieved November 10, 2023, from <https://sis.binus.ac.id/2022/01/31/clustering-algoritma-k-means/>