
PERCEPTUAL MAPPING OF MID END SMARTPHONE USING MULTIDIMENSIONAL SCALLING ANALYSIS (CASE : OPPO, SAMSUNG, XIAOMI, AND ASUS)*PEMETAAN PERSEPSI SMARTPHONE KELAS MENENGAH MENGGUNAKAN ANALISA MULTIDIMENSIONAL SCALLING (STUDI: OPPO, SAMSUNG, XIAOMI, DAN ASUS)*

By

Alvincent Malonda¹
Sifrid S. Pangemanan²¹²³Faculty of Economic and Business, International Business Administration, Management Program
Sam Ratulangi University

E-mail:

alvincmalonda@yahoo.com¹
sifridp_p@yahoo.com²

Abstract: But as time goes by, smartphone users become selective for selecting smartphone and some companies try to develop the smartphone with affordable price that can be reached by various circles of people. This increases competition among smartphone companies in creating affordable and high quality smartphone products. This research aims to find out the positioning on perceptual mapping of mid end smartphone products through quantitative approach from a potential customer in Manado by using the multi dimensional scalling. The sample of this research using non probability sampling with 120 respondents of consumers that has knowledge and experience of using various kind of top smartphone products. This research has indentified the positioning of Samsung, Oppo, Xiaomi, and Asus in customer mind using multi dimensional scale and considered by 6 smartphones attributes. These results show that Samsung became the most preferred brand of smartphone consumers compared to other smartphone brands. Samsung should maintain or improve the quality and give more innovative by provide new smartphone with affordable price so the consumers in all type will be more preferred with the Samsung than other brands.

Keywords: *perceptual mapping, positioning, multi dimensional scaling analysis*

Abstract: Namun seiring berjalannya waktu, pengguna smartphone menjadi selektif untuk memilih smartphone dan beberapa perusahaan mencoba mengembangkan smartphone dengan harga terjangkau yang dapat dijangkau oleh berbagai kalangan masyarakat. Hal ini meningkatkan persaingan di antara perusahaan-perusahaan smartphone dalam menciptakan produk-produk smartphone yang terjangkau dan berkualitas tinggi. Penelitian ini bertujuan untuk mengetahui dan menentukan posisi beberapa produk smartphone pada pemetaan persepsi produk smartphone kelas menengah melalui pendekatan dengan metode kuantitatif dari pelanggan potensial Manado dengan menggunakan analisis multi dimensional scaling. Sampel penelitian ini menggunakan sampel secara acak dengan 120 orang responden yang memiliki pengetahuan dan pengalaman menggunakan berbagai jenis produk smartphone terkenal. Penelitian ini telah mengidentifikasi posisi dan karakteristik antara Samsung, Oppo, Xiaomi, dan Asus dalam pikiran pelanggan menggunakan analisis multi dimensional scale dengan pertimbangan dengan 6 atribut smartphone. Hasil penelitian menunjukkan bahwa Samsung menjadi merek paling disukai konsumen smartphone dibandingkan dengan merek smartphone lainnya. Samsung sebaiknya mempertahankan atau meningkatkan kualitas dan memberikan inovasi lebih pada produk smartphone dengan harga yang terjangkau agar para konsumen dari berbagai lapisan masyarakat cenderung memilih Samsung daripada merek lain.

Kata Kunci : *pemetaan persepsi, posisi, analisa multi dimensional scaling*

INTRODUCTION

Research Background

Nowadays we known mobilephones as one of the media to communicate and has become an important element in every aspect of human activity. All the convenience that offered in the form of smartphones was supported to make life easier. This becomes a social phenomenon, although it can have a negative impact on the social side. Smartphone becomes a very necessary instrument in this era, so people become selective for selecting smartphone and there are many factors to consider.

Generally users come from several circles and ages, other smartphone companies try to develop the smartphone with a price that can be reached by various type and circles of people. This increased the competition among smartphone companies in terms to provide an affordable smartphone product with high quality to attract market.

According to the latest report from eMarketer, Currently Indonesia has already become the third-largest smartphone market in the Asia-Pacific region after China and India. In Indonesia, especially smartphones from China are growth every year as the the vendors (Samsung, Oppo, Asus, Huawei, Vivo, and Xiaomi) keep provides many variant of smartphone products with affordable price and offers the quality and high specifications. Mostly smartphone users in Indonesia tend to use smartphones in the low and middle class as IDC Indonesia Associate Market Analyst Risky Febrian said the various features available in smartphones sustained the growth in sales volume of smartphones. Consumers of smartphone in Indonesia are increasingly by the sales of smartphones in the middle price group and expected to remain in control of the largest market share in 2018. In the third quarter 2017, mid-end or mid-range phones with prices in the range of US \$ 200 to US \$ 400 (IDR 2 million – IDR 5 million) contribute 32% sales market of smartphones. It is predicted that the mid-range smartphone segment will continue to grow in 2018. (*kalimantanbisnis.com*)

Variety in one type of product often makes it difficult for consumers to make choices but attached by the attributes of a product, can help consumers know, classify, and identify weaknesses and advantages, the similarity and difference of the products. Therefore, will be needed the technique that can identify the opinions of consumers on attributes generally and form a perception of the consumer experience and knowledge. Perceptual Mapping is a graphic representation of respondent beliefs about the relationship between objects with respect to two or more dimension (Hair, Bush and Ortinau, 2000). Based on the research background above, this research aims to find out the positioning of mid-end smartphone brands through quantitative approach from customers of smartphone in Indonesia especially Manado by using the perceptual mapping technique and Multi dimensional scalling to define customers perception.

Research Objectives

To identify and find out the consumer perception mapping of several mid-end smartphone products based on smartphone attributes.

LITERATURE REVIEWS

Marketing

In preparing the research, researchers use theory of marketing to investigate further. In every human activity very closely related to marketing. According to Kotler and Keller (2009), marketing is a deal with identifying and meeting human and social needs. Marketing show that is done from the company to the make buyers interested in their products; marketing is also an effort of an entrepreneur or acompany to make a profit for the business. Marketing is not easy to do because now has more competition. However, with a wide variety of ideas that emerged from the producers in a business activity, then the idea must be put forward to attract the attention of consumers. Marketing is a goal of the company to provide satisfaction to consumers and creating good cooperation between producers and consumers, so as to create a situation in the producers and consumers benefit each other. And the desire of companies that have been planned if it is to achieve a goal can also be met through the marketing process. Lamb, Hair, and McDaniel (2014) stated that: "Marketing is the activity, set of institution, and process for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large."

Consumer Behavior

Consumer Behaviour or the buyer behaviour is referred to the behaviour that is displayed by the individual while they are buying, consuming, or disposing any particular product or services. Blackwell, Miniard, and Engel (2006) explained: "Actions that directly involved in obtaining, consuming and spent the

products and services, including the decision process and following this action precedes". Loudon and Albert (1993), explained: "Consumer behavior is the decision process and physical activity individuals involved in evaluating, obtaining, using or providing goods and services acquired". Consumer behavior focuses on how individuals make decisions, to spend their available resources (time, money, effort) on consumption-related items. That includes what they buy, why they buy it, when they buy it, where they buy it, how often they use it, how they evaluate it after the purchase, the impact of such evaluations on future purchases, and how they dispose of it"

Positioning

Positioning is a term which was presented in the article, whose topic is "Positioning is a Game Which People Play in Impersonators Market of Today." The article is in the book which is named "Industrial Marketing" written by Al Ries and Jack Trout (1969) in Yumusak, Gokhan, and Gungordu (2016). Afterwards, this article was transformed to the book which is named "Positioning: War for your Brain". Reis and Trout (Yumusak, Gokhan, Gungordu, 2016) stated that an improvement is generated from three stages which are product age, image age and positioning age (Congram and Friedman, 1991). The period in 1970s is called the "positioning age". This period occurred by increasing the competitive environment. In this competitive environment, the companies were involved into the process which provides products or brands of the companies that was perceived in a different way from product or brands of the companies' competitors (Uner and Alkibay, 2001). A key to positioning a product effectively is the perceptions of consumers. In determining a product's position and the preferences of consumers, companies obtain three types of data from consumers (Crane et al, 2006) such as, Identification of the important attributes for a product class Judgments of existing brands with respect to these important attributes ratings of an "ideal" brand's attributes. Brand positioning is regarded as a key tool for brand implementation in competitive markets. Positioning is the act of designing an organization's offering and image to occupy a distinctive place in the target market's mind (Kotler, 2000).

Perceptual Mapping

A perceptual map is of the visual technique designed to show how the average target market consumer understands the positioning of the competing products in the marketplace. In other words, it is a tool that attempts to map the consumer's perceptions and understandings in a diagram. The word 'perceptual' comes from the word 'perception', which basically refers to the consumers' understanding of the competing products and their associated attributes. The most common presentation format for a perceptual map is to use two determinant attributes as the X and Y axes of a graph, however there are also other formats that are sometimes used. Kardes, Cronley, Cline (2011) in Market Segmentation Study Guide (Fripp, 2012) stated "Perceptual maps measure the way products are positioned in the minds of consumers and show these perceptions on a graph whose axes are formed by product attributes". Ferrel and Hartline in Marketing Study Guide (Fripp, 2012) stated "a perceptual map represents customer perceptions and preferences spatially by means of a visual display". The information is visually presented on some form of graph or display. And that a perceptual map is designed to examine consumer perceptions and understanding, primarily of products and their associated positioning. Perceptual mapping produces a picture or map of market. The map shows how products/services are perceived on specific features or attributes. In this research will define the perceptual mapping of mid end smartphone considered on the elements of a physic of the smartphones.

Previous Research

Yumusak, Gokhan, Gungordu (2016) Perceptual Maps of Smartphones with Multi Dimensional Scaling Analysis. In this study, it will be observed that among five smartphone brands (iPhone, Samsung, LG, HTC, Sony), which brand is the most preferred by the students of Gazi University. We will investigate the preferences of the students in consideration of the five smartphones' specifications and develop the perceptual map of five smartphones brands. From this point, this study is structured as follows: in Section 2 we present a basic literature review to show importance of positioning and perceptual maps and lastly, Section 3 illustrate the development process of the perceptual map with using Multi-Dimensional Scaling Analysis.

Baron and Tamar (2017) Positions of Mobile Brands on University Student Mind. This study aims at determining positions of mobile phone brands on Turkish university students' mind. Accordingly brand, brand positioning concepts, and brand positioning strategies explained after positions of mobile phone brands were presented through perceptual maps. The aim of this study is determine the perception of Turkish university students of mobile phone brands. In this connection 5 brands Nokia, Samsung, GM, LG and Sony Ericsson

determined according to sales amount of mobile phones in Turkey in 2009. 417 respondents were determined by convenience sampling and totally 417 questionnaire responded by several university students. Data were analyze by Multi-Dimensional Scaling (MDS) and results showed by perceptual maps.

Nigam and Rajiv (2011) Attributes based on Perceptual Mapping of Prepaid Mobile Phone Operator An Empirical Investigation Among Management Graduates in Central Haryana. This study investigates how consumers associate the attributes in different dimensions with reference to leading service providers. Operators do not differ significantly with regard to attributes. However, they vary in their promotional campaigning and years of existence in the market.

Aswin and Wahidun (2016) titled Analysis of Product Attributes of Samsung and Asus Using Multi Dimensional Scale Analysis. This study also discusses that samsung is superior to Asus based on 9 specified attributes. this study shows that Asus as a new brand succeeded under samsung by choosing a market selection strategy that only concentrates on selling smartphones and it's the same market also selected by samsung, supported by the theory of Tjiptono and Chandra (2012) which says that the targeting strategy is the process of evaluating and selecting one or more of the most appealing market segments that fit the company's specific marketing program.

Conceptual Framework

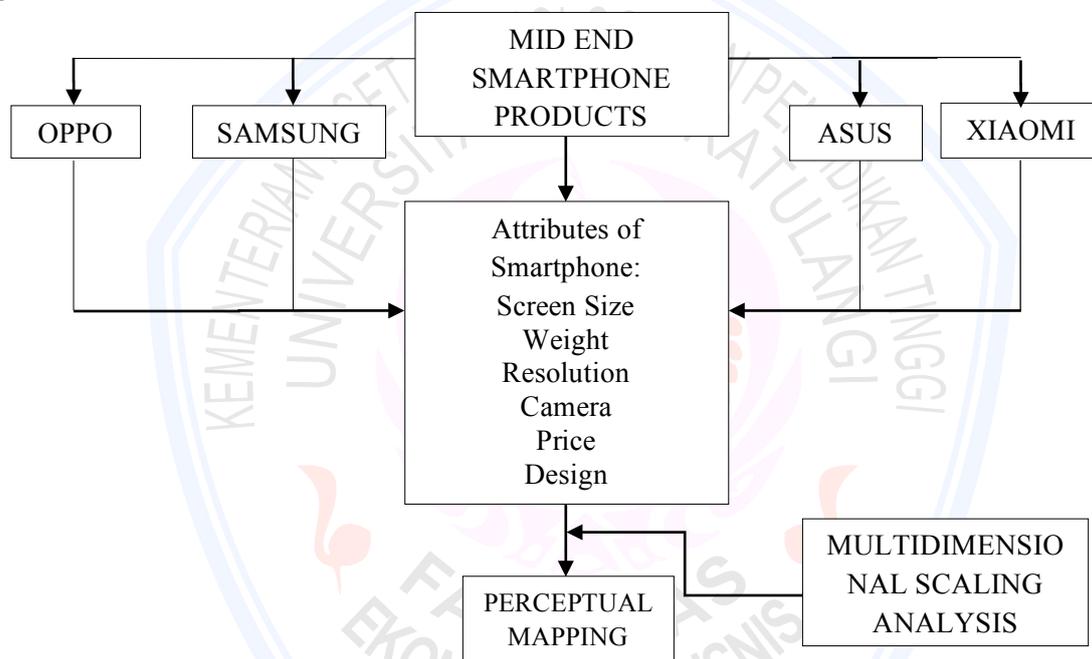


Figure 1. Conceptual Framework
 Source: Data Analysis Method (2017)

RESEARCH METHODS

Research Paradigm

This research is comparative research, which is a study by collecting data from several settings or organizations. In this case is the Perceptual Mapping toward mid-end smartphone product attributes of smartphones and research using quantitative research method because it uses a questionnaire as a tool to collect the data from respondent.

Place and Time of Research

The research is conducted in Manado and occurred in users of mid end Smartphone. The time of the survey will begin in February 2018 and preparation of a final report will be conducted from March 2018 – May 2018.

Research Procedure

This research have a several steps are the researcher study about positioning of smartphones brands based on product attributes. In every attributes the researcher make statement for the questionnaire and spread the questionnaire to respondent who have experience or knowledge about used mid end smartphone brands such as Samsung, Oppo, Asus and Xiaomi. The data of this research collected using a survey questionnaire. The researcher used Likert scale for deter mine if the respondents agreed or disagreed with the statement. Processing the data by use perceptual mapping will show up the location of the subject and represented customer, then analyze with Multi Dimensional analysis to grouping object based on similarity and equity. The last the researcher can get the result of the data and write the report.

Population and Sample

This section will show the population, which is known as a complete set of elements (persons or objects) that possess some common characteristic defined by the sampling criteria established by the researcher. This section also describes the selected elements (people or objects) chosen for participation in a study; people are referred to as subjects or participants, known as sample.

Data Collection Method

In this study, data collection techniques conducted by the researcher are as follows:

1. Primary data

Primary data is data originated by the researcher specifically to address the research problem. Primary data is the information obtained first-hand by the researcher on the variables of interest for the specific purpose of the study. This research gets the primary data from the result of questionnaires. Questionnaires are distributed to respondents so they can respond directly on the questionnaire. Respondents were selected by applying convenient random sampling technique.

2. Secondary Data

The data to be collected may be primary or secondary or both (Sekaran and Bougie, 2010). The research study requires researcher secondary data collected through the existing sources to support the research. Secondary analysis is the scrutiny of available data by previous studies or other researchers who probably have not been involved in the collection of those data. The secondary data is the data that have already been gathered by researcher from journals and other information available from any source which useful in this research. This secondary data were used in the background, literature review, theoretical review, and discussions.

Analysis Method

The process of data analysis conducted by researchers is segmented into following the steps:

1. Validity

Validity test is need for a research to test the validity of the data gathered. A test of validity described how the questionnaire (question or item) are truly able to measure what is measured, based on theories and experts. From several analysis tools test validity that exists, researchers choose to use pearson correlation product moment to test the validity of the data obtained.

2. Reliability Test

Reliability test conducted to make sure that there no repetition. The reliability of a measure is achieved when it consistently, and without bias, measure the concepts it is supposed to measure. Reliability is established either through test-re-test where the same test administered to the same respondents at different times obtains the same results or parallel form reliability when the same test with different wordings or sequence of questions also results in the same data.

3. Multi Dimensional Scaling Analysis

The data analysis technique which used in this research is Multi Dimensional scaling analysis, using SPSS. Multi Dimensional Scaling Analysis is a procedure used to describe perception in a display. Multidimensional scaling analysis is a procedure used to describe perception in a display. The concept and scope of multidimensional scaling (MDS) in marketing research and outlines a variety of applications; outlining the steps to be followed in the multidimensional scaling of perceptual data, including the formulation of the problem, getting the input data, selecting MDS procedures, decide the number of dimensions, give interpretation to the configuration and provide an assessment (to asses) reliability and validity, describes scaling preference

data; explain correspondence analysis and goodness and weakness; understand the relationship between MDS, discriminant analysis and factor analysis.

Multi Dimensional Scaling (MDS) is a series of techniques that helps the analyst to identify key dimensions underlying respondents' evaluations of objects. It is often used in the marketing to identify key dimensions underlying customer evaluations of products, services, or companies. Analysis of Multi Dimensional Scaling (MDS) is a technique that can be used multiple variables to determine the position of other objects based on similarity assessment. MDS is also called the perceptual Map.

MDS associated with Map-making to describe the position of an object with other objects based on the similarity of these objects. The concept and scope of Multi Dimensional scaling (MDS) in marketing research and outlines a variety of applications; outlining the steps to be followed in the Multi Dimensional scaling of perceptual data, including the formulation of the problem, getting the input data, selecting MDS procedures, decide the number of dimensions, give interpretation to the configuration and provide an assessment (to asses) reliability and validity, describes scaling preference data, explain correspondence analysis and goodness and weakness; understand the relationship between MDS, discriminant analysis and factor analysis. MDS is used to determine the relationship interdependence between variable or data. This relationship is not known through the reduction or grouping variable, but by comparing the variables that exist in every object in question by using a perceptual map.

MDS is a basic concept mapping. Multi Dimensional scaling analysis is a class of procedures for presenting the perceptions and preferences of customers using spatial impressions can be seen (a visual display). Perception or the relationship between psychological stimulus is shown as the geographical relationship between the points in a Multi Dimensional space.

4. Consumers Preference Analysis

The data analysis technique in this research is using Modus that is by calculating each frequency from the indicator then classifying in the rank result or ranking of the most value or often value appear obtained by asking respondents to ranking a brand is based on indicators offered, ranging from the most preferred brands to the least favored brands. This method is called the detect ranking. In this case, the judgment is to rank from 1 to 4. Then the most preferred brand of respondents is ranked 1st, and ranking 2. In this case the indicator offered is 6, the preference data will be generated into 6 order preference from 6 indicators.

RESULT AND DISCUSSION

Result

Multi Dimensional Scaling Analysis

The questionnaires distributed by the researcher all amounted to 120 questionnaires and aimed the consumer that used smartphone products.

Perceptual Mapping

To analyze the perceptual mapping of Oppo, Samsung, Xiaomi, and Asus smartphone product uses Multi Dimensional Scaling Analysis (MDS) with indicators screen size, weight, resolution, camera, price and design. The perceptual mapping of Oppo, Samsung, Xiaomi, and Asus smartphone product based on screen size, the indicators can be seen on the results of the calculation as follows:

Table 1. Perceptual Mapping of Attribute Screen Size

Stimulus Coordinates		Dimension	
Stimulus Number	Stimulus Name	1	2
1.	OPPO	1.9677	-1.4164
2.	Samsung	1.9554	-2.257
3.	Xiaomi	-0.3003	-2.4996
4	Asus	1.9410	-2,2536

Source: Data Processed (2018)

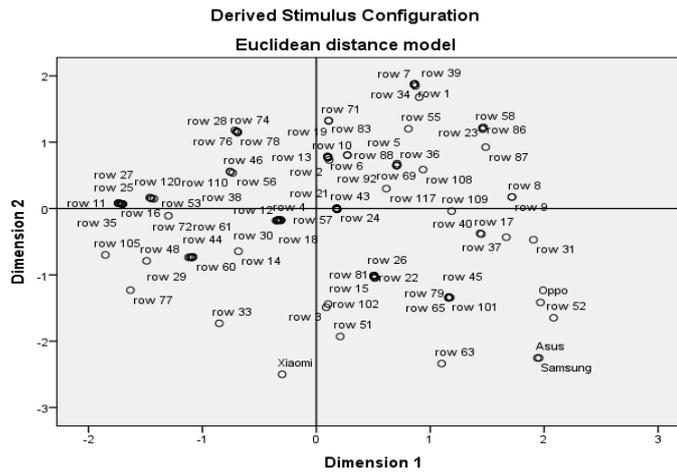


Figure 2. Perceptual Map of Attribute Screen Size
 Source: IBM SPSS Output (2018)

Based on the position above, there is the explanation as follows:

1. Oppo products are in quadrant IV, where Oppo at dimension 1 (1.9677) and dimension 2 (-1.4164). So consumers give the perception that Oppo has a different in terms of Screen Size with Xiaomi that located at quadrant III but has similarity with Asus and Samsung.
2. Samsung products are located in quadrant 4 at dimension 1 (1.9554) and dimension 2 (-2.257).Where the map show the position of Samsung product is far from Xiaomi product position .So it is not influential.
3. Xiaomi products are located in quadrant 3 at dimension 1 (-0.3003) and dimension 2 (-2.4996).The map show the position of Xiaomi product is far from other product position that means Xiaomi is different compared with other brands as the map showed.
4. Asus products are located in quadrant 4 at dimension 1 (1.9410) and dimension 2 (-2.2536). The distance with Xiaomi in quadrant III defined Asus is different in term of Screen Size.

Preference Analysis

From tabulation the preference data smartphone brands selected is based on attributes offered using statistical descriptive calculations (Modus). From the results of the calculation frequency based on attributes the value of Modus show:

Table 2. Ranking Frequency of Attributes

Smartphoe Product	Attributes						Ranking
	Screen Size	Weight	Reso	Camera	Price	Design	
Samsung	2	2	2	2	2	2	I
Oppo	2	3	2	2	2	2	II
Asus	2	2	2	2	2	3	III
Xiaomi	3	3	3	3	2	2	IV

Source: Data Processed (2018)

In the Table 2 shows that the calculation of Modus of each attributes of the smartphone products in can be describe as follows:

1. Regarding from the consumer's preference of Screen size, Samsung Products is the top rank and it is become an attraction to the consumer because Samsung has big name of quality than Oppo, asus, or Xiaomi as smartphone. Although currently all vendor smartphone already started support by full screen tech, consumers still get interested to Samsung products. Oppo in the second rank with 53, on third are Asus, and Xiaomi at last position.
2. According to tabulation of data calculated with Modus it is seen that Samsung occupies the first position which means in terms of Weight. The result defined most of consumer tend to choose Samsung than other

smartphone because Samsung products are so comfortable to held anywhere. In facts currently, Samsung started to change the component from plastic to metal. Asus in the second position, Oppo in third, and last position occupied by Xiaomi

3. In the consumer preferences of Resolution attribute, Samsung are in the first position with 53 respondents followed by Oppo in second position. Asus in third place, and last place occupied Xiaomi. This is proving that Samsung products are preferable to consumers compared with other product in attribute of resolution.
4. Regarding the consumer preferences of Camera attribute, most of consumers tend to like Samsung which mean Samsung camera has many advantages over other brands in taking photo or video during the day and night. Oppo in the second rank, Asus in third position, and last position occupied Xiaomi.
5. Based on the consumer preferences of Price attribute, consumer biased to choose Xiaomi as smartphone with affordable combined various specification with highest respondent. In the second rank there is Oppo, followed by Samsung in third, And Asus in last position.
6. For attribute Design smartphone Samsung is in the first ranking position which means, consumer are more interested to Samsung because Samsung smartphones products has its own appeal for co consumers to attract consumers. In fact Samsung has many variant of smartphone products that is offered for all type of consumers. The second position is occupied by Oppo, Xiaomi in third, and fourth position is Asus.

From the results of consumer preferences above the rank or the product most preferred by consumers based on the attributes of Screen Size, Weight, Resolution, Camera, Price and Design as follows:

1. Samsung
2. Oppo
3. Asus
4. Xiaomi

Discussion

After doing and examining the research by processing the data obtained from the questionnaire that is spread to respondents, then we got:

Based on the characteristics of the respondents, the respondents studied mostly came from women. Most of the respondents studied in this research were from 18 to 29 years olds. Most of the respondents studied in this research on average have income below Rp1.500.000. The respondents studied in this research mostly come from those with high school education background. Most of the respondents from this study have a profession as a student.

The results implicitly have answered the objectives proposed in this research is to find out the perceptual mapping of smartphone mid end products in this case Samsung, Oppo, Asus and Xiaomi. Therefore, Samsung is the most favored smartphone product by consumers based on the attributes. These results show that Samsung became the most preferred brand of smartphone consumers compared to other smartphone brands. Also, to take a look to everyday life of smartphone users, especially those who are in their teenage years or young adults, most of them using Samsung as their favorite android smartphone, and Apple iPhone when it comes to non-android users. Plus, the brand of Samsung is rather big in Asia continent because Samsung itself was found by Asian producer which is South Korea. And to think of South Korea, there is no doubt about the quality of their products since South Korea already is a developed country and one of the biggest countries with the best developed business on earth.

From the results of previous research obtained that the Perceptual maps of smartphones with multi-dimensional scaling analysis, it will be observed that among five smartphone brands (iPhone, Samsung, LG, HTC, Sony), which is the most preferred by the students of Gazi University. The calculations show that the difference in consumer perceptions based on certain indicators can establish a competitive position map of the product is very different, so the consumers can state establish of each brand product has a significant difference. But, even though the differences of each product can make a competition over one another, there will always be one that can beat the other competitors, especially the ones that made by developed country. People that are choosing products from developed countries tend to go over the qualities of the products, because usually, the quality of product from developed countries is rather good to compare with the products from developing countries because developed countries always have the best technology especially when it comes to smartphones and computers.

CONCLUSION AND RECOMMENDATION

Conclusions

After examining the result researcher get from the processed data, the perceptual mapping of mid-end smartphone product based on attributes using Multi Dimensional scaling analysis can be describe below:

1. The consumers perception based on the results of screen size attribute can be seen that Samsung are the most preferred brand, followed by Oppo, Asus and Xiaomi occured in last position.
2. The consumers perception based on the results of weight attribute it can be seen that Samsung are the most preferred brand, Xiaomi in the 2nd place, Asus in thrid and Oppo occured in last position.
3. The consumers perception based on the results of resolution attribute it can be seen that Samsung are the most preferred than other brands in this term, Oppo in the 2nd place, Asus in thrid and Xiaomi occured in last position.
4. The consumers perception based on the results of camera attribute it can be seen that Samsung are the most preferred than other brands , Oppo in the 2nd place, Asus in 3rd and Xiaomi occured in last position.
5. The consumers perception based on the results of price attribute it can be seen that Xiaomi are the most preferred than other brands, Oppo in the 2nd place, Samsung in 3rd and Asus occured in last position.
6. The consumers perception based on the results of camera attribute it can be seen that Samsung are the most preferred brand , Oppo in the 2nd place, Xiaomi in 3rd and Asus occured in last position.

Recommendation

Here are some suggestions if it can provide input for the development of the company

1. Oppo actually is a brand new in Indonesia compared to Samsung actually Oppo has a great prospect in the future as they can keep up the competition with other various brand. In every year Oppo presenting new smartphone in order to maintain their market keep competitive.
2. Samsung in the first position should to maintain or improve the quality and give more innovative by presenting new smartphone with affordable price so the consumers in all type will be more loyal with the samsung.
3. Xiaomi products currently disrupt the market by selling smartphone with affordable price but already supported with high specifications. This is a form of innovation by Xiaomi to get consumer in mid lower class.
4. Asus occupied in third position, has own market in Indonesia. Asus should be more focus on marketing sales promotion strategy to attract of type consumers and keep improve the research to provide more variety of smartphone products with better components so consumers will be interest.

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