

Seller Perception Analysis on Purchase Decision Using Analytical Hierarchy Process Method (Case Study: ABC Store)

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Abstract

Purchasing decisions can be used as a competitive advantage for companies or retailer. Purchasing decisions are important aspects of consumer behavior to determine or make a decision whether to buy a product or not. Price, product quality, service quality, and social media promotion can be good strategies to win over existing competitors. There are many studies on consumer perception, and a few studies on seller perception. Therefore, this study aims to analyze the effect of price, product quality, service quality, and social media promotion on purchasing decisions. This study measuring the perceptions of the sellers at ABC Store on purchasing decisions of smartphone and gadget accessories. The questionnaires in this study are given to sellers and marketing managers who are experienced in selling the product. The analysis conducted using Analytical Hierarchy Process (AHP). The results of this study indicate that from the perception of the seller, the order of importance that influences the purchase decision for gadget is social media promotion 30%, price 28%, product quality 26%, and lastly service quality 15%.

Keywords : *seller perception, quality, price, service quality, social media promotion, and purchasing decision*

INTRODUCTION

The use of digital technology has increased significantly in the business world. Many people are interested in owning a smartphone. This increases the demand for smartphone gadgets in the market. An increase in demand for gadgets will certainly influence an increase in demand for gadget accessories. According to Heryanto (2015), one of them is that competition forgets their potential and retains them, a challenge faced by companies when it comes to promoting their products. According to Ernawati (2019), understanding the purchasing decision process is not easy and consumers consider many factors such as design, color, size, packaging, price, service and quality when choosing a product. From the background of the problems in this study, the researchers were interested in studying more about the influence of product quality, price, quality, service, and social media promotion on purchasing decisions as seen from consumer perceptions and ABC Store management.

This study aims to analyze the effect of product quality, price, service quality, and social media promotion on purchasing decisions at ABC store. Measuring the assessment of the seller's perception of the variables of product quality, price, service quality, and social media promotion and which variables are more important to purchasing decisions.

LITERATURE REVIEW

According to Thamrin & Francis (2016), marketing includes activities such as observing and understanding customer needs, planning and executing product development, determining optimal pricing strategies, and promoting and distributing products. Kotler & Armstrong's (2007) marketing mix is a set of marketing tools used to achieve a marketing objective from time to time in a target market. The 4Ps include product, price, location and promotion. These are aspects the company manages when creating an integrated marketing mix. The company plans, conducts and manages marketing research to determine the optimal marketing strategy and mix. The study focuses on purchase decisions regarding product quality, price, quality of service, and the impact of social media promotion variables. Therefore, relevant methodological literature was reviewed in this section.

According to Kotler & Armstrong (2013), product quality indicates a product's reliability in performing its functions, including reliability, ease of use, durability, accuracy, and repairability. Product quality refers to the ability of a product to perform the function specified by the user. According to Tjiptono (2010), product quality indicators include performance, additional features, reliability, specification compliance, durability, and aesthetics. According to Tjiptono (2012), price is a seller's estimate of product usability, product quality, advertising-generated images, product availability, and product services. According to Kotler & Keller (2012), indicators that characterize prices include: Price affordability, price compatibility with product quality, price compatibility with price competitiveness and advantages. According to Tileng et al. (2013), service quality is the desired level of efficiency and the level of efficiency managed by an organization to meet customer needs. Paraslamani et al. (1988) found that his five main dimensions of service quality were: Specificity, reliability, responsiveness, assurance, empathy. According to Adrian (2008), promotion defines actions aimed at increasing sales. According to Indriyani & Suri (2020), the purpose of visual communication can be achieved by running promotions on social networks to encourage consumers to make decisions and purchase valuable products and services. According to Kotler & Armstrong (2007), advertising metrics via social media are: Action reach, number of social media updates, quality of news.

When it comes to consumer behavior, there are many influences that influence an individual's decision to purchase a product. B. Promotions, discounts, peer influence, and other factors such as economic and technical considerations. Consumer purchase decisions are defined as described by Tjiptono (2010).

"Information about product benefits is tailored to create pleasure and comfort that can influence purchasing thoughts and lead to purchasing decisions." Loudon & Bitta (2010), on the other hand, define the purchase decision as: "Decisions stemming from incentives that can reinforce strong past experiences in the process of seeking information from consumers' past experiences to strengthen or weaken their choices," according to some of these experts. , consumer purchasing decisions are influenced by their willingness to purchase due to a variety of influencing factors such as family income, desired price, and usefulness of the product in question.

METHOD

This study uses two of his data sources: primary data and secondary data. The main data collection techniques were through direct observation and interviews with his website, staff and sales representatives of the ABC store, and distribution of questionnaires to marketing staff using the AHP scale. Secondary data are obtained by gathering information from academic journals and previous studies related to the research topic.

This study uses the analytical hierarchical process (AHP) method. The AHP method is performed using Microsoft Excel software.

According to Handoko et al. (2019) the AHP method is used as data to support research methods to test the level of importance and identify which factors or variables are more important that influence purchasing decisions.

According to Apak et al. (2012) The steps in conducting AHP are as follows:

1. Identification of problems.
2. Consider all goals and expected results by expanding the goals.
3. Identify criteria or sub-criteria.
4. Build a problem structure that includes objectives, criteria or sub-criteria, and available alternatives.
5. Make a pairwise comparison matrix to obtain as many as $n \times [(n-1)/2]$ pieces of research, where n is the number of elements being compared like equation (2) where n is the number of factors.

$$A = \begin{bmatrix} a_{11} & a_{12} & \dots & a_{1n} \\ a_{21} & a_{22} & \dots & a_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ a_{n1} & a_{n2} & \dots & a_{nn} \end{bmatrix} \tag{2}$$

Table 2.1. Pairwise Comparison Scale

Interest Intensity	Information
1	Both aspects are equally important
3	One aspect is slightly more important than the other
5	One aspect is more important than the other elements
7	One aspect is very important than other elements
9	One aspect is absolutely more important than the other elements
2,4,6,8	Values between two adjacent judgment values
opposite	If activity I gets one point compared to activity j, then j has the opposite value compared to i.

Source: Munthafa & Mubarak (2017)

Then, the comparison matrix is assessed with the following steps.

- a. Perform normalization with equations (3) and (4)

$$A_1 = \begin{bmatrix} a_{11} & a_{12} & \dots & a_{1n} \\ a_{21} & a_{22} & \dots & a_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ a_{n1} & a_{n2} & \dots & a_{nn} \end{bmatrix} \quad (3)$$

$$a_{ij}' = \frac{a_{ij}}{\sum_{i=1}^n a_{ij}}$$

And, for (4) $i, j = 1, 2, \dots, n$.

- b. Calculating the eigen values and eigen vectors based on equations (5) (6), and (7) where is the eigenvalue of the vector, is the eigenvalue of , and lamda max is the largest eigenvalue. $w w_i I$

$$w = \begin{bmatrix} w_1 \\ w_2 \\ \vdots \\ w_n \end{bmatrix}, \text{ And } w_i = \frac{\sum_{i=1}^n a_{ij}'}{n} \text{ for (5) } i, j = 1, 2, \dots, n.$$

$$w' = Aw = \begin{bmatrix} w_1' \\ w_2' \\ \vdots \\ w_n' \end{bmatrix} \quad (6)$$

$$\text{And, } \lambda_{\max} = \frac{1}{n} \left(\frac{w_1'}{w_1} + \frac{w_2'}{w_2} + \dots + \frac{w_n'}{w_n} \right) \quad (7)$$

6. Perform calculations of the consistency index (CI) and consistency ratio (CR) based on the Random Index suggested by Saaty (2005) and equation (8).

Table 2.2. RandomIndex

N	2	3	4	5	6	7	8	9	10
RI	0	0.52	0.89	1.11	1.25	1.35	1.40	1.45	1.49

Source:Apak et al. (2012)

$$\text{with (8) } CI = (\tau_{max} - n)(n - 1) \text{ dan } CR = CI/RI$$

7. Determining the value of CR, $CR > 0.1$ for matrices larger than 4x4 indicates that research is inconsistent. The comparison matrix must be revised by the decision maker. Normalized values can be used to determine CR suitability.
- The hierarchy is consistent if $CI = 0$
 - If $CR < 0.1$, the hierarchy is fairly consistent
 - If $CR > 0.1$, the hierarchy is highly inconsistent

RESULTS AND DISCUSSION

The calculation of AHP based on management perceptions is carried out based on the following seven steps:

- Problem definition**
 The problem to be solved in this study is the unavailability of information regarding the factors or variables that influence the decision to purchase gadget accessories at ABC Store according to the management's perception of ABC Store .
- Objective**
 The purpose of the AHP analysis is to determine the level of importance of the factors or variables that influence the decision to purchase gadget accessories at ABC Store according to the management's perception of ABC Store .
- Identify criteria**

The criteria or factors or variables used in the AHP analysis in this study are product quality, price, service quality, and social media promotion.

d. Problem Structure / Weighted Hierarchical Structure

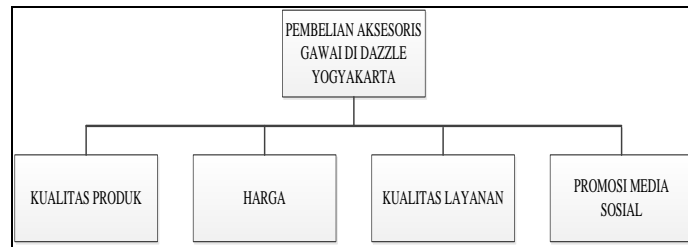


Figure 4.4. Problem Structure
 Source: Processed data (2022)

e. Comparison Matrix

In equation (2) in compiling the pairwise comparison matrix for numerical analysis, the results of value judgments from the sales supervisor are used with the AHP scale that has been determined according to Table 3.2. Thus, the pairwise comparison matrix is obtained as follows.

Table 4.12. Pairwise Comparison Matrix of Seller 1

Seller 1				
Criteria	Product quality	Price	Service Quality	Social Media Promotion
Product quality	1.00	0.50	0.50	2.00
Price	2.00	1.00	0.50	3.00
Service Quality	2.00	2.00	1.00	0.50
Social Media Promotion	0.50	0.30	2.00	1.00

Source: Processed data (2022)

Table 4.13. Pairwise Comparison Matrix of Seller 2

Seller 2				
Criteria	Product quality	Price	Service Quality	Social Media Promotion
Product quality	1.00	4.00	2.00	0.50
Price	0.25	1.00	2.00	0.50
Service Quality	0.50	0.50	1.00	2.00
Social Media Promotion	2.00	2.00	0.50	1.00

Source: Processed data (2022)

Table 4.14. Pairwise Comparison Matrix of Seller 3

Seller 3				
Criteria	Product quality	Price	Service Quality	Social Media Promotion
Product quality	1.00	0.50	2.00	0.50
Price	2.00	1.00	2.00	0.50
Service Quality	0.50	0.50	1.00	0.50
Social Media Promotion	2.00	0.50	2.00	1.00

Source: Processed data (2022)

Table 4.15. Pairwise Comparison Matrix of All Seller

Combination of all Seller				
Criteria	Product quality	Price	Service Quality	Social Media Promotion
Product quality	1.00	1.00	2.00	0.50
Price	1.00	1.00	2.00	0.75
Service Quality	0.50	0.50	1.00	0.50
Social Media Promotion	2.00	0.30	2.00	1.00

Source: Processed data (2022)

Based on the correlation matrix in Table 4.15. above known comparison of the level of importance between one factor with other factors. For example, the result of a comparison of product quality with product quality is 1, meaning that they are equally important. The comparison between product quality and price is 1, meaning that they are equally important. The comparison between product quality and service quality is 2, meaning that product quality is considered 2 times more important than service quality or conversely service quality is considered 0.5 times less important than product quality. Comparison of product quality with social media promotion is 0.5, meaning that product quality is considered 0.5 times less important than social media promotion or conversely social media promotion is considered 2 times more important than product quality. Meanwhile, the number per criterion column is 4.50; 2.80; 7;00; and 2.75.

The next step is to normalize the matrix, with the following calculations:

- 1) Normalize the pairwise comparison matrices and calculate the vector eigenvalues
 After the pairwise comparison matrix has been determined, the next step is to normalize the pairwise comparison matrix according to equations (3), (4), and equation (5) to calculate the eigenvectors. Here are the methods and results of the determination.

$$a_{ij} = \frac{a_{ij}}{\sum a_i} \rightarrow \text{comparison of product quality with product quality} = \frac{1}{4,5} = 0,22$$

Table 4.16. Normalization of Management Perception Pairwise Comparison Matrix

Criteria	Product quality	Price	Service Quality	Social Media Promotion	Average (Priority)
Product quality	0.22	0.36	0.29	0.18	0.26
Price	0.22	0.36	0.29	0.27	0.28
Service Quality	0.11	0.18	0.14	0.18	0.15
Social Media Promotion	0.44	0.11	0.29	0.36	0.30
<i>Eigen Vector</i>					1.00

Source: Processed data (2022)

- 2) Calculating the eigenvalues (λ_{max}) based on equations (6) and (7). Matrix calculations on pairwise comparisons are multiplied by the weighting of each criterion (Aw).

	A		W		AW
	1.00 1.00 2.00 0.50	x	0.26		0.262 0.262 0.523 0.131
	1.00 1.00 2.00 0.75		0.28	=	0.284 0.284 0.569 0.213
	0.50 0.50 1.00 0.50		0.15		0.077 0.077 0.154 0.077
	2.00 0.30 2.00 1.00		0.30		0.600 0.090 0.600 0.300
	AW		W		AW/W
	1.178	/	0.26		4.5
	1.351		0.28	=	4.75
	0.384		0.15		2.5
	1.591		0.30		5.3

$$\lambda_{max} \text{ (average of Aw/W)} = \frac{4,5+4,75+2,5+5,3}{4} = \frac{17,05}{4} = 4,2625$$

- f. Determine the Consistency Index (CI) value

Once the eigen values are known, the next step is to determine the CI and CR values with equation (8), namely:

$$CI = \frac{(\lambda \max - n)}{n - 1} = \frac{(4,2625 - 4)}{4 - 1} = \frac{0,2625}{3} = 0,0875$$

g. Determination of Consistency Ratio (CR) value

The calculation of the CR value is with equation (8) and it is known that it is in accordance with the provisions of Table 2.3 with an RI value of 0.89 for N of 4 due to involving 4 factors, AHP analysis of purchasing decisions for gadget accessories at ABC Store .

$$CR = \frac{CI}{RI} = \frac{0,0875}{0,89} = 0,0983$$

CR values > 0.1 for matrices larger than 4x4 indicate an inconsistent assessment. Therefore, the AHP analysis of the decision to purchase gadget accessories at ABC Store with CR 0.00 < 0.1 is classified as consistent.

Based on the seven steps of AHP analysis, the level of importance of the variables/factors that influence the decision to purchase device accessories at ABC Store is as follows:

Table 4.17. Level of Importance of Seller Perception Factors/Variables

Factors/Variables	priority	Interest Level %
Product quality	0.26	26%
Price	0.28	28%
Service Quality	0.15	15%
Social Media Promotion	0.30	30%

Source: Processed data (2022)

Based on Table 4.17 above, of the four factors studied based on the perceptions of ABC Store management, social media promotion is the main consideration for ABC Store consumers to buy gadget accessories. The next factor to consider is price, a low price will make gadget accessories users interested in buying at ABC Store . The next consideration factor is service quality, good service quality will make customers comfortable when buying gadget accessories at ABC Store . The last factor or the lowest is product quality.

h. Comparison of Consumer and Seller Perceptions

The previous research on Consumer Perception done by Dwijayanti & Mutmainnah, 2022, indicate the importance of variables that influence the decision to purchase device accessories at ABC Store. The purchase decision seen from consumer perceptions. The result can be seen from the following regression equation:

$$Y = 5,619 + 0,085X_1 + 0,645X_2 + 0,291X_3 + 0,366X_4 + e$$

From the results of the analysis and the multiple linear regression equation, it can be concluded based on the level of importance as follows:

Table 4.18. Variable Importance Level of Consumer Perception

Factors/Variables	Interest Level	Order
Product quality	0.085	4
Price	0.645	1
Service Quality	0.291	3
Social Media Promotion	0.366	2

Source: previous research, Dwijayanti & Mutmainnah (2022)

This research uses the same questionnaire as previous research but different respondents. This research measures the perception of seller. Furthermore, this research generates different result. The level of importance based on seller perceptions, as follows:

Table 4.19. Variable Importance Level of Seller Perception

Factors/Variables	Interest Level %	Order
Product quality	26%	3
Price	28%	2
Service Quality	15%	4
Social Media Promotion	30%	1

Source: Processed data (2022)

Table 4.20. Comparison of The Level of Importance of Consumer's and Seller's Perception

Factors/Variables	Consumer's Perceptions		Seller's Perception	
	Weight	Rank	Weight	Rank
Product quality	0.085	4	26%	3
Price	0.645	1	28%	2
Service Quality	0.291	3	15%	4
Social Media Promotion	0.366	2	30%	1

Source: Processed data (2022)

Based on Table 4.20 above, seen from consumer perceptions, it states that the order of importance that influences purchasing decisions for device accessories at ABC Store is price, social media promotion, service quality and finally product quality. However, it is different when viewed from the perception of seller which states that the order of importance that influences purchasing decisions for device accessories at ABC Store is social media promotion, price, product quality, and finally service quality.

Proposed Improvements

The suggestions to the ABC Store to increase customer purchasing decision are as follows:

- Regarding the price variable, the company provides new innovations in gadget accessory products and sets affordable prices so that consumers prefer to buy gadget accessories from ABC store compared to other places.
- For social media promotion variables, we need to improve post quality and accuracy of post content.
- Merchants need to pay more attention and take into account consumer feedback that prices and promotions on social media have a significant impact on consumer purchasing decisions. Therefore, management should improve social media promotions, increase promotions and offer reasonable prices to compete with other companies.

CONCLUSION

Based on the results and discussion on the analysis of seller perceptions using the AHP method, it can be concluded that the order of importance that influences the decision to purchase gadget accessories at ABC Store is as follows:

- Social media promotion (importance rate of 30%)
- Price (importance level of 28%)
- Product quality (importance level of 26%)
- Service quality (importance level of 15%)

This result provides different findings with the customer perception on previous research. The highest importance factors from the customer perception on purchasing decision is price, while the highest importance factor from the seller perception is social media promotion.

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