



## APPLICATION OF ANALYTICAL HIERARCHY PROCESS METHOD IN BEAUTY STORE PURCHASE DECISION SUPPORT SYSTEM

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### ABSTRACT

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This study the study aims to contribute to the broader field of consumer behavior and offer strategic insights for businesses operating in Indonesia's dynamic beauty industry. This study focuses on identifying the priority criteria influencing consumer purchasing decisions in beauty shops, utilizing the Analytical Hierarchy Process (AHP) method as a decision support system. The quantitative research was conducted using primary data collected through interviews. The findings of the study reveal that price, promotions/discounts, product completeness, and service quality are the most significant factors driving consumer purchasing decisions. This study contributes to the field by demonstrating the application of AHP in optimizing retail strategies, thereby offering valuable insights for businesses aiming to enhance customer satisfaction and competitive advantage.

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## 1. INTRODUCTION

In the current era of globalization, where technological advancements and intense competition shape the business landscape, cosmetic companies in Indonesia face the challenge of not only maintaining stability but also fostering growth. Retaining existing customers has become a critical priority, as research indicates that it is more effective and efficient to nurture satisfied customers than to acquire new ones (Eva Ascarza et al., 2017). Beauty stores in Indonesia are actively implementing strategies to retain their customer base, such as offering superior product quality, personalized customer service, loyalty programs like vouchers and discounts, and launching innovative products. Effective communication through social media and building a reputable brand image are also pivotal in maintaining customer loyalty. Additionally, companies are investing in market research to understand customer needs and preferences, allowing them to remain agile and responsive to trends and innovations within the cosmetics industry (Abdulah et al., 2023).

Despite these efforts, the increasing intensity of competition necessitates that companies create distinctiveness and build a positive brand image to stand out among competitors (Lionora & Kusumawardhani, 2021). Many beauty stores in Indonesia, recognizing the potential of the local market, continuously monitor market developments, adhere to the latest trends, and adapt their strategies to retain consumers.

The beauty market in Indonesia is expanding rapidly, driven by a growing awareness among Indonesian consumers about the importance of skincare and beauty, positioning beauty stores as critical players in fulfilling these demands (Ferdinand & Ciptono, 2022). Prominent examples of beauty and health retail companies in Indonesia include Guardian, Sociolla, Beauty Haul, and Watsons, which all strive to meet consumer needs through diverse strategies.

Retail companies in the health and beauty sector typically offer a wide array of products from various suppliers (Zentes et al., 2017). Strategic location planning is crucial for these companies, as it enhances consumer accessibility and satisfaction. Many beauty and health stores are strategically positioned within shopping centers, where they employ various marketing strategies to attract consumers (Lemon & Verhoef, 2016).

Purchasing decisions are a complex process, involving several stages where consumers recognize their needs, seek information about products or brands, and evaluate their options before making a purchase (Tjiptono, 2014). In the context of beauty products, purchasing decisions are influenced by multiple factors, including brand reputation, price, product quality, service quality, and promotional activities (Suhadi et al., 2023). This research aims to explore how factors such as price, discounts or vouchers, product availability, and service quality influence purchasing decisions in beauty shops, specifically within retail companies like Sociolla, Guardian, Watsons, and Beauty Haul.

While previous studies have explored these factors in various contexts, there is a need to critically examine their specific impact on consumer behavior in Indonesia's beauty retail sector. This research seeks to fill this gap by offering insights into how these factors shape purchasing decisions, thereby providing valuable contributions to decision support systems and consumer behavior literature. By addressing this gap, the study will enhance the understanding of consumer decision-making processes in a rapidly growing market and offer practical implications for businesses aiming to increase consumer interest, build loyalty, and secure a competitive edge in the market.

This research is guided by the following key questions: 1) How do price, discounts, and promotions influence consumer purchasing decisions in beauty retail stores in Indonesia; 2) What role does product availability play in attracting and retaining consumers; 3) How does service quality impact consumer loyalty and purchasing behavior. By answering these questions, the study aims to contribute to the broader field of consumer behavior and offer strategic insights for businesses operating in Indonesia's dynamic beauty industry.

## 2. RESEARCH METHODS

This research employs the Analytical Hierarchy Process (AHP) as the primary analytical technique. AHP is a widely used decision-making method that helps prioritize various options by evaluating multiple criteria quantitatively. The superiority of each criterion is determined through a numerical process based on predefined indicators (Nurbismo, 2010). AHP is particularly useful in situations with complex decision-making scenarios involving multiple competing criteria, making it an ideal choice for this study.

The rationale for selecting AHP over other decision-making methods, such as the Simple Additive Weighting (SAW) or the Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS), is based on its robustness in handling both qualitative and quantitative data, its ability to incorporate expert judgment, and its systematic approach to comparing criteria in pairs. This method facilitates a comprehensive analysis by generating a priority value that reflects the level of importance of each criterion in the context of competition.

In this study, four criteria are used to determine the priorities regarding beauty shops: price, promotions/discounts, product range (completeness), and service quality. These criteria were selected based on their relevance to consumer decision-making in the beauty retail sector and their impact on customer satisfaction. The alternatives evaluated in this study include four well-known beauty shops in Indonesia: Guardian, Watsons, Sociolla, and Beauty Haul. These shops were chosen due to their widespread recognition among consumers, especially current students, who are the primary subjects of this research.

The data used in this research are primary data collected directly from the field. This includes gathering information on prices, promotions/discounts, product range, and service quality from the selected beauty shops. The sample size was determined to ensure a representative and reliable dataset, which is crucial for the validity of the AHP analysis. The data collection process involved surveys and interviews with students, ensuring that the input reflects the current market conditions and consumer preferences.

Finally, while AHP is a reliable and valid method for decision-making in various contexts, its application in this study is particularly relevant due to the multi-criteria nature of consumer choice in the beauty retail industry. The reliability of the AHP results was ensured by carefully designing the pairwise comparison process and validating the consistency of the judgments made. The validity of the method in this context is supported by its extensive use in similar studies within retail and service industries.

### 3. RESULTS AND DISCUSSION

This study applies the basic principles of the Analytical Hierarchy Process (AHP) to evaluate purchasing decisions in beauty and health retail companies in Indonesia. These principles include Decomposition, Comparative Judgment, Synthesis of Priority, and Consistency (Wijono & Ibt, 2015). Each principle is employed to provide a structured analysis of consumer preferences.

#### Decomposition

The research question is broken down into smaller, manageable parts, grouped into a hierarchy comprising objectives, criteria, and alternatives. Four key criteria were identified: price, discount or promotion, product availability, and service quality. These criteria and alternatives are represented in the hierarchical structure shown in Figure 1 below.

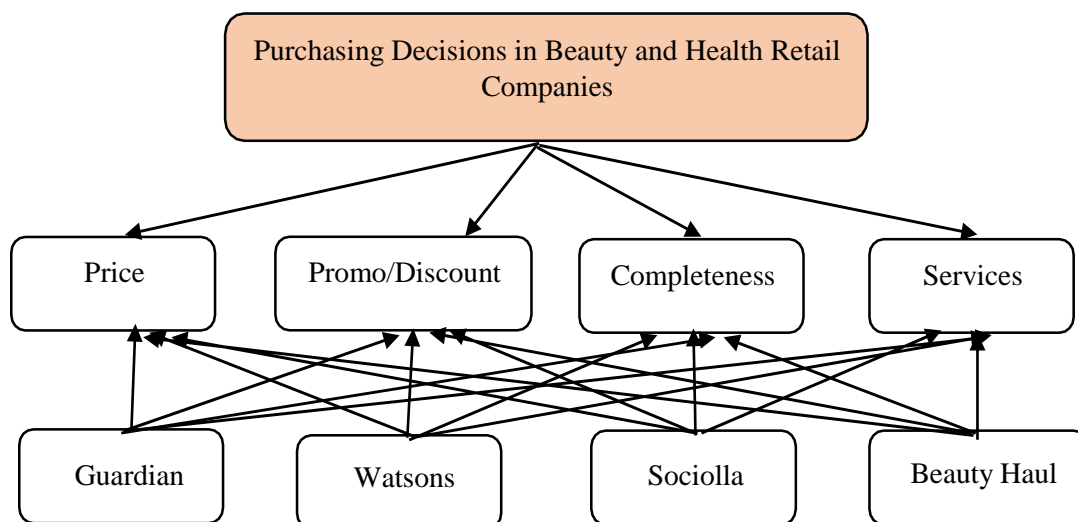


Figure 1. The Hierarchical Structure of Purchase Decisions in Beauty Stores  
Source: Processed Data (2023)

Figure 1 illustrates the comparison hierarchy used to evaluate purchasing decisions in beauty and health retail companies, specifically Guardian, Watsons, Sociolla, and Beauty Haul. This hierarchical breakdown allows for a detailed comparison of the factors influencing consumer decisions. The comparative explanation of the three elements will be discussed in more detail in the discussion of this study. The criteria used are described in the following Table 1 on the next page.

Table 1. Analysis of the Criteria Used

Criteria	Explanation
Price	Assessing the price of each brand of product sold in several beauty and health retail companies. This assessment consumers see the suitability of the selling price in the market with the store.
Promo/Discount	Assess whether or not there are promotions or discounts listed in the beauty and health retail company for each product. This is done according to each store's program every month, every event, or others.
Completeness	Assessing product availability according to consumer needs and desires in determining their choices in beauty and health retail companies
Service	Assess the quality of service provided by beauty and health retail companies in serving consumers in the store

Source: Processed data (2023)

### Comparative Judgement

Comparative judgment involves assessing the relative importance of each criterion in relation to others. A pairwise comparison matrix was created based on data from questionnaire interviews with respondents. Based on the data obtained through an assessment questionnaire about the criteria that are taken into consideration purchasing decisions at beauty and health retail companies, resulting in several criteria that are compared in table 2 below.

Table 2. Matrix of Comparison between Criteria

	Price	Promo / Discount	Completeness	Service
Price	1.00	3.00	0.20	0.33
Promo/Discount	0.33	1.00	0.14	0.11
Completeness	5.00	7.00	1.00	0.33
Service	3.00	9.00	3.00	1.00
Total	9.33	20.00	4.34	1.77

Source: Processed data (2023)

Price plays a significant role in consumer purchasing decisions. According to table 3 below, Sociolla has the highest score (16.00), indicating that it is perceived as the most affordable option among students. This finding aligns with studies by Wu et al. (2017) and Levrini and Santos (2021), which also highlight price as a critical factor in retail purchasing decisions. The focus on affordability among students is consistent with broader market trends that emphasize cost-consciousness among younger consumers.

Table 3. Matrix of Comparison between Suppliers with Price Criteria

	Guardian	Watsons	Sociolla	Beauty Haul
Guardian	1.00	0.33	7.00	5.00
Watsons	3.00	1.00	5.00	3.00
Sociolla	0.14	0.20	1.00	0.33
Beauty Haul	0.20	0.33	3.00	1.00
Total	4.34	1.86	16.00	9.33

Source: Processed data (2023)

Discounts and promo are another key criterion. Table 4 on the next page shows that Watsons has scores highest (16.00) in this category, indicating that students are particularly attracted to promotions offered by this retailer. This result is consistent with Mead et al. (2020), who found that promotional offers significantly drive consumer traffic in the retail sector. The preference for promotions reflects a broader industry trend where consumers are increasingly seeking value-added deals.

Table 4. Matrix of Comparison between Suppliers with Discount/Promo Criteria

	Guardian	Watsons	Sociolla	Beauty Haul
Guardian	1.00	3.00	5.00	7.00
Watsons	0.33	1.00	0.20	0.14
Sociolla	0.20	5.00	1.00	0.20
Beauty Haul	0.14	7.00	5.00	1.00
Total	1.67	16.00	11.20	8.34

Source: Processed data (2023)

Completeness is another key criterion. Table 5 below indicates that Sociolla has scores highest (16.00) in terms of product availability or completeness criteria, suggesting that consumers prefer retailers offering a wider range of products. This aligns with the findings of Lombart et al. (2018), who emphasized that product assortment is a critical driver of consumer loyalty in retail. The implication here is that retailers need to focus on broadening their product range to meet diverse consumer needs.

Table 5. Matrix of Comparison between Suppliers with Completeness Criteria

	Guardian	Watsons	Sociolla	Beauty Haul
Guardian	1.00	5.00	7.00	5.00
Watsons	0.20	1.00	5.00	5.00
Sociolla	0.14	0.20	1.00	0.33
Beauty Haul	0.20	0.20	3.00	1.00
Total	1.54	6.40	16.00	11.33

Source: Processed data (2023)

Service quality is another crucial factor. According to Table 6 below, Sociolla has the highest service quality score of 14, with students particularly valuing the hospitality and assistance offered by staff. This finding is supported by Ahrholdt et al. (2017), who noted that superior customer service enhances consumer satisfaction and loyalty. The implication for retailers is that investment in customer service can be a significant competitive advantage.

Table 6. Matrix of Comparison between Suppliers with Service Criteria

	Guardian	Watsons	Sociolla	Beauty Haul
Guardian	1.00	5.00	7.00	5.00
Watsons	0.20	1.00	3.00	1.00
Sociolla	0.14	0.33	1.00	0.33
Beauty Haul	0.20	1.00	3.00	1.00
Total	1.54	7.33	14.00	7.33

Source: Processed data (2023)

### Synthesis of Priority

After obtaining and transforming the comparison data into a matrix, the next step is to normalize the matrix. Additionally, students assessed that the Sociolla store provides exceptional service, particularly in terms of hospitality, such as offering baskets to customers. The matrix aims to make all values equal. After normalization, proceed with counting the total weight matrix as follows.

Table 7. Normalization, Interest Priority, and Interest Weight

	Normalized Matrix				Priority	Eigen Vectors
	Price	Promo / Discount	Completeness	Service		
Price	0.1071	0.15	0.0461	0.1875	0.4907	0.1227
Promo / Discount	0.0357	0.05	0.0329	0.0625	0.1811	0.0453
Completeness	0.5357	0.35	0.2303	0.1875	1.3035	0.3259
Service	0.3214	0.45	0.6908	0.5625	2.0248	0.5062

Source: Processed data (2023)

After obtaining comparison data, the next step involves normalizing the matrix and calculating the total weight for each criterion. As shown in Table 7 on the previous page, service quality emerges as the top priority for consumers, followed by product availability, price, and promotions. This order of priorities suggests that while price and promotions are important, the overall shopping experience, driven by service quality and product availability, is paramount in influencing consumer decisions.

Table 8. Normalization, Interest Priorities, and Priority Weights Between Price Criteria

Normalized Matrix						
	Guardian	Watsons	Sociolla	Beauty Haul	Priority	Eigen Vectors
Guardian	0.2303	0.1786	0.4375	0.5357	1.3820	0.3455
Watsons	0.6908	0.5357	0.3125	0.3214	1.8605	0.4651
Sociolla	0.0329	0.1071	0.0625	0.0357	0.2382	0.0596
Beauty Haul	0.0461	0.1786	0.1875	0.1071	0.5193	0.1298

Source: Processed data (2023)

When considering price as the primary criterion from Table 8 above, Watsons emerges as the preferred retailer, followed by Guardian, Beauty Haul, and Sociolla. The first priority or beauty and health retail company that best suits consumer choices are Watsons, with a rating of 1.8605. The second priority is the guardian, who has a score of 1.3820. The third priority was beauty haul, with a value of 0.5193. Finally, the fourth option is social, with a value of 0.2382. Thus, the alternative sequence for determining purchasing decisions is selected according to the price of consumer choice, among others, Watsons, Guardian, Sociolla, and Beauty Haul. This ranking reflects the different value propositions offered by each retailer and their alignment with consumer expectations.

Table 9. Normalization, Interest Priorities, and Priority Weights between Discount Criteria

Normalized Matrix						
	Guardian	Watsons	Sociolla	Beauty Haul	Priority	Eigen Vectors
Guardian	0.5966	0.1875	0.4464	0.8390	2.0696	0.5174
Watsons	0.1989	0.0625	0.0179	0.0171	0.2963	0.0741
Sociolla	0.1193	0.3125	0.0893	0.0240	0.5451	0.1363
Beauty Haul	0.0852	0.4375	0.4464	0.1199	1.0890	0.2722

Source: Processed data (2023)

For discounts and promotions from Table 9 above, Guardian leads, followed by Beauty Haul, Sociolla, and Watsons. The first priority or beauty and health retail company that best suits consumer choices is the Guardian, with a rating of 2.0696. The second priority is beauty haul, with a value of 1.0890. The third priority was social, with a score of 0.5451. Lastly, the fourth option is Watsons, with a value of 0.2963. Thus, the alternative sequence for determining purchasing decisions is selected according to the discount or promotion of consumer choice, including Guardian, Beauty Haul, Sociolla, and Watsons. The findings indicate that while promotions are important, they do not outweigh the importance of service and product availability in the overall decision-making process.

Table 10. Normalization, Interest Priorities, and Priority Weights between Equipment Criteria

Normalized Matrix						
	Guardian	Watsons	Sociolla	Beauty Haul	Priority	Eigen Vectors
Guardian	0.6482	0.7813	0.4375	0.4412	2.3081	0.5770
Watsons	0.1296	0.1563	0.3125	0.4412	1.0396	0.2599
Sociolla	0.0926	0.0313	0.0625	0.0294	0.2157	0.0539
Beauty Haul	0.1296	0.0313	0.1875	0.0882	0.4366	0.1092

Source: Processed data (2023)

Regarding product availability from Table 10 on the previous page, Guardian again ranks highest, reinforcing the importance of having a comprehensive product range. The table 10 shows processing results and comparisons in pairs. The result of such data processing is obtained priority level from each supplier with completeness criteria. The first priority or beauty and health retail company that best suits consumer choices is Guardian, with a rating of 0.5770. The second priority is Watsons, with a score of 0.2599. The third priority was Beauty Haul, with a value of 0.1092. Lastly, the fourth option is Sociolla, with a value of 0.0539. Thus, the alternative sequence for determining purchasing decisions selected according to the consumer choice includes Guardian, Watsons, Beauty Haul, and Sociolla. This consistency across different criteria highlights Guardian's strong market position.

Table 11. Normalization, Interest Priorities, and Priority Weights between Service Criteria

Normalized Matrix						
	Guardian	Watsons	Sociolla	Beauty Haul	Priority	Eigen Vectors
Guardian	0.6482	0.6818	0.5000	0.6818	2.5118	0.6280
Watsons	0.1296	0.1364	0.2143	0.1364	0.6166	0.1542
Sociolla	0.0926	0.0455	0.0714	0.0455	0.2549	0.0637
Beauty Haul	0.1296	0.1364	0.2143	0.1364	0.6166	0.1542

Source: Processed data (2023)

Lastly, in terms of service quality from Table 11 above, Guardian leads, with Watsons and Beauty Haul tied for second, and Sociolla trailing. The first priority or beauty and health retail company that best suits consumer choices are Guardian, with a rating of 0.6280. The second and third priorities have the same value as Watsons and Beauty Haul, with a value of 0.1542. Finally, the fourth option is Sociolla, with a score of 0.0637. Thus, the alternative sequence for purchasing decisions is chosen according to the consumer choice, including Guardian, Watson, Beauty Haul, and Sociolla. This ranking underscores the critical role of customer service in shaping consumer preferences.

### Consistency Ratio

The AHP method relies on human judgment, which introduces the possibility of inconsistency. The consistency ratio (CR) measures this aspect, with a  $CR < 0.1$  indicating acceptable consistency. Table 12 shows that all CR values are below 0.1, confirming that the judgments were consistent.

Table 12. Consistency Ratio

Paired Comparison	CR	Information
Between Criteria	-0.7674	Consistent
Between Alternatives to Price Criteria	-0.7684	Consistent
Between Alternatives to Discount or Promo Criteria	-0.7730	Consistent
Between Alternatives to Completeness Criteria	-0.7670	Consistent
Between Alternatives to Service Criteria	-0.7644	Consistent

Source: Processed data (2023)

### Discussion of Findings

The findings of this study provide several insights. First, the emphasis on service quality and product availability as top priorities suggests that consumers in the beauty and health retail sector value the overall shopping experience over just price and promotions. This aligns with the trend identified by Roggeveen and Beitelspacher (2018), which argues that experiential shopping is becoming increasingly important in retail. The comparison with existing studies highlights that while price remains a significant factor, its impact may be secondary to other elements, such as service and product availability. This indicates a shift in consumer priorities, where a holistic shopping experience is valued more than just cost savings.

#### 4. CONCLUSION

This study identifies four key criteria that drive consumer purchase decisions in beauty and health retail: service quality, product availability, price, and promotions/discounts. Among these, service quality was the most critical, followed by product availability and price. Promotions and discounts played a supporting role. Consumers favored Watson for its lower prices, aligning with Homburg et al. (2010), who highlighted the significant role of price in consumer decisions. Guardian was preferred for its frequent promotions and discounts, which consumers found enticing, as supported by Ailawadi et al. (2009). Guardian also excelled in product variety and service quality.

However, the study has limitations, including its focus on specific consumers and retailers. Future research should broaden the scope to include more retailers and explore other factors influencing consumer behavior, such as brand loyalty and online shopping experiences. The findings have practical implications for beauty and health retailers, who should prioritize service quality, product availability, pricing, and promotions in their strategies. Implementing a decision support system based on these factors can enhance customer satisfaction and drive sales. Further research can optimize these systems to adapt to changing consumer preferences, helping retailers remain competitive in a dynamic market.

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