CONSUMER PREFERENCE OF SKINCARE PRODUCT USING ANALYTICAL HIERARCHY PROCESS (AHP)

PREFERENSI KONSUMEN PRODUK SKINCARE MENGGUNAKAN PROSES ANALITIK HIRARKI (PAH)

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Abstract: According to Indonesia’s Digital Marketing Association, Wardah, Nature Republic, Innisfree product are on the top 3 best beauty product in Indonesia. Brand ambassador, brand image, country of origin, online review and product packaging are some factors that can influence consumer preference in choosing a product or services. This research aims to know which criteria is most important for customer in selecting beauty brand and to know the most preferable beauty brand in Manado. This research used analytical hierarchy process with total sample 60 respondents which are citizen in Manado. The result shows that there are top three criteria that has the most influence for consumer preference of beauty brand product which are brand image, price, and online review. The rest criteria that are brand ambassador, country of origin and product packaging are not the main things that influence the consumers. Every beauty brand company need to pay attention seriously toward these factors. The result also shows that Wardah become the most preferable beauty brand by the consumer, followed by Nature Republic, and Innisfree in the last place. Innisfree should improve their performance in every sector especially in the criteria that most influence the customers’ preference.

Keywords: marketing, consumer behavior, consumer preference

INTRODUCTION

Research Background

Beauty and personal care is an art field that addresses the looks and health of someone’s hair, nails, and skin. This field of beauty and personal care encompasses a wide range of careers such as stylists, barbers, manicurists, pedicurists, makeup artists, and education. Expert beauty and personal care experts can also join...
beauty product's firms to help in the manufacture and design of beauty products. One of industrial sector which shows significant growth in Indonesia is health and beauty products. There are a number of triggering factors that influence the movement of this business, such as the huge number of Indonesian population that automatically provides potential markets, the availability of natural resources as the raw materials to make health and beauty products, the development of technology applied in the production process, and also the richness of cultural heritage which transfers natural beauty herb and formulation (Indonesia’s Ministry of Trade, 2017).

Skin care products, make-up, and personal care are increasingly becoming integral part of Indonesian lifestyles. Consumers are getting more concerned of their well-being, especially when it comes to hygiene and appearance. This is attributed to improved awareness on sanitation, rise in income, and increase in celebrity, as well as social media influence on fashion and health. Supported with facts that the country is the largest market in Southeast Asia and has fourth highest population in the world, the skin care industry serves as a lucrative sector for foreign and domestic investors. Corresponding to this trend, cosmetic products have become a primary requirement for Indonesian females who are the key target of the skin care industry players. However, the skin care industry is beginning to innovate on targeting men and millennial (Market Research, 2020). The Indonesia skin care products market is segmented into product type, demographics, age group, and sales channel. Depending on product type it’s categorized into cream, lotion, and others.

E-commerce remains a small distribution channel in terms of share but saw exponential current value sales growth in 2019, with this creating new opportunities to reach out to consumers. Indonesian consumers became increasingly receptive to buying online, with this linked to strong digital engagement. Indonesia has always been known as a market with a lot of potential for e-commerce businesses. As of 2019, Indonesian e-commerce revenue amounts to US$ 18.7 billion, when it comes to the skincare market specifically, the projection also shows a healthy growth. The market that is worth US$ 1.98 billion at the moment is projected to grow by more than 20% by 2023. What makes the market even more attractive is that even now, the consumer base in Indonesia is still growing fast and strong, be it in terms of purchasing power and willingness to spend (Statista, 2020).

Figure 1 shows the best-selling beauty product in e-commerce in billion. The top 3 beauty product are Wardah (7.37 billion), Nature Republic (5.8 billion), and Innisfree (3.62 billion). According to Indonesia’s Digital Marketing Association, in google monthly search and Instagram post, the three beauty product also on the top 3 best beauty product in Indonesia.

Consumer preferences describe the reasons for the choices people make when selecting products and services. This is used primarily to mean an option that has the greatest anticipated value among a number of options. According to Voicu (2013), the preferences of the consumers are a positive motivation, expressed by the affective compatibility towards a product, service or trading form. A consumer preference explains how a consumer ranks a collection of goods or services or prefers one collection over another. This definition assumes that consumers rank goods or services by the amount of satisfaction, or utility, afforded. Consumer preference theory does not take the consumer's income, good or service's price, or the consumer's ability to purchase the product or service (Anojan and Subaskaran, 2015). Consumer preferences describe the reasons for the choices people make when selecting products and services. Analyzing the factors that determine consumer preferences helps businesses target their products towards specific consumer groups, develop new products and identify why
some products are more successful than others. Advertising (Daniel, 2019), brand image (Isik and Yasar, 2015), country of origin (Ismail, Masood, and Tawab, 2012), online review (Tantrabundit and Jamrozy, 2018), price (Lavanya, 2014), and product characteristic (Wartaka, 2016) are some factors that can influence consumer preference in choosing a product or services.

Research Objective
The research objectives used are as follows:
1. Which criteria is the most important to drive consumer preference of beauty brand in Manado?
2. Which beauty and care product is the most preferred for the consumer?

THEORETICAL FRAMEWORK

Marketing
Marketing is the process by which companies create value for customers and build strong customer relationships in order to capture value from customers in return (Kotler and Armstrong, 2018). Marketing means managing markets to bring about profitable exchange relationship by creating value and satisfying needs and wants.

Consumer Behavior
The American Marketing Association (AMA) defines consumer behavior as the dynamic interaction of cognition, behavior and environmental events by which human beings conduct the exchange aspect of their lives with various social and psychological variables at play. In other words, consumer behavior involves the feelings and thoughts of people experiences. It also includes the things that influence the thoughts, actions, and feelings.

Consumer Preference
Pyndick and Rubinfeld (2001) Describing consumer preferences in such a coherent way given the vast number of services that our economy manages and provides for purchase as well as the diversity of personal taste must come to comparing different groups of item available of service. The preferences of the consumers are a positive motivation, expressed by the affective compatibility towards a product, service or trading form (Voicu, 2013). A consumer preference explains how a consumer ranks a collection of goods or services or prefers one collection over another. This definition assumes that consumers rank goods or services by the amount of satisfaction, or utility, afforded.

Previous Research
Arabi (2018) focused more specifically on the vision, sense generated first by the consumer at the perception of a product’ packaging design. For this, we chose a cosmetic product packaging (deodorant) for our study, we will present images of packaging in different colors to participants, and after they have to answer to a questionnaire. Thus, we will study the perception and the preferences of colors according to the consumer gender, the colors impact on the perception of products price, and information’s memorization.

Wartaka (2016) determined the attributes and combination of attributes among the most preferred by consumers for a segment of the age and the amount of income. Sources of data in this study were obtained from 138 respondents in the city of Bogor and its surroundings, conjoint analysis is used to determine the usefulness of each attribute and their relative weights as a tool to predict the preferences of a particular segment or as a whole. The results showed the order of importance weight according to the respondents is that the quality attributes (34.95%), the type of color (33.21%) and benefits (31.84%), while the combination of the most preferred products are: lipstick durable / waterproof, according to skin color, and functioning for moisturizing / protective lip. In the description also delivered conjoin analysis results for each age and income segments.

Kusumawati, Saragi, and Putriana (2021) analyzed the effect of product attributes and consumer characteristics on consumer preferences and buying decisions for oral vitamin C products during the COVID-19 pandemic. This study was an explanatory quantitative study of 159 respondents who purchased 500 mg oral vitamin C products. Respondents was men and women, aged 18-60 years, bought 500 mg oral vitamin C products without a doctor's prescription at pharmacies in Bogor district, West Java during December 2020 - January 2021 and were not in the healing period. Data was collected by purposive sampling and analyzed by SEM (Structural Equation Modeling) using the Second Order Confirmatory Factor Analysis technique using the Lisrel program.
The results showed that the product attributes of 500 mg oral vitamin C had no significant effect on consumer preferences and buying decisions. Consumer characteristics have a significant effect on consumer preferences and buying decisions for 500 mg oral vitamin C products. Consumer preferences have a significant effect on buying decisions for 500 mg oral vitamin C products. During the COVID-19 pandemic, personal psychological factors which are consumer characteristics have the most significant influence on consumer preferences in choosing and buying decisions of 500 mg oral vitamin C products, followed by socio-economic factors and cultural factors.

Conceptual Framework

![Conceptual Framework]

Research Approach
This research used quantitative method. The method used in this research is Analytical Hierarchy Process and Microsoft Excel as the data tabulation tool.

Population, Sample, and Sampling Design
Population is the citizen of Manado City who has been purchased three beauty brand (Innisfree, Nature Republic, and Wardah). The sampling technique is purposive sampling because the research did not choose the respondents randomly but the respondent should be the people that already have an experience in purchasing three beauty brand (Innisfree, Nature Republic, and Wardah) with total sample 60 respondents.

Data Collection Method
The primary data used in this research is questionnaire that will be distributed to respondents. The questionnaires contents in this research is divided into two sections. First section is about the respondent’s identity which are gender, age, and occupation. The second section is about the alternative café and bar and criteria of this research, in this section, the respondents will choose which alternative they prefer to revisit and which criteria is influencing their revisit intention the most. Data collected from a source that has already been published in any form is called as secondary data. The review of literature in any research is based on secondary data. It is collected by someone else for some other purpose (but being utilized by the investigator for another purpose).

Operational Definition of Research Variable
1. Brand Ambassador. A well-known or well-connected individual used to promote and advertise goods or services. (Indicators: Visibility, Attraction, and Credibility).
2. Country of Origin. Where the products have been developed, assembled, designed and manufactured. (Indicators: Brand Recognition, Brand Reputation, and Brand Affinity).
3. Brand Image. Indispensable for marketing where customers infer the quality of products by the brand image and are further stirred up the behavior of purchasing. (Indicators: Reputation Attachment, Stereotype Attachment, and Innovativeness).
4. Online Review. A part of word-of-mouth marketing is when a consumer's interest in a company's product or service is reflected in their daily dialogues. Essentially, it is free advertising triggered by customer experiences. (Indicators: Ratings, Positive and Negative Review, and Photo and Video of Product Review).

5. Price. That which is given up in an exchange to acquire a good or service. In buying process, people will look on the price first. (Indicators: Price Affordability, Accordance of price with the quality, and Price Competitiveness).

6. Product Packaging. Product packaging is part of a creative business that combines the shape, structure, material, color, imagery and typography as well as other design elements with product information so that products can be marketed. (Indicators: Design, Material, and Labeling.

Data Analysis Method
Multi-Criteria Decision Making
Most decision making involves complicated procedures in which decision makers rank the alternatives of a choice according to multiple criteria (Saaty, 2008). The advantage of MCDM is that it gives a balanced view of how suitable any option is and helps to take emotion out of the equation. It also stops any one factor from overshadowing others. Other problems include that a simple multiplication of the score times the weighting may be too simple a calculation, and that putting all of the criteria together fails to differentiate between logical, objective measurements and emotional, subjective judgments.

Analytical Hierarchy Process
Table 1. Scale of Analytical Hierarchy Process (AHP)

<table>
<thead>
<tr>
<th>Intensity of Importance</th>
<th>Definition</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Equal importance</td>
<td>Two factors contribute equally to the objective</td>
</tr>
<tr>
<td>3</td>
<td>Somewhat more Important</td>
<td>Experience and judgment slightly favor one over the other.</td>
</tr>
<tr>
<td>5</td>
<td>Much more Important</td>
<td>Experience and judgment strongly favor one over the other.</td>
</tr>
<tr>
<td>7</td>
<td>Very much more Important</td>
<td>Experience and judgment very strongly favor one over the other.</td>
</tr>
<tr>
<td>9</td>
<td>Absolutely more Important</td>
<td>The evidence favoring one over the other is of the highest possible validity.</td>
</tr>
<tr>
<td>2,4,6,8</td>
<td>Intermediate Values</td>
<td>When compromise is needed</td>
</tr>
</tbody>
</table>

Source: Saaty (1980)

A ratio scale is a measurement scale in which a certain distance along the scale means the same thing no matter where on the scale you are, and where “0” on the scale represents the absence of the thing being measured. Thus a “4” on such a scale implies twice as much of the thing being measured as a “2”. The ratio scale overcomes the disadvantage or the arbitrary origin point of the interval scale, in that it has an absolute zero point, which is a meaningful measurement point. The ratio scale not only measures the magnitude of the differences between points on the scales but also taps the proportions in the differences (Sekaran and Bougie, 2009).

RESULT AND DISCUSSION

Result
Analytical Hierarchy Process (AHP) Results
In the Analytical Hierarchy Process (AHP) respondents shared their opinion by filling questionnaires, and determined which beauty brand is the most preferred and which criteria have influenced the most when people want to decide to purchase the beauty brand. Respondents scored the alternative by using pairwise comparison by filling several questions in the form of questionnaires, and determining which beauty brand is the most preferred based on each criterion developed in AHP. Then through this method of AHP, respondents ranked beauty brand criteria.
Figure 2 shows the highest score is brand image (0.285). The second is price (0.22), online review is in third position with score 0.195, followed by product packaging (0.136). The rest filled by brand ambassador (0.113), and country of origin as the lowest score (0.051). As the overall inconsistency = 0.00436, it means the data comparison in this result is valid and consistent.

**Result of Pair Wise Comparison of Brand Ambassador**

Figure 3 shows that Nature Republic is the most preferred beauty brand by respondents (0.416), second is Innisfree (0.396), followed by Wardah with the lowest score by respondents (0.188) and the overall inconsistency for result of brand ambassador is (0.002), it means the data comparison by respondents is valid and consistent.

**Result of Pair Wise Comparison of Country of Origin**

Figure 4 shows that Nature Republic is the most preferred beauty brand by respondents (0.429), second is Innisfree (0.429), followed by Wardah with the lowest score by respondents (0.143) and the overall inconsistency for result of country of origin is (0.005), it means the data comparison by respondents is valid and consistent.
Figure 4 shows that in Nature Republic and Innisfree have the same score (0.429), followed by Wardah with score 0.143, and the overall inconsistency for result of country of origin is 0, it means the data comparison by respondents is valid and consistent.

**Result of Pair Wise Comparison of Brand Image**

![Brand Image Graph]

*Figure 5. Result of Pair Wise Comparison of Product Variety*  
*Source: Data Processed (2022)*

Figure 5 shows that Wardah is the most beauty brand by respondents (0.633), followed by Nature Republic (0.192) and Innisfree with score 0.175, and the overall inconsistency for result of product variety is 0.0079, it means the data comparison by respondents is valid and consistent.

**Result of Pair Wise Comparison of Online Review**

![Online Review Graph]

*Figure 6. Result of Pair Wise Comparison of Online Review*  
*Source: Data Processed (2023)*

Figure 6 shows that Innisfree, Nature Republic and Wardah have the same score 0.333, and the overall inconsistency for result of online review is 0, it means the data comparison by respondents is valid and consistent.

**Result of Pair Wise Comparison of Price**

![Price Graph]

*Figure 7. Result of Pair Wise Comparison of Price*  
*Source: Data Processed (2023)*
Figure 7 shows that Wardah is the most beauty brand by respondents (0.458), followed by Nature Republic (0.416) and Innisfree with score 0.126, and the overall inconsistency for result of price is 0.00794, it means the data comparison by respondents is valid and consistent.

**Result of Pair Wise Comparison of Product Packaging**

<table>
<thead>
<tr>
<th></th>
<th>Innisfree</th>
<th>Nature Republic</th>
<th>Wardah</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wardah</td>
<td></td>
<td></td>
<td>0.333</td>
</tr>
<tr>
<td>Nature Republic</td>
<td></td>
<td></td>
<td>0.333</td>
</tr>
<tr>
<td>Innisfree</td>
<td></td>
<td></td>
<td>0.333</td>
</tr>
</tbody>
</table>

**Figure 8. Result of Pair Wise Comparison of Product Packaging**

*Source: Data Processed (2023)*

Figure 8 shows that Innisfree, Nature Republic and Wardah have the same score 0.333, and the overall inconsistency for result of online review is 0, it means the data comparison by respondents is valid and consistent.

**Result of Analytical Hierarchy Process of Consumer Purchase Decision in Beauty Brand**

<table>
<thead>
<tr>
<th></th>
<th>Innisfree</th>
<th>Nature Republic</th>
<th>Wardah</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wardah</td>
<td></td>
<td></td>
<td>0.420</td>
</tr>
<tr>
<td>Nature Republic</td>
<td></td>
<td></td>
<td>0.326</td>
</tr>
<tr>
<td>Innisfree</td>
<td></td>
<td></td>
<td>0.254</td>
</tr>
</tbody>
</table>

**Figure 9. Result of Analytical Hierarchy Process of Consumer Purchase Decision in Beauty Brand**

*Source: Data Processed (2023)*

Based on the observation, this research shows that respondents choose Wardah as the most preferred beauty brand for them among the other alternatives. Figure 9 shows Wardah has the highest score with 0.420, in the second position is Nature Republic with score 0.326, and followed by Innisfree in the last position with score 0.254. In this result the overall inconsistency indicated = 0.004, it shows that the comparison of data in this research is valid and consistent.

**Discussion**

This research designed to find out the consumer preference in among three beauty brand which are Innisfree, Nature Republic, and Wardah. This result obtained by using Analytical Hierarchy Process (AHP) as Multi-Criteria Decision Making (MCDM) method that helps decision maker facing the complex options of alternative with various complex subjective criteria provided. This method also is useful to define the strength and weakness of each beauty brand toward criteria provided. Below is the discussion and explanation from the result of this research base on respondent's data comparison. The respondents are those that already purchase in the three alternatives that shared and gave their opinions related to research objectives.

**Pair Wise Comparison for the Main Criteria Analysis**
Analytical Hierarchy Process determines the relative importance or weight of the criteria, to rank the criteria from most important to least important. A criterion with the highest average weight indicates the priority criteria among others. Firstly, for the overall of main criteria (brand ambassador, brand ambassador, brand image, country of origin, online review, price, and product packaging), based on result, the most important criteria that influence customer is brand image. Brand image is indispensable for marketing where customers infer the quality of products by the brand image and are further stirred up the behavior of purchasing. Brand image become the most important thing for the consumer to choose/buying a products. Second is price, one of the most important reasons for consumer to choose to purchase a beauty brand products is because the price that are offered is cheaper than usual. Third is online review which is about the positive and negative comment about the beauty brand product. It is include the photos, videos, and also the rating of the products by the previous consumers. Fourth is product packaging which is about the packaging material (about the durability of the product packaging), product design that can attracted the consumer (especially the consumer impulse buying), and also about the labeling (easy to ready and also eye-catching).

Fifth is brand ambassador, a well-known or well-connected individual used to promote and advertise goods or services which is one of strategy marketing that used by the company to attract more consumer. Some elements of brand ambassador which are visibility, credibility, and also attraction of the brand ambassador. And the last is country of origin is where the products have been developed, assembled, designed and manufactured. The elements of country of origin is about the reputation, stereotype, and also the innovativeness of the country.

Pairwise Comparison Criteria in Alternatives Analysis
In criteria of brand ambassador, Nature Republic become the most preferable by the consumer. Second is Innisfree, and the last is Wardah. It means that the brand ambassador of Nature Republic is more attract the consumer to purchase. Nature Republic and Innisfree are using their country artist (K-POP Idol) as their brand ambassador. The current brand ambassador of Nature Republic is NCT 127 that replace K-POP group EXO as the old brand ambassador. Meanwhile, Innisfree current brand ambassador is Mingyu from Seventeen boyband, and Wardah using Raline Shah as their brand ambassador. NCT 127 has a lot of fans globally and one of the successful and well-known K-POP group right now. That's why, they can get more attraction from the consumer. In criteria of brand image, Wardah is the most preferred by respondents compare to the other two beauty brand. As the beauty brand from Indonesia, Wardah has a good brand image. Wardah attract more consumer on their brand affinity, recognition, and reputation. In criteria country of origin, Nature Republic and Innisfree has the same score and the last is Wardah. Both of the top two beauty brand is from South Korea. As we know, South Korea is the country that has a good beauty culture. They has a good skin and has a lot of beauty product. Become the trend setter in beauty product industry, makes both of the brand attract more consumer than Wardah. In criteria online review, the three alternative has a tied result. That means that Innisfree, Nature Republic, and Wardah has a good review which are positive comments and rating from the consumers. In criteria of price, Wardah become the cheaper beauty brand products and followed by Nature Republic and the last is Innisfree. As beauty brand from Indonesia, Wardah has a cheaper price than Nature Republic and Innisfree. As an example, the serum of Wardah has a price around Rp.35.000. Meanwhile Nature Republic has a price on Rp.148.000 and Innisfree has a price on Rp.252.000. Its shows a huge differences of the product’s price. In criteria of product packaging, the three alternative has a tied result. According to the consumer they feel the same about the product design which is about how eye-catching the products packaging, product materials which about the durability of the product packaging, and the product labeling (easy to read and have a clear explanation).

Result of Analytical Hierarchy Process of Consumer Purchase Decision of Beauty Brand
Based on the overall data, the consumer choose Wardah as the most consumer purchase decision of beauty brand compares to the rest of alternatives. This result already shown in figure 9 about result of the most preferred beauty brand, it shows that when the consumer want to purchase a beauty brand, they choose Wardah as the most preferred beauty brand. In all the criterion on this research, brand image is the most important criteria that influence preference in choosing beauty brand. Wardah become the most preferred beauty brand, it supported by the data above that the beauty brand are dominated and win in two criteria (brand image and price), which are the top two important criteria when the consumer want to decide to choose a beauty brand products. Second in Nature Republic which win brand ambassador criteria. The last position is Innisfree. It doesn’t mean that Innisfree is the worst beauty brand, but compare to the other alternatives, Innisfree has the lowest score based on the respondents’ opinion.
CONCLUSION AND RECOMMENDATION

Conclusion
Based on the result of analyzing and discussing, then two conclusions can be purposed.
1. Based on six criteria (brand ambassador, brand image, county of origin, online review, price, and product packaging), there are top three criteria that has the most influence for consumer preference of beauty brand product. In the first place and got the highest total is brand image. According to the data comparison that developed in pairwise comparison of Analytical Hierarchy Process (AHP), brand image became the most influenced criteria for consumer when they decide to choose a beauty brand products. Second position of the highest score is price. And the third is online review. The rest criteria that are brand ambassador, country of origin and product packaging are not the main things that influence the consumers.
2. Based on the overall result that developed using Analytical Hierarchy Process (AHP), shows that Wardah become the most preferable beauty brand by the consumer, followed by Nature Republic, and Innisfree in the last place.

Recommendation
There are two recommendations that can be concluded from the overall result in this research, which are listed as follow:
1. Brand image, price, and online review is the most important thing that influence the customer in choosing a beauty brand. Every beauty brand company need to pay attention seriously toward these factors. The customer will choose a beauty brand that has a good reputation and also has an affordable price. The customers also highly concern about their online review which are about the positive and negative comments, photo and video review, and also the rating from the previous consumers.
2. In this research, Innisfree got the last place in the most preferred e- by the customers in Manado City. Innisfree got a last place on two criteria (brand image and price) which is the top two criteria that according to the consumer are influence their preference in choosing a beauty product. Innisfree should improve their performance in every sector especially in the criteria that most influence the customers’ preference. The company should make a new price strategies so they can compete with the others beauty brand that have more cheaper price. Innisfree should also build stronger brand image to attract more consumer to increase the sales.

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