

# Willingness to Pay Analyse for Green Cosmetics Product in Malang City

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Jambura Science Of Management

JSM  
Volume 6  
Number 1  
January 2024

Received on 18 Nov 2023

Revised on 22 Nov 2023

Accepted on 28 Nov 2023

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DOI: 10.37479

## ABSTRACT

**Purpose:** This research aims to determine the characteristics of green cosmetics consumers in the city of Malang. Additionally, it seeks to analyze the estimates and percentage changes in prices of green cosmetics products that consumers are willing to pay.

**Design/Methodology/Approach:** Descriptive analysis and the Contingent Valuation Method are employed in this research. The respondents consist of women in Malang who have used green cosmetics products. The total number of respondents for this study is 100.

**Findings:** The characteristics of the respondents in this study are predominantly women aged 26 to 35, working in the private sector, with expenditures exceeding Rp. 6,000,000. Overall, the majority of respondents in this study are willing to pay more for green cosmetics products. They express no objection because the benefits of green cosmetics products are not only advantageous for users but also contribute to environmental sustainability. Green cosmetics products such as serum, facewash, and sunscreen are frequently used and preferred by consumers.

**Keywords:** *Contingent Valuation Method; Green Cosmetics; Willingness to Pay*

## INTRODUCTION

The beauty industry is one of the primary consumer sectors that continually undergoes transformations with the evolution of time. One of the outcomes of the beauty industry is cosmetic products, which have become an essential need, particularly for women. The target market for the cosmetic industry is dominantly by women (Investor Daily, 2018). The beauty industry in Indonesia has witnessed consistent growth over the years, with numerous cosmetic

products emerging from various brands, each possessing unique characteristics and gaining significant market traction. According to Statistic Indonesia (BPS) in 2021, the cosmetic industry experienced a growth rate of 9.61%. The Indonesian Food and Drug Authority (BPOM) also noted a 20.6% increase in the number of companies in the cosmetic industry. From 2021 to July 2022, there has been an addition to cosmetic industries, initially numbering 819, now totaling 913 (Hasibuan, 2022). This indicates the promising outlook of the cosmetic market in Indonesia. The structure of the cosmetic industry in Indonesia reveals that approximately 95% of it consists of small and medium-sized enterprises, with the remaining 5% being large-scale industries (Ministry of Industry, 2019). Through these medium and large-scale industries, some have successfully exported their products to various countries, including Southeast Asia, Africa, the Middle East, and others. The growth in the Indonesian cosmetic industry can be attributed, in part, to the awareness among the public in meeting their needs and desires for cosmetic use. People believe that using cosmetics enhances physical appearance, making them more attractive, and can also be used for self-care. Beyond maintaining appearance, cosmetics are now utilized for self-expression (Bella & Artanti, 2021).

In an era where climate change and sustainability take center stage, consumers increasingly evaluate products not only based on functionality but also consider to their environmental impact. Environmentally friendly products, known as green products, have become part of the global response to the pressing environmental challenges. The manifestation of green products varies, including everyday items such as clothing, body care products, vehicles, and more. Recent studies show that consumer awareness of environmental issues plays a dominant role in shaping their preferences for green products. Increased awareness of the environmental impact of products significantly influences consumer tendencies to switch to more environmentally friendly options.

The growth in the cosmetic industry aligns with the rising awareness among the public regarding the importance of preserving the environment and its sustainability in the future. The Data Insight Center (KIC) conducted a survey, revealing that people consistently make purchases and use eco-friendly products, including cosmetic and skincare items. Jayani (2022) states that cosmetic products account for 30.6% of environmentally friendly product purchases by the community. Given the complex environmental issues of the current era, solving them requires responsible consumer behavior to reduce environmental pollution, one of which involves a significant shift towards greater use of green products (Nekmahmud & Fekete-Farkas, 2020). The cosmetic industry has responded to these environmental challenges by offering various choices of green beauty products that support a healthier lifestyle for consumers (Dimitrova et

al., 2009). According to McEachern and McClean (2002), the existence of green cosmetics aims to protect the environment, minimize pollution, responsibly use non-renewable resources, and safeguard the welfare of animals and species.

The willingness to pay (WTP) is a crucial parameter in measuring the extent to which consumers are willing to invest their financial resources to support environmentally friendly cosmetic products. This research aims to further understand consumers' willingness to purchase green cosmetics, focusing on specific products such as serum, facial wash, and sunscreen. These products were selected as they are the most widely used by Indonesian women (Databoks, 2022). Through the analysis in this study, it is expected to gain sharper insights into consumer dynamics and societal perspectives on a sustainable beauty role. Thus, this research is anticipated to make a valuable contribution to the development of a more sustainable beauty industry and the maturation of consumer awareness regarding the environment.

## **METHODS**

This research utilizes a quantitative approach. Primary data collection is conducted by distributing research instruments, specifically questionnaires, with the aim of estimating the consumer willingness-to-pay for purchasing green cosmetics. Based on this objective, the research employs an explanatory research type, which seeks to elucidate relationships within a particular phenomenon. The population for this study comprises residents of Malang City who use or are interested in using green cosmetics (serum, facial wash, and sunscreen). Sampling is done using a nonprobability sampling technique, specifically accidental sampling, where respondents are selected based on chance. The total number of respondents for this study is 100 female participants who use green cosmetics. The data collection process was carried out in September-October 2023. In the analysis of consumer characteristics, descriptive statistics are employed to provide a detailed overview of the characteristics of green product consumers in Malang City. The discussed consumer characteristics include age, occupation, and expenditure.

To analyze price estimates and percentage changes in prices for green cosmetics that consumers are willing to pay, the Contingent Valuation Method (CVM) is utilized. This analysis technique is employed to determine the magnitude of the willingness-to-pay (WTP) value for consumers purchasing green cosmetics. CVM yields reliable estimates for consumer WTP (Magfira, 2018). The method produces an estimated maximum monetary value consumers are willing to pay for green cosmetics based on the perceived environmental quality benefits. The steps involved in the CVM analysis are as follows:

## 1. Creating Market Hypothesis

The market hypothesis depicts future environmental changes. In this study, it provides an overview for consumers as they fill out the research instrument, emphasizing the importance of maintaining skin health by avoiding exposure to chemical substances and the societal shift towards healthy products like green cosmetics. The market hypothesis for this research is as follows: "The current environmental issues indirectly caused by economic activities have raised awareness among the public regarding environmental preservation. This phenomenon is evident in the emergence of eco-friendly products, such as 'green cosmetics'. Beyond being known for positively impacting environmental sustainability, green cosmetics also use non-synthetic ingredients sourced from nature. This can provide more nutrients to the skin compared to chemical-based products. The natural ingredients in beauty products are also safer for the skin, posing minimal risk of irritation even for sensitive skin."

## 2. Determining WTP Bid Values

WTP bid values are obtained through interviews with green cosmetics consumers using a bidding games method.

## 3. Calculating Average WTP Values

Estimations for average WTP values are derived from the data collected through consumer questionnaire responses.

## 4. Creating the WTP Curve

The thinking concept in this research can be seen in the framework in Figure 1.

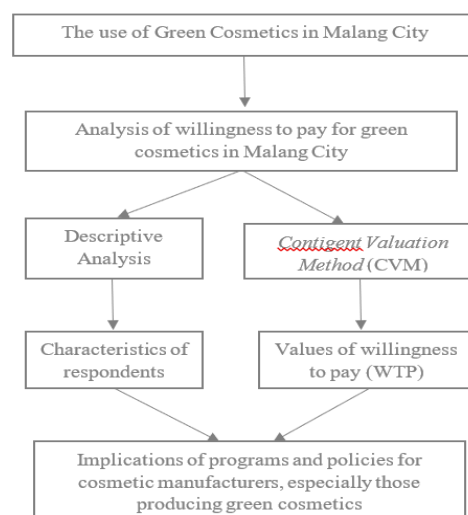


Figure 1: Conceptual Framework of the Research Model

## RESULTS

### Consumer Characteristics

In the study involving 100 respondents in Malang City using green cosmetic products such as serum, facial wash, and sunscreen, the dominant age group was 26-35 years, accounting for 60% of the respondents. Additionally, 25% of the respondents were aged 17-25 years. The remaining 9% and 6% were aged 36-45 years and above 45 years, respectively. Regarding occupations, 56% of the total respondents worked in the private sector, 24% were students, and the remaining 20% included civil servants, entrepreneurs, and housewives. In terms of monthly expenditures, 41% of respondents spent more than Rp. 6,000,000, 31% spent between Rp. 3,000,000 to Rp. 6,000,000 per month, and the remaining 28% spent up to Rp. 3,000,000 per month. Among the 100 respondents, the majority preferred facial wash as their commonly used green cosmetic product. Furthermore, 30% and 27% selected green cosmetic products such as serum and sunscreen, respectively.

### Consumer Attitudes Towards Green Cosmetics

Consumer attitudes towards purchasing green cosmetic products can be divided into two influences: the influence on consumer concern and the influence on consumer beliefs. The influence of consumer concern is measured based on their concern for the products they consume, while the influence of consumer beliefs is assessed based on the extent of consumer confidence in a product through their knowledge. Table 1 below illustrates the impact of consumer concern.

Table 1. Influence of Consumer Concerns

No	Description	Consumer Behavior			Average	Conclusion
		Cognitive	Affective	Conative		
1.	Healthier	4,09	4,06	4,18	4,11	Agree
2.	Safer	4,16	4,19	4,17	4,17	Agree
3.	More Nutritious	4,07	4,11	4,09	4,09	Agree
4.	Good Texture and Aroma	3,77	3,93	4,01	3,90	Agree
5.	Noticeable Skin Results	3,97	4,08	4,08	4,04	Agree
6.	Longer Safe Life	3,79	3,92	3,94	3,88	Agree
7.	Better Quality	4,15	4,13	4,18	4,15	Agree

Data processed, 2023

Subsequently, the results indicating the influence on consumer beliefs in purchasing green cosmetics can be seen in Table 2.

Tabel 2. Influence of Consumer Beliefs

No	Descriptive	Average	Conclusion
1.	Made without use chemical ingredients	4,04	Agree
2.	Can prevent skin from potential skin damage	4,16	Agree

Data processed, 2023

### Barriers to Willingness to Pay (WTP)

The barrier values to WTP are used to understand other characteristics of green cosmetics consumers as research respondents. WTP barriers are factors that can influence consumers to stop using green cosmetic products. The WTP values can be seen in Table 3.

Tabel 3. Inhibitors of WTP

No	Description	Average	Conclusion
1.	Higher Price	3,11	Neutral
2.	Difficult to find location	3,00	Neutral

Data processed, 2023

### Analysis of Willingness to Pay for Green Cosmetic Products

Consumer willingness to pay (WTP) for purchasing green cosmetic products is analyzed using the Contingent Value Method (CVM). This is done to determine and understand the extent to which consumers are willing to pay for green cosmetic products. Table 4 shows consumer willingness to pay more for green cosmetic products.

Tabel 4. WTP more for green cosmetics

No	WTP	Frequency	Percentage
1.	Willing to Pay	90	90%
2.	Not Willing to Pay	10	10%

Data processed, 2023

The CVM method used to determine the highest value of products willing to be paid by respondents is through bidding games. The results of the WTP data analysis for green cosmetic products are shown in Table 5.

Tabel 5. Mean Values and Percentage Changes in Prices of Green Cosmetics

No	Product type	Estimated WTP mean	Initial Product Price (Rp)	Percentage Change in Price (%)
1.	Serum	Rp. 123,960	Rp. 95,000	30,48%
2.	Facial Wash	Rp. 98,045	Rp. 80,000	22,56%
3.	Sunscreen	Rp. 102,425	Rp. 75,000	36,57%

Data processed, 2023

## DISCUSSION

The characteristics of the respondents in this study are women aged 26-65 years. A significant portion, 60% of the respondents, falls within the age range of 26-35 years. The second characteristic examined is their occupation, with 56% declaring employment in the private sector. These characteristics align with research on the intention to purchase green cosmetic products, indicating that the age range for purchasing such products is 21-64 years, and the majority of consumers are working women (Bella & Artanti, 2021).

Consumer spending levels influence their decision-making in purchases. Income and lifestyle significantly impact societal consumption patterns (Yulita et al., 2024). Individual consumption expenditures are directly proportional to their income (Persaulian, 2013). In this study, 41% of respondents spent up to Rp. 6,000,000 per month. Regarding the characteristics of respondents, the majority used facial wash, accounting for 43%, while 30% and 27% selected serum and sunscreen as their preferred green cosmetic products.

The discussion also delves into the influence of consumer attitudes in expressing a willingness to pay more for green cosmetic products. Consumer attitudes, categorized in this study as influencing consumer concern and influencing consumer beliefs, mirror research on the willingness to pay for organic rice (Damayanti, 2018). Both studies focus on health-related products. Consumer concern is measured by how much consumers prioritize the beneficial aspects of a product. Concern for a healthier product can be seen as emotional attention consumers have towards a product with specific consequences (Rini et al., 2017).

Positive beliefs about the consequences of a product lead to positive attitudes towards it, and the same holds for negative beliefs. Consumers of green cosmetic products become more confident in the product when it carries a "green product" label, signifying safety in both usage and environmental impact. Results in Table 2 show an average consumer attitude of 4.04 and 4.16, indicating agreement that green cosmetic products without chemical ingredients (safe) and avoiding potential skin damage are preferred.

Furthermore, the analysis examines the inhibitors to Willingness to Pay (WTP) to understand additional characteristics of green cosmetic product consumers, in this case, the research respondents. WTP inhibitors, which might influence consumers to discontinue using green cosmetic products, are significant for loyalty to the product (Muzayanah et al., 2015). Two WTP inhibitors, namely the higher price of green cosmetic products compared to conventional cosmetic products and the difficulty in reordering or finding sales locations for green cosmetic products, are presented in Table 3.

Willingness to Pay (WTP) reflects an individual's willingness to pay for environmental conditions or the assessment of natural resources and natural services to improve environmental quality. In this study, WTP is analyzed using the Contingent Value Method (CVM). The CVM method involves creating a market hypothesis that describes future changes and emphasizes the importance of maintaining health. Results in Table 4 show that 90 out of 100 respondents are willing to pay more for green cosmetic products, indicating an awareness of health importance.

The CVM method, specifically bidding games, is used to determine the highest value respondents are willing to pay for green cosmetic products. The estimation of the highest average WTP for each type of product is presented in Table 5. The results indicate price increases of 30.48% for serum, 22.56% for facial wash, and 36.57% for sunscreen from their initial prices, reflecting consumers' willingness to pay higher prices for quality and environmentally sustainable products.

## CONCLUSION

In conclusion, the majority of respondents in this study are aged 26-35 years, with 60% falling within this age range. The majority of respondents work in the private sector, comprising 56%. Regarding expenditure characteristics, 41% of respondents spend more than Rp. 6,000,000 per month. In terms of the type of green cosmetic products used, 53% choose facial wash as their daily product.

The willingness to pay for green cosmetic products indicates that 90% of respondents are willing to pay more. The average WTP analysis yields values of Rp. 123,960 for serum, Rp. 98,045 for facial wash, and Rp. 102,425 for sunscreen. These results show price increases of 30.48% for serum, 22.56% for facial wash, and 36.57% for sunscreen from their initial prices. This suggests that consumers are willing to pay higher prices for quality and environmentally sustainable products.

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*Pengeluaran Konsumsi Rumah Tangga di Al-Kharaj : Jurnal  
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