GREEN COSMETICS IN INDONESIA: UNRAVELING ATTITUDE-BEHAVIOR GAP AND GENDER MODERATION

Andika
Nadia
Mohamad Najmudin
Ale Bemby Hasibuan
Faculty of Economic and Business, Janabadra University,
Yogyakarta, Indonesia

Abstract: Green cosmetics are becoming increasingly popular as consumers' awareness of the environment grows. This study explores the relationship among Indonesian consumers' attitudes toward green cosmetics, environmental consciousness, behavioral control, subjective norms, product knowledge, purchase intention, and purchasing behavior. Data were collected from 310 respondents through an online questionnaire from various groups of men and women, then analyzed using Descriptive Statistical Analysis and SEM (Structural Equation Modeling). The research findings indicate that attitudes towards green cosmetics significantly influence purchase intention, and environmental consciousness also plays a crucial role in driving purchase intention. Perceptions of behavioral control and subjective norms also significantly affect purchase intention. Product knowledge has a significant impact on attitudes towards green cosmetics. Purchase intention significantly influences actual purchasing behavior. Exciting differences are observed between men and women. Environmental consciousness significantly impacts women's purchase intention, while behavioral control and subjective norms are more dominant in influencing men's purchase intention. The implications of this research are essential for producers and marketers of green cosmetics, offering insights for developing effective marketing strategies. This study highlights the importance of different approaches when targeting male and female consumers, considering the factors influencing their purchase intentions and behavior. These findings contribute to a deeper understanding of consumer behavior related to green cosmetics, encouraging environmentally friendly consumption patterns.

Keywords: Green Cosmetics, Gender Differences, Factual Purchasing, Environmental Consciousness, Purchase Intentions

INTRODUCTION

In recent decades, environmental sustainability has become a central issue in global discussions (Addai et al., 2023; Mensah, 2019; Zhang et al., 2022). Increased public awareness and an increasingly intense series of environmental disasters and climate change drive this phenomenon (Abbass et al., 2022; Maran and Begotti, 2021). This is reflected in the behavior of consumers, who are now more concerned about the environmental impact of the products they consume (Panda et al., 2020). In response, many companies have begun to adopt environmentally friendly practices, fueling the emergence of the sustainable products market (Reddy et al., 2023). One industry that reflects significant growth in this regard is the green cosmetics industry (Amberg and Fogarassy, 2019). Despite increasing global interest in green products, regional variations in their acceptance still exist, raising questions about the factors driving such differences (Wang, 2023).

As one of the most populous countries in Asia, Indonesia is a crucial market for the cosmetics industry (Nurhayati-Wolff, 2023). A Rakuten Insight survey revealed that around 79% of respondents in Indonesia indicated their willingness to pay more for sustainable products, such as green cosmetics (Statista, 2023). Increased interest in sustainable cosmetics is driven by health and environmental awareness and the risks of synthetic chemicals (Martins and Marto, 2023). In addition, local culture and values play a role in shaping perceptions and acceptance of environmentally friendly products (Ghazali et al., 2021). Although Indonesians' interest in eco-friendly cosmetics is growing (Sutikno et al., 2020), actual purchases of these products are still below expectations. Compared to overall cosmetic products, the market share of green cosmetics in Indonesia appears insignificant (Chin et al., 2018). The gap between interest and action is a phenomenon worthy of research. It raises the question: why do Indonesian consumers, despite their high awareness, not reflect their commitment to sustainability in their purchasing behavior? This phenomenon is called the "green attitude-behavior gap" (Park and Lin, 2020; Qi et al., 2020). A theory often used to explain this phenomenon is the Theory of Planned Behavior (TPB), which highlights the importance of purchase intentions in determining consumer behavior (ElHaffar et al., 2020).

Indonesia was chosen as the object of research because of the paradoxes in this country. With its incredible natural wealth and biodiversity, environmental awareness in Indonesia should be a priority. Although the cosmetics industry in Indonesia is growing, and many consumers show interest in eco-friendly products, the actual adoption of these products still needs to grow (Chin et al., 2018). We see an opportunity to dig deeper into the potential factors that may influence this phenomenon.

The Theory of Planned Behavior (TPB) has been widely applied in understanding consumer behavior. However, its application within the Indonesian milieu, especially in green cosmetics, remains sparse (Askadilla and Krisjanti, 2017). To our knowledge, no research in Indonesia has combined the constructs of environmental awareness and product knowledge and considers gender as a potential moderating variable. Chen and Deng (2016) posit that product knowledge enriches consumers' comprehension of products, strengthening rational evaluations and influencing purchase decisions. Concurrently, the rising global emphasis on environmental sustainability refines this theoretical perspective by incorporating an understanding of environmental consciousness. As the global discourse on sustainability intensifies, consumers are increasingly aware of mitigating harmful ecological impacts through well-informed purchasing choices. Such an evolving environmental consciousness directs consumer preferences toward eco-friendly products, resulting in a more favorable purchase assessment (Khaleeli and Jawabri, 2021). While the TPB's wide adoption is recognized, its adaptation and augmentation in the Indonesian setting—particularly with the inclusion of variables such as environmental awareness, product knowledge, and gender as potential moderating factors—offer a novel perspective. This avenue bridges a literature gap and sheds light on the intricacies and distinctiveness of Indonesian consumer behavior.

Understanding the factors influencing consumers' decisions to purchase environmentally friendly cosmetics has become increasingly crucial in Indonesia. This research is distinctive for incorporating additional variables into the Theory of Planned Behavior (TPB) model, using gender as a

moderating variable. By examining the perceptions of Indonesian consumers towards green products and considering their unique cultural and social contexts, this study seeks to elucidate the critical determinants of their buying decisions. These insights offer invaluable guidance for marketers in devising strategies that resonate with local consumers' specific needs and preferences.

LITERATURE REVIEW
Green Cosmetics

Consumer behavior regarding environmentally friendly cosmetic products in developing countries has been explored by researchers (ElHaffar et al., 2020; Jaini et al., 2020). However, previous studies on this topic could be more extensive, warranting further investigation (Shimul et al., 2022). His study examines Indonesian consumers' purchasing behavior toward green cosmetics.

In the 21st century, heightened global environmental consciousness has prompted the cosmetics industry to produce environmentally friendly products (Quoquab et al., 2020). Cosmetics are dubbed as "green" or frequently termed "natural and organic cosmetics" (Chin et al., 2018) when they primarily contain plant-based active ingredients, including minerals, rather than those synthesized in laboratories. It is imperative that these products not only employ eco-friendly processes but also source ingredients from organic farming practices. To further reduce environmental impact, it is optimal for these cosmetics to be sourced near the production sites or to employ sustainable transportation methods (Dini and Laneri, 2021; Rocca et al., 2022). This research uses "green cosmetics" to delve into consumer behavior. Consumers are shifting towards green cosmetics due to concerns about the long-term effects of chemical cosmetics on health and the environment (Quoquab et al., 2020). The use of green cosmetics aligns with a lifestyle focused on self-care and the environment (Lin et al., 2018), with many companies formulating environmentally friendly cosmetic products to support environmental sustainability.

Theory of Planned Behavior and Extended Theory of Planned Behavior Model

The Theory of Planned Behavior (TPB), introduced by Ajzen in 1991, is a widely accepted framework for understanding human social behav-

ior. It emphasizes the significance of individual intentions in decision-making and predicts human behavior based on personality and psychological factors (Ajzen, 1991; Juschten et al., 2019). The core of TPB lies in motivational factors, where stronger intentions lead to a higher likelihood of carrying out actions. Intentions are immediate predictors of behavior, influenced by individual willingness and control over the intended behavior (Kamalanon et al., 2022).

TPB considers attitude formation, subjective norms, and perceived behavioral control as critical determinants of behavioral intentions. The perception of action characteristics influences attitudes, while subjective norms reflect social influence and normative beliefs. Perceived behavioral control depends on individuals' perceptions of available resources and opportunities (Ajzen, 1991).

HYPOTHESIS DEVELOPMENT
Purchase Intention and Actual Purchase Behavior

The Theory of Planned Behavior (TPB) emphasizes that intention is a crucial factor influencing consumer behavior (Ajzen, 1991; Fishbein and Ajzen, 1983). Intention is an individual's willingness to behave (Ajzen, 1991). Studies by (Singh and Verma, 2017) reveal a positive correlation between intention and action. Researchers such as (Mohammed, 2020). Recognize the significance of behavioral intention in measuring actual customer behavior. However, most existing studies only assess the intention to purchase organic products without considering the link between purchase intention and actual purchase behavior (Bai et al., 2019). The "Theory of Planned Behavior" also acknowledges the importance of measuring the actual consumer behavior, not just intention (Ajzen, 1991). Consequently, this study examines the actual purchase of green cosmetics concerning the intention to buy them.

H1: The intention to buy green cosmetics has a significant influence on consumers' actual purchasing behavior.

Key Cognitive Determinants of Purchase Intention

The Theory of Planned Behavior (TPB) emphasizes behavioral intentions as a critical factor in explaining consumer actions, relying on three

cognitive variables: attitude toward behavior, subjective norms, and perceived behavioral control (Ajzen, 1991). When considering green cosmetics, an individual's attitude towards the product is crucial in shaping their purchase intention. Favorable evaluations of green cosmetics, driven by their benefits for individuals and the environment, tend to encourage purchase behavior, while negative perceptions may deter individuals from purchasing. Hence, an appreciation for the environment becomes essential before individuals are inclined to buy eco-friendly products (Witek and Kuźniar, 2021).

Numerous studies have shown a strong association between attitude and the intention to purchase eco-friendly products (Jan et al., 2019; Limbu et al., 2022; Warganegara and Hendijani, 2022). For instance, (Kim and Chung, 2011) found a positive and significant relationship between consumer attitude and the intention to buy organic personal care products, which aligns with similar findings in studies by (Chin et al., 2018), (Hsu et al., 2017), and (Ghazali et al., 2017). Additionally, consumer attitudes have been found to influence the desire to purchase paraben-free cosmetics (Hansen et al., 2012).

However, (Trivedi et al., 2018) reported inconsistent results regarding the influence of environmental attitudes on green purchase intention. While environmental attitude focused on individual responsibility significantly affects the intention to purchase green products (Leonidou et al., 2010),

attitudes centered around societal needs, such as social movements, laws, and politics to protect the environment (Leonidou et al., 2010), do not appear to have a significant influence on green purchase intention. Our study aims to clarify the relationship by proposing a hypothesis to address this inconsistency:

H2: Attitude towards green cosmetics significantly influences consumers' purchase intention.

Subjective norms (SN) refer to social pressures perceived subjectively by individuals, which can influence their engagement in specific behaviors. Prior studies have examined the impact of subjective norms on purchase intentions. For instance (Park and Lin, 2020) found a positive effect on the intention to purchase recycled products, while (Jung et al., 2021) reported a positive influence on consumers' intention to buy sustainable clothing products in China; similarly, in the context of developing countries (Yadav and Pathak, 2016). However, some studies have shown contradictory results, such as (Kumar et al., 2017), who found no significant impact on consumers' intention to buy green products in more collectivist societies. Similarly, (Rausch and Kopplin, 2021) also found no significant influence on green purchasing behavior. To address this inconsistency, we propose the following hypothesis:

H3: Subjective norms significantly influence purchase intention.
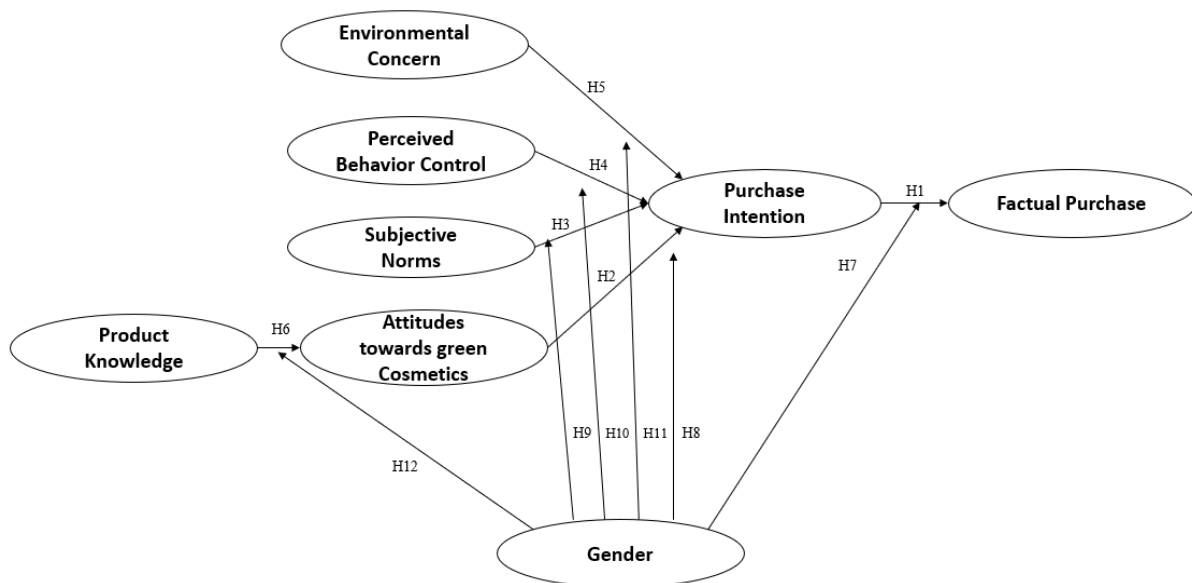

Figure 1. Research Framework

Perceived behavioral control (PBC) refers to an individual's perception of the ease or difficulty in performing a specific behavior (Ajzen, 1991). It reflects one's estimation of available resources as opportunities or barriers to adopting a particular behavior. If someone feels they have high control over the behavior, this perception will encourage their involvement in that behavior (Li and Wu, 2019). Conversely, if they perceive difficulty, it may discourage them from continuing the action.

Previous studies have found a significant relationship between perceived behavioral control and intention. For example, the perceived behavioral control by consumers has a positive and significant influence on their intention to use reusable bags while shopping (Wang and Li, 2022) and to purchase green food (Qi and Ploeger, 2021).

H4: Perceived Behavior Control has a significant impact on purchase intention.

Environmental Consciousness and Purchase Intention

Environmental Consciousness refers to the awareness of environmental issues and the willingness to contribute to solving them (Paola et al., 2020). It involves individuals' perceptions of the environment, often accompanied by common emotions such as worry, dissatisfaction, uncertainty, and empathy (Kumar et al., 2017; O'Connor and Assaker, 2021). Environmental Consciousness is considered a social-altruistic value orientation that fosters care for the environment and impacts the lives of others (Jan et al., 2019). Despite the increased awareness of environmental issues, consumption levels continue to rise (Grooten and Almond, 2018). This disparity between heightened Environmental Consciousness and higher consumption levels warrants further investigation into how environmental consciousness, directly and indirectly, influences the intention to engage in sustainable consumption behavior.

Previous research has shown that Environmental Consciousness directly and significantly influences green consumption intention (Kamalanon et al., 2022; Park and Lin, 2020; Prakash and Pathak, 2017). However, most prior studies, based on the Theory of Planned Behavior (TPB), treat Environmental Consciousness as an antecedent of attitude rather than behavioral intention (Chen et al., 2021; Chwialkowska et al., 2020). Building upon the extension of TPB, this study aims to confirm the direct influence of Environmental Consciousness on consumers' intention to purchase green cosmetic products, proposing the hypothesis:

H5: Environmental Consciousness significantly influences purchase intention.

Product Knowledge and Attitude towards Green Cosmetics

Knowledge of environmentally friendly products is crucial in shaping consumers' attitudes and behaviors towards such products (Kim and Stepchenkova, 2020). This knowledge can be acquired through various means, such as training, workshops, educational programs, and real-life experiences (X. Chen et al., 2022). Studies have shown that higher levels of product knowledge positively influence consumers' overall evaluation of environmentally friendly products (Cho et al., 2013). Understanding the benefits of green products compared to conventional ones leads to better attitudes and intentions toward sustainable consumption (Sun and Wang, 2020).

However, there have been conflicting findings in previous research. Some studies have indicated a positive relationship between knowledge and attitudes toward environmentally friendly products (Joshi and Rahman, 2016; Liobikiene et al., 2016), while others found no significant relationship (Paço et al., 2018) or even a negative relationship between knowledge and attitudes (Erhabor and Don, 2016) Given these inconsistent findings, this research aims to revalidate the relationship between environmental product knowledge and pro-environmental behavioral attitudes, forming hypothesis:

H6: Product knowledge significantly influences attitudes towards green cosmetics.

Gender as a Moderating Variable

Existing research indicates that sociodemographic factors, particularly gender, can influence the development of green consumption habits (Costa-Pinto et al., 2014). Gender plays a significant role in consumer behavior across various domains, including green consumption (Kreczmańska-Gigol and Gigol, 2022; Phillips and Englis, 2022). However, there is inconsistent empirical support for the extent of gender differences in predicting consumer green behavior (Brough et al., 2016;

Kreczmańska-Gigol and Gigol, 2022; Phillips and Englis, 2022).

Some studies suggest moderate gender differences in green knowledge and consumption behavior (Costa-Pinto et al., 2014; Zhao et al., 2021), while others do not find such distinctions (Bailey et al., 2018). There are conflicting findings on gender-related environmental consciousness, with some research showing women exhibit stronger pro-environmental attitudes (Garcia-Vazquez et al., 2022; Xiao et al., 2022) and others suggesting men may have environmental knowledge and more profound concern for environmental issues (Migheli, 2021; Visser and Dlamini, 2021; Zhao et al., 2021)

Regarding Perceived Behavior Control and subjective norms, men and women are influenced by their ability to make product purchases. However, men may emphasize their ability and control when making choices, while women may be more open to changing preferences based on their beliefs (Shin et al., 2020). Some research indicates that women tend to be more agreeable or conform to rules than men (Eagly and Wood, 2000). Nevertheless, recent studies show a different relationship, with men being more responsive to subjective norms in sharing information intentions (Tseng, 2022). In conclusion, research on gender differences in green consumption behavior remains ambiguous. Further studies are needed to understand how gender influences the relationship between green attitudes and behavior, especially in the context of green cosmetics.

Table 1. Operational Research on ATGC, PI, SN, and PBC Variables

Variable Names	Item Code	Indicator	Loading Factor
Attitude Towards Green Cosmetics (Limbu et al., 2022; Shimul et al., 2022)	ATGC	1. Feeling proud when purchasing green cosmetics	0.865
		2. The use of eco-friendly products is always prioritized	0.869
		3. Firm belief exists that green cosmetics are more effective than conventional ones	0.88
		4. The preference would be green, given the choice between green and conventional cosmetics at the same price.	0.854
Purchase Intention (Chin et al., 2018)	PI	1. They will be more inclined to buy environmentally friendly cosmetic products.	0.924
		2. They intend to purchase green cosmetic products immediately after running out of their current cosmetic products.	0.882
		3. I intend to recommend green cosmetic products to others.	0.859
Subjective Norms (Promotosh et al., 2011)	SN	1. Preferential selection of environmentally friendly cosmetics occurs when recommended by a family member	0.862
		2. They tend to choose green cosmetics when they receive recommendations from friends.	0.865
		3. Parents have been taught to differentiate between green and conventional cosmetics	0.785
		4. Peers have assisted in the acquisition of knowledge regarding the differentiation between green cosmetics and conventional ones	0.844
		5. Social media can significantly influence the decision-making process of purchasing green cosmetics.	0.636
Perceived Behavior Control (Sun and Wang, 2020)	PBC	1. Having sufficient funds to purchase green cosmetic products;	0.743
		2. Being aware of the location to buy green cosmetic products;	0.894
		3. It is being able to decide whether or not to purchase green cosmetic products.	0.817

Table 2. Operational Research on EC, PK, and APB Variables

Variable Names	Item Code	Indicator	Loading Factor
Environmental Consciousness	EC	1. Opting for Green Cosmetics is preferable as it helps reduce environmental issues.	0.899
(Kapoor et al., 2019)		2. Choosing Green Cosmetics is a better option as it is environmentally safe.	0.924
		3. Prefer Green Cosmetics due to natural ingredients	0.882
		4. Opting for Green Cosmetics is a way to contribute to a healthier environment.	0.859
Product Knowledge	PK	1. Know a lot about green cosmetic products.	0.827
		2. The purchasing experience with green cosmetic products has been good	0.881
(Ghazali et al., 2017)		3. Understand the benefits of green cosmetic products	0.866
		4. The knowledge of eco-friendly cosmetic products is better than that of those known.	0.815
Actual Purchase Behavior	APB	1. Often, they buy green cosmetic products.	0.882
		2. Switched to purchasing green cosmetic products	0.878
(Al Mamun et al., 2018)		3. Buy green cosmetic products because of their positive contribution to the environment.	0.88
		4. Buy green cosmetics even though they are more expensive than conventional cosmetic products.	0.832
		5. What percentage of all skincare products you currently use are made from eco-friendly cosmetics?	

RESULTS
Respondent Characteristics

Table 3 and 4 shows the quantity and percentage of samples based on gender, age, education level, income level, purchasing frequency, most frequently used brand, and the province of origin of the respondents. According to Tables 3 and 4, the majority of respondents are female (64%), aged between 17 and 27 years (85%), have an education level of DI-IV/S1 (65%), have an income level of <1 million (45.8%), purchase products once a month (76%), with Wardah being the most commonly used brand by women (39%). Kahf is the most used brand by men (41.9%). Additionally, the respondents come from 26 provinces in Indonesia, with the majority originating from Southeast Sulawesi (31%). Thus, the respondents are relatively representative, reflecting the gender differences and green cosmetic consumption in Indonesia.

In our quest to authenticate cosmetics brands' 'green' claims, we encountered a significant obstacle: the absence of an official green or natural cosmetics registry in Indonesia. However, this obstacle prompted us to adopt an innovative methodology. We carefully analyzed the ingredient list of each product and evaluated the brand's dedication to sustainability. Our ultimate goal is to ensure the accuracy of each product's 'green' statement. Central to our approach was a thorough review of the brand's official website to ensure that the product did not contain harmful chemicals, had not undergone animal testing, and was primarily composed of natural ingredients (Limbu and Ahamed, 2023).

Table 3. Sample Descriptions

Category	Subcategory	Frequency	%	Cumulative percent
Gender	Men	112	36%	36%
	Female	198	64%	100%
Age	17-27	263	85%	85%
	28-42	40	13%	98%
	43-58	7	2%	100%
Education Level	<High School	9	3%	3%
	High School	84	27%	30%
	Diploma I/II/III/Bachelor's Degree	201	65%	95%
	Master's/Doctoral Degree	16	5%	100%
Income Level	<1 million	142	45.8%	45.8%
	1-2 million	80	25.8%	71.6%
	3-5 million	64	20.6%	92.2%
	6-8 million	14	4.5%	96.7%
	>8 million	10	3.3%	100%
Frequency of purchase	Once a month	236	76%	76%
	Every two months	43	14%	90%
	Three times a month	9	3%	93%
	Others.	22	7%	100%

Table 4. Sample Descriptions

Category	Subcategory		Frequency
The top 5 most preferred green cosmetic brands		Brand	
	Men	Kahf	47
		Nivea Men Cream	24
		Ms. Glow for Men	8
		Avoskin	3
		Garnier Color Naturals	2
	Female	Wardah	77
		N'Pure	31
		Sariayu Martha Tilaar	26
		Innisfree	19
		Mustika Ratu	17
The five provinces with the highest number of respondents	Sulawesi Tenggara		96
	Bangka Belitung		57
	Jawa Tengah		26
	Kalimantan Timur		25
	DIY (Daerah Istimewa Yogyakarta)		14

Data Analysis Results

The research methodology involved conducting an outer model or measurement model analysis to assess the validity and reliability of the measured model based on specific criteria. The criteria examined were convergent validity, assessed through loading factors. Discriminant validity was evaluated using AVE (Average Variance Extracted), and composite reliability was assessed through Composite Reliability. The results of the convergent validity test in Tables 1 and 2 show that each indicator shows a factor loading above 0.6, which indicates its validity as it meets the predetermined criteria (> 0.6). In addition, the discriminant test shows that all variable indicators are considered valid, with each variable having an AVE value greater than 0.50. Furthermore, the Composite Reliability measurement results show that the composite reliability for all constructs exceeds 0.70, which indicates a high level of consistency and stability. Therefore, this instrument is reliable for measuring the variables under study and has been fully established.

Evaluation of Model's Goodness and Fit

This research employs the Partial Least Squares (PLS) analysis, a variance-based method within the Structural Equation Modeling (SEM) framework. The PLS method tests the theoretical model, emphasizing predictive study. To determine the appropriateness of the proposed model, we utilize various evaluation measures that have been established. Notably, these measures include the R square, Q square (Hair et al., 2019), and the Goodness of Fit Index (GoF Index), as established by Henseler and Sarstedt (2013).

In Table 5, our analysis shows that the impact of environmental knowledge on attitudes towards environmentally friendly cosmetics has an R Square value of 0.386. It suggests a relatively weak influence. However, when examining purchase intention, factors such as PBC, subjective norms, attitudes towards green cosmetics, and environmental awareness exhibit a moderate influence, as reflected by an R Square value of 0.644. In addition, these six factors also moderately influence purchasing behavior, with an R Square value of 0.651. This finding follows the criteria set by Hair et al. (2011).

Table 5. R Square and Q Square Test Results

	R Square	Q Square
PI	0.644	0.472
APB	0.651	0.485
ATGC	0.386	

The criteria set by Hair et al. (2019) suggest that the Q square value of 0.472 for the purchase intention variable implies a moderate prediction accuracy. Similarly, the Q square value for the actual purchase behavior stands at 0.485, denoting a moderate prediction accuracy for this research context. Finally, the analysis results in Table 6 show a GoF Index value of 0.538. It means that the empirical data in this study provides a strong explanation of the measurement model, showing a high level of fit following the criteria outlined by Ghozali and Latan (2015).

Table 6. GoF Index

Mean Communality	Mean R square	GoF Index
0.51	0.563	0.538

Table 7. Hypothesis Test Results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	Conclusion
ATC -> PI	0.137	0.138	0.067	2.042	0.041	Accepted
EC -> PI	0.326	0.325	0.063	5.166	0.000	Accepted
PBC -> PI	0.226	0.229	0.06	3.788	0.000	Accepted
SN -> PI	0.274	0.271	0.061	4.49	0.000	Accepted
PK -> ATC	0.623	0.625	0.04	15.521	0.000	Accepted
PI -> FP	0.808	0.808	0.024	33.12	0.000	Accepted

Table 8. PLS MGA Significance Test Table

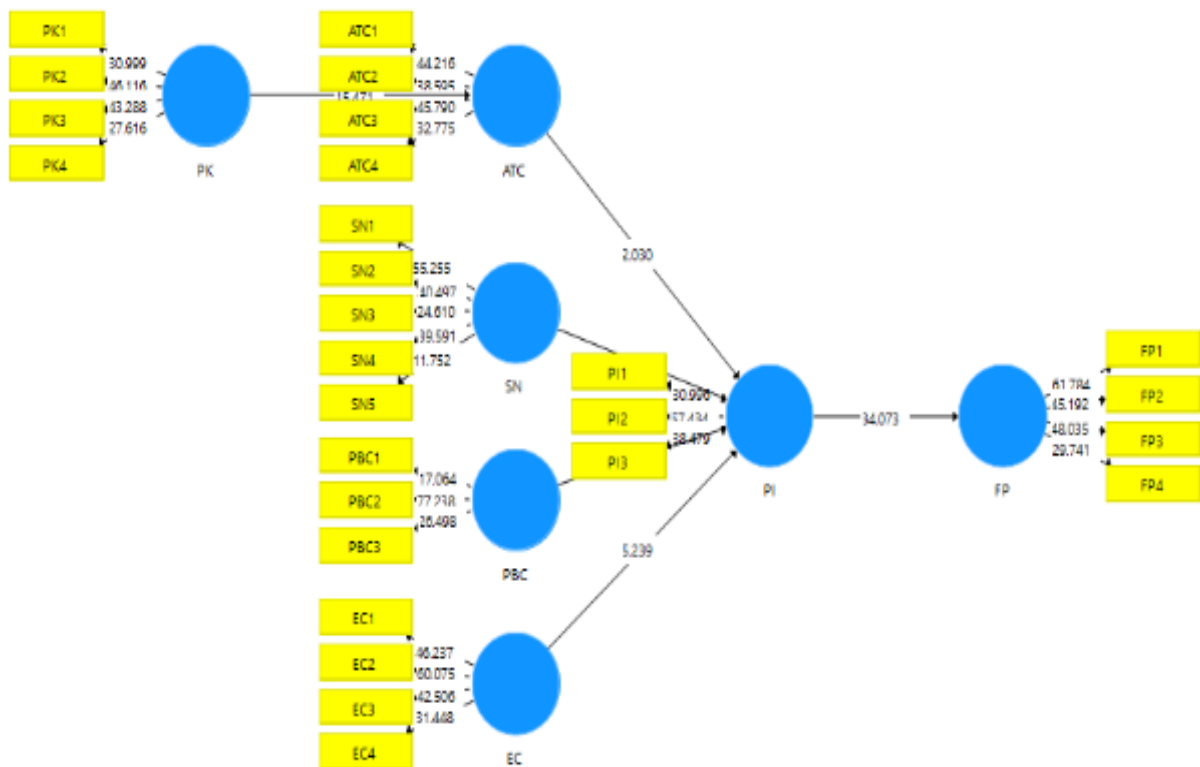|	Path Coefficients-diff (Men - Women)	t-Value (|Men vs Women|)	p-Value (Men vs. Women)
ATC -> PI	-0.092	0.696	**0.488**
EC -> PI	-0.286	2.552	0.012
PBC -> PI	0.222	2.178	0.031
SN -> PI	0.247	2.287	0.024
PK -> ATGC	0.013	0.162	**0.872**
PI -> FP	0.023	0.479	**0.632**

Figure 2. Bootstrapping Model after Indicator Test

DISCUSSION
Purchase Intention on Actual Purchase Behavior and Gender Moderation

Our study unveiled compelling insights into the connection between purchase intention and buying behavior for eco-friendly cosmetic products, highlighting a robust positive correlation: the more substantial the intention, the higher the likelihood of making an eco-friendly purchase. These results echo Al Mamun et al. (2018) findings, who found that purchase intention significantly predicts green purchasing behavior. Similarly, a Portugu-ese study by Fontes et al. (2021) reaffirmed this connection, underscoring the profound impact of purchase intention within green marketing.

Several factors explain these observations. Firstly, the current consumer demographic is evolving to be more eco-conscious. Rising concerns about environmental degradation, global warming, and other pressing environmental issues are making consumers more intent on reducing their carbon footprints. One actionable way they can do this is by purchasing eco-friendly products. As they grasp the broader consequences of their purchas-

ing decisions, their actions mirror their intentions more closely (Yue et al., 2020). Furthermore, the PLS MGA results indicate no significant difference between male and female groups concerning the relationship between Purchase Intention for green cosmetic products and Actual Purchase Behavior. In simpler terms, both male and female groups exhibit similar tendencies in the link between purchase intention and actual purchase behavior, with no notable difference in the strength of this relationship between the genders.

Attitudes towards Green Cosmetics on Purchase Intention and Gender Moderation

The analysis results show that a positive attitude towards environmentally friendly cosmetics significantly affects purchase intention. This finding aligns with previous research by Kim and Chung (2011), which also found a positive and significant relationship between consumer attitudes and intention to purchase organic personal care products. Similarly, Chin et al. (2018), Hsu et al. (2017), and Ghazali et al. (2017) supported these results in their respective studies. Additionally, Hansen et al. (2012) found that consumer attitudes influence the desire to purchase paraben-free cosmetics. It implies that individuals with more positive views of green cosmetics are likelier to buy these products. In conclusion, individuals with a more positive view or attitude towards green cosmetics tend to have a stronger intention to purchase and use these products. It emphasizes the importance of promoting awareness and education to consumers about the benefits and advantages of green products to increase their purchase intention (Pop and Zsuzsa, 2020). The PLS MGA test did not show statistically significant differences in path coefficients between attitudes towards green cosmetics and purchase intentions in male and female groups. Therefore, both genders exhibit a similar pattern in their relationship between attitudes toward green cosmetics and purchase intentions. Companies in the cosmetics industry can design marketing strategies that cater to males and females without needing differentiation.

Subjective Norms on Purchase Intention and Gender Moderation

The analysis of this study shows a positive and significant effect of subjective norms on the purchase intention of green cosmetic products. This finding is consistent with previous research. For example, Park and Lin (2020) found a positive and significant impact of subjective norms on the intention to purchase recyclable products. Similarly, Jung et al. (2021) reported a positive influence of social norms on consumers' intention to purchase sustainable clothing products in China. These findings emphasize the critical role of social factors such as family, friends, and social media in purchasing environmentally friendly cosmetics. In other words, higher subjective norms correlate with stronger intentions to purchase green cosmetics.

The PLS MGA test results further confirm the positive influence of subjective norms on purchase intention across all subgroups, including both males and females. Interestingly, the impact is more pronounced in the male subgroup compared to the female subgroup. This finding aligns with Wu et al. (2021), who also discovered a more substantial influence of subjective norms on purchase intention in males than females.

These research findings shed light on consumer behavior regarding green cosmetics in Indonesia. When buying green cosmetics, men tend to be influenced by others' opinions, particularly from social media. On the other hand, women rely more on their knowledge and personal preferences. This gender-based difference may be attributed to women's general familiarity with cosmetic products (Limbu et al., 2022). Men, especially those belonging to Generation Z, may be relatively new to green cosmetic products.

Perceived Behavioral Control on Purchase Intention and Gender Moderation

The analysis results indicate a significant beneficial effect of perceived behavioral control on purchase intention in the sustainability-focused cosmetics industry. This finding is in line with previous research. For example, Wang and Li (2022) found that perceived behavioral control positively influences consumers' intention to use reusable shopping bags. Similarly, Qi and Ploeger (2021) observed that perceived behavioral control positively impacts consumers' intention to purchase food products. This suggests that psychological factors, such as consumer perceptions and environmental awareness, play an essential role in purchasing eco-friendly cosmetics. Consumers with higher

perceived behavioral control are more aware of the environmental consequences of their choices, making them more likely to choose eco-friendly cosmetics.

The PLS MGA analysis indicates differences in the influence of perceived behavioral control on the purchase intention of green cosmetics between men and women. Men show a more substantial impact than women in their purchase intention through perceived behavioral control. It aligns with research by Shin et al. (2020), stating that men tend to have more substantial behavioral control over purchase intentions than women. Men are generally more rational and more conservative in considering their purchasing decisions. At the same time, women tend to be more open to changing their choices based on beliefs, even with sufficient resources.

Environmental Consciousness on Purchase Intention and Gender Moderation

The analysis results show that environmental awareness positively and significantly affects the purchase intention of cosmetic products. Individuals with higher environmental consciousness are more likely to be interested in buying eco-friendly cosmetic products. It aligns with previous research by Mohd Suki (2016), which found that environmentally conscious individuals prefer green-labeled products. (Kamalanon et al., 2022). It also supports this finding, indicating that consumers' environmental awareness is a significant antecedent of purchase intention.

It underscores the critical role of a deep understanding and awareness of environmental issues in shaping consumer choices, particularly regarding cosmetics. Environmentally conscious individuals are driven by existing trends and deeply rooted beliefs and values about environmental conservation (Yue et al., 2020). Consumers' inclination to choose environmentally friendly cosmetic products is a testament to their commitment to minimizing environmental damage and supporting companies that align with their environmentally-centric values.

Moreover, the PLS MGA test reveals that the impact of environmental consciousness on purchase intention differs based on gender, with a more dominant effect observed among females than males. This gender moderation is statistically sig-

nificant and suggests that environmental consciousness may substantially influence the intention to purchase among females. These results are consistent with similar research conducted by Xiao et al. (2022), Deng et al. (2020) in China, and Garcia-Vazquez et al. (2022) in Spain, highlighting the more vital pro-environmental attitude of women.

In marketing and consumer behavior, understanding the role of environmental consciousness is crucial for effectively promoting green cosmetic products. Companies targeting female consumers should emphasize environmental values and eco-friendly aspects in their strategies, as these efforts can effectively attract female customers. On the other hand, marketing toward male consumers should consider other factors that align with their preferences and needs, such as product quality and effectiveness (Jerndahl and Naess, 2018).

Product Knowledge on Attitudes towards Green Cosmetics and Gender Moderation

The analysis shows that product knowledge significantly affects attitudes towards environmentally friendly cosmetics. This finding aligns with previous studies by Cho et al. (2013) and Sun and Wang (2020), which emphasize the critical impact of product knowledge on consumers' pro-environmental behavior and their understanding of the benefits of green products. Understanding the benefits of green products leads to more environmentally friendly attitudes and sustainable consumption intentions.

In this study, we found that consumers equipped with comprehensive product information tend to favor eco-friendly cosmetics. This preference likely arises from their in-depth understanding of the environmental consequences associated with their product choices. Such well-informed consumers are likely aware of the harmful impacts of chemicals commonly used in the cosmetics industry (Lin et al., 2018). As a result, they are drawn towards eco-friendly alternatives to protect the environment. Moreover, as their understanding of cosmetics deepens, their admiration for eco-friendly products increases. This heightened appreciation is attributed to their recognition of such products' multiple benefits for their skin, health, and the broader environment. In essence, profound product knowledge cultivates a richer understanding and appreciation for environmentally-conscious

products. Interestingly, the PLS MGA test results indicate no significant differences between men and women in how product knowledge affects their attitudes toward green cosmetics. It suggests that both genders contribute similarly to the positive attitudes, likely due to having comparable levels of product knowledge.

IMPLICATIONS

Marketers and producers of green cosmetics should prioritize environmental values and eco-friendly aspects in their marketing strategies, mainly when targeting the female group. Females show a more dominant influence of environmental consciousness on purchase intention, and marketing efforts should highlight sustainability benefits that appeal to women. For the male group, marketing should consider other aspects, such as product quality and effectiveness, besides environmental issues.

Psychological factors, specifically perceived behavioral control, are crucial in buying green cosmetics. Companies targeting the male group should focus on raising awareness and understanding of the benefits of green cosmetic products to create a more positive behavioral control. For the female group, marketing efforts should emphasize sustainability benefits.

Social factors, represented by subjective norms, significantly influence purchasing green cosmetics. Marketers should consider the influence of subjective norms, especially for the male subgroup, as they tend to consider the opinions of others before purchasing green cosmetics. For the female subgroup, marketers should consider women's reliance on their knowledge and personal preferences when purchasing.

Enhancing consumers' product knowledge can increase their interest and acceptance of green cosmetic products. Marketers should aim to educate consumers about sustainability and eco-friendly products to promote more knowledge and awareness among consumers. Understanding the purchase intention of target customers is crucial for environmentally friendly product manufacturers and marketers. Both male and female groups show consistency between their purchase intentions for green cosmetic products and their actual purchasing behavior, suggesting that consumers tend to follow through with their purchase intentions. It indicates the importance of aligning marketing strategies with consumers' intentions to maximize sales and uptake of green cosmetics.

RECOMMENDATIONS

Here are the recommendations for further research in consumer behavior related to green cosmetics: (1) Conduct a comparative study between consumers who use green cosmetics and conventional products. Such research can provide deeper insights into these groups' differences in attitudes, purchase intentions, and buying behaviors. Additionally, this study can clarify the reasons behind consumer choices in selecting specific cosmetic products. (2) Investigate further the factors that hinder consumers from switching to green cosmetics. Is higher pricing a constraint? Or is there a lack of awareness regarding the benefits of green cosmetics products? Knowing these factors will help in designing strategies to overcome these barriers. (3) In addition to surveys, qualitative research such as in-depth interviews or focus group discussions can provide deeper insights into consumers' perceptions, motivations, and experiences related to green cosmetics.

The limitations of this research are as follows: (1) The study's sample size is confined to a specific region or age group, potentially leading to incomplete representation of the overall consumer population. The findings may not apply to a broader demographic. (2) Our research faced challenges due to the absence of an official list of 'green or natural' cosmetics in Indonesia. As a result, we relied heavily on brand websites and listed ingredients to evaluate their 'green' claims. This approach may have biases and potential inaccuracies as no third-party validation was available. (3) The data collection method used in this research surveys susceptible to biases and subjective interpretations by respondents. Some answers may be influenced by social desirability or personal preferences rather than being entirely truthful. (4) The analysis should have included other influential variables like cultural and economic aspects that affect consumer behavior towards green cosmetics despite attempting to analyze various factors. (5) The study reflects consumer behavior during its time, but attitudes and behaviors can evolve due to changing trends and new information about green cosmetic products.

CONCLUSIONS

In conclusion, the study revealed several key insights into the factors influencing purchase intention and behavior toward environmentally friendly cosmetics. Specifically, positive attitudes towards eco-friendly cosmetics, driven by environmental consciousness, significantly drove purchase intention. Additionally, perceived behavioral control emerged as a crucial factor, especially among men, while subjective norms substantially impacted purchase intention among men more than women. Furthermore, product knowledge positively affected attitudes towards eco-friendly cosmetics, with no significant gender differences observed. Ultimately, the research highlighted that purchase intention is a critical determinant of purchasing behavior for eco-friendly cosmetics, regardless of gender. These findings underscore the importance of fostering positive attitudes, environmental consciousness, and product knowledge to promote adopting eco-friendly cosmetic products among consumers.

REFERENCES

Abbass, K., Qasim, M. Z., Song, H., Murshed, M., Mahmood, H., and Younis, I. 2022. A Review of the Global Climate Change Impacts, Adaptation, and Sustainable Mitigation Measures. *Environmental Science and Pollution Research*, 29(28), pp. 42539–59. DOI: 10.1007/s11356-022-19718-6.

Addai, K., Serener, B., and Kirikkaleli, D. 2023. Can Environmental Sustainability Be Decoupled from Economic Growth? Empirical Evidence from Eastern Europe Using the Common Correlated Effect Mean Group Test. *Regional Sustainability*, 4(1), pp. 68–80. DOI: 10.1016/j.regsus.2023.03.003.

Ajzen, Icek. 1991. The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, 50, pp. 179–211. DOI: 10.47985/dcidj.475.

Al Mamun, A., Mohamad, M. R., Yaacob, M. R., and Mohiuddin, M. 2018. Intention and Behavior towards Green Consumption among Low-Income Households. *Journal of Environmental Management*, 227(August), pp. 73–86. DOI: 10.1016/j.jenvman.2018.08.061.

Amberg, Nora and Fogarassy, Csaba. 2019. Green Consumer Behaviour in Cosmetic Market. *Resources*, 2019, 8(137), pp. 1–19.

Askadilla, Wilhelmina Leli and Krisjanti, Mahestu N. 2017. Zrozumienie Zachowania Indonezyjskich Klientów Dotyczącego Ekologicznych Produktów Kosmetycznych: Teoria Planowanego Modelu Zachowania. *Polish Journal of Management Studies*, 15(2), pp. 7–15. DOI: 10.17512/pjms.2017.15.2.01.

Bai, L., Wang, M., and Gong, S. 2019. Understanding the Antecedents of Organic Food Purchases: The Important Roles of Beliefs, Subjective Norms, and Identity Expressiveness. *Sustainability (Switzerland)*, 11(11). DOI: 10.3390/su11113045.

Bailey, A. A., Mishra, A. S., and Tiamiyu, M. F. 2018. Application of GREEN Scale to Understanding US Consumer Response to Green Marketing Communications. *Psychology and Marketing*, 35(11), pp. 863-75. DOI: 10.1002/mar.21140.

Brough, A. R., Wilkie, J. E. B., Ma, J., Isaac, M., and Gal, D. 2016. Journal of Consumer Research Advance Access, Published March 25, 2016 1. *Journal of Consumer Research Advance*, pp. 1–69.

Chen, C. F., Eccarius, T., and Su, P. C. 2021. The Role of Environmental Concern in Forming Intentions for Switching to Electric Scooters. *Transportation Research Part A: Policy and Practice*, 154(1727), pp. 129–44. DOI: 10.1016/j.tra.2021.10.010.

Chen, Kai and Deng, Ting. 2016. Research on the Green Purchase Intentions from the Perspective of Product Knowledge. *Sustainability (Switzerland)*, 8(9). DOI: 10.3390/su8090943.

Chen, L., Wu, Q., and Jiang, L. 2022. Impact of Environmental Concern on Ecological Purchasing Behavior: The Moderating Effect of Prosociality. *Sustainability (Switzerland)*, 14(5). DOI: 10.3390/su14053004.

Chen, X., Rahman, M. K., Rana, M. S., Gazi, M. A. I., Rahaman, M. A., and Nawi, N. C. 2022. Predicting Consumer Green Product Purchase Attitudes and Behavioral Intention During COVID-19 Pandemic. *Frontiers in Psychology*, 12(January), pp. 1–10. DOI: 10.3389/fpsyg.2021.760051.

Chin, J., Jiang, B. C., Mufidah, I., Persada, S. F.,

and Noer, B. A. 2018. The Investigation of Consumers' Behavior Intention in Using Green Skincare Products: A Pro-Environmental Behavior Model Approach. *Sustainability (Switzerland)*, 10(11). DOI: 10.3390/su10113922.

Cho, Y. N., Thyroff, A., Rapert, M. I., Park, S. Y., and Lee, H. J. 2013. To Be or Not to Be Green: Exploring Individualism and Collectivism as Antecedents of Environmental Behavior. *Journal of Business Research*, 66(8), pp. 1052–59. DOI: 10.1016/j.jbusres.2012.08.020.

Chwialkowska, A., Bhatti, W. A., and Glowik, M. 2020. The Influence of Cultural Values on Pro-Environmental Behavior. *Journal of Cleaner Production*, 268, pp. 122305. DOI: 10.1016/j.jclepro.2020.122305.

Costa-Pinto, D., Herter, M. M., Rossi, P., and Borges, A. 2014. Going Green for Self or for Others? Gender and Identity Salience Effects on Sustainable Consumption. *International Journal of Consumer Studies*, 38(5), pp. 540–49. DOI: 10.1111/ijcs.12114.

Deng, L., Cai, L., Sun, F., Li, G., and Che, Y. 2020. Public Attitudes towards Microplastics: Perceptions, Behaviors and Policy Implications. *Resources, Conservation and Recycling*, 163(February), pp. 105096. DOI: 10.1016/j.resconrec.2020.105096.

Dini, Irene and Laneri, Sonia. 2021. The New Challenge of Green Cosmetics: Natural Food Ingredients for Cosmetic Formulations. *Molecules*, 26(13). DOI: 10.3390/molecules26133921.

Eagly, Alice H. and Wood, Wendy. 2000. Social Role Theory of Sex Differences. *The Wiley Blackwell Encyclopedia of Gender and Sexuality Studies*, (April 2016), pp. 1–3. DOI: 10.1002/9781118663219.wbegss183.

ElHaffar, G., Durif, F., and Dubé, L. 2020. Towards Closing the Attitude-Intention-Behavior Gap in Green Consumption: A Narrative Review of the Literature and an Overview of Future Research Directions. *Journal of Cleaner Production*, 275, pp. 122556. DOI: 10.1016/j.jclepro.2020.122556.

Erhabor, Norris Igbinosa and Don, Juliet U. 2016. Impact of Environmental Education on the Knowledge and Attitude of Students towards the Environment. *International Journal of Environmental and Science Education*, 11(12), pp. 5367–75. DOI: 10.25073/0866-773x/68.

Fishbein, M. and Ajzen, I. 1983. Understanding Attitudes and Predicting Social Behaviors. *The Encyclopedic Dictionary of Psychology*, pp. 41–43.

Fontes, E., Moreira, A. C., and Carlos, V. 2021. The Influence of Ecological Concern on Green Purchase Behavior. *Management and Marketing*, 16(3), pp. 246–67. DOI: 10.2478/mmcks-2021-0015.

Garcia-Vazquez, E., Garcia-Ael, C., Mesa, M. L. C., Dopico, E., and Rodriguez, N. 2022. Enhancing Marine Citizenship as a Strategy to Promote the Reduction of Single-Use Plastics Consumption in Different Cultures. *Frontiers in Marine Science*, 9(September), pp. 1–19. DOI: 10.3389/fmars.2022.941694.

Ghazali, E., Soon, P. C., Mutum, D. S., and Nguyen, B. 2017. Health and Cosmetics: Investigating Consumers' Values for Buying Organic Personal Care Products. *Journal of Retailing and Consumer Services*, 39(August), pp. 154–63. DOI: 10.1016/j.jretconser.2017.08.002.

Ghazali, I., Abdul-Rashid, S. H., Dawal, S. Z. M., Aoyama, H., Sakundarini, N., Ho, F. H., and Herawan, S. G. 2021. Green Product Preferences Considering Cultural Influences: A Comparison Study between Malaysia and Indonesia. *Management of Environmental Quality: An International Journal*, 32(5), pp. 1040–63. DOI: 10.1108/MEQ-11-2020-0245.

Ghozali, I. and Latan, H. 2015. *Partial Least Squares Konsep, Teknik dan Aplikasi Menggunakan Program SmartPLS 3.0 untuk Penelitian Empiris*. Semarang: Badan Penerbit UNDIP.

Grooten, M. and. Almond, R. E. 2018. *Living Planet Report—2018: Aiming Higher*. Gland, Switzerland: WWF International.

Hair, Hult, Ringle, and Sarstedt. 2017. *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Second. Los Angeles: SAGE Publications, Inc.

Hair, J. F., Ringle, C. M., and Sarstedt, M. 2011. PLS-SEM: Indeed a Silver Bullet. *Journal*

of Marketing Theory and Practice, 19(2), pp. 139–52. DOI: 10.2753/MTP1069-6679 190202.

Hair, J. F., Risher, J. J., Sarstedt, M., and Ringle, C. M. 2019. When to Use and How to Report the Results of PLS-SEM. *European Business Review*, 31(1), pp. 2–24. DOI: 10.11 08/EBR-11-2018-0203.

Hansen, T., Risborg, M. S., and Steen, C. D. 2012. Understanding Consumer Purchase of Free-of Cosmetics: A Value-driven TRA Approach. *Journal of Consumer Behaviour*, 11(6), pp. 477–86.

Henseler, Jörg and Sarstedt, Marko. 2013. Goodness-of-Fit Indices for Partial Least Squares Path Modeling. *Computational Statistics*, 28(2), pp. 565–80. DOI: 10.1007/s00180-0 12-0317-1.

Hsu, C. L., Chang, C. Y., and Yansritakul, C. 2017. Exploring Purchase Intention of Green Skincare Products Using the Theory of Planned Behavior: Testing the Moderating Effects of Country of Origin and Price Sensitivity. *Journal of Retailing and Consumer Services*, 34(October 2016), pp. 145–52. DOI: 10.1016/j.jretconser.2016.10.006.

Jaini, A., Quoquab, F., Mohammad, J., and Hussin, N. 2020. Antecedents of Green Purchase Behavior of Cosmetics Products: An Empirical Investigation among Malaysian Consumers. *International Journal of Ethics and Systems*, 36(2), pp. 185–203. DOI: 10.1108/ IJOES-11-2018-0170.

Jan, I. U., Ji, S., and Yeo, C. 2019. Values and Green Product Purchase Behavior: The Moderating Effects of the Role of Government and Media Exposure. *Sustainability (Switzerland)*, 11(23). DOI: 10.3390/su1123664 2.

Jerndahl, Siri Rygh and Naess, Synne Helletun. 2018. *Addressing Gender Differences in Green Consumption*. Norwegian School of Economics.

Joshi, Yatish and Rahman, Zillur. 2016. Predictors of Young Consumer's Green Purchase Behaviour. *Management of Environmental Quality: An International Journal*, 27(4), pp. 452–72. DOI: http://dx.doi.org/10.1108/M EQ-05-2015-0091.

Jung, H. J., Oh, K. W., and Kim, H. M. 2021. Country Differences in Determinants of Behavioral Intention towards Sustainable Apparel Products. *Sustainability (Switzerland)*, 13(2), pp. 1-23. DOI: 10.3390/su13020558.

Juschten, M., Jiricka-Pürrer, A., Unbehaun, W., and Hössinger, R. 2019. The Mountains Are Calling! An Extended TPB Model for Understanding Metropolitan Residents' Intentions to Visit Nearby Alpine Destinations in Summer. *Tourism Management*, 75(May), pp. 293–306. DOI: 10.1016/j.tourman.2019 .05.014.

Kamalanon, P., Chen, J. S., and Le, T. T. Y. 2022. Why Do We Buy Green Products? An Extended Theory of the Planned Behavior Model for Green Product Purchase Behavior. *Sustainability (Switzerland)*, 14(2), pp. 1–28. DOI: 10.3390/su14020689.

Kapoor, R., Singh, A. B., and Misra, R. 2019. Green Cosmetics - Changing Young Consumer Preference and Reforming Cosmetic Industry. *International Journal of Recent Technology and Engineering*, 8(4), pp. 12932–39. DOI: 10.35940/ijrte.d6927.118419.

Khaleeli, Majdi and Jawabri, Adnan. 2021. The Effect of Environmental Awareness on Consumers' Attitudes and Consumers' Intention to Purchase Environmentally Friendly Products: Evidence from United Arab Emirates. *Management Science Letters*, 11, pp. 555–60. DOI: 10.5267/j.msl.2020.9.011.

Kim, H. Y. and Chung, J. E. 2011. Consumer Purchase Intention for Organic Personal Care Products. *Journal of Consumer Marketing*.

Kim, Min Seong and Stepchenkova, Svetlana. 2020. Altruistic Values and Environmental Knowledge as Triggers of Pro-Environmental Behavior among Tourists. *Current Issues in Tourism*, 23(13), pp. 1575–80. DOI: 10.1080/13683500.2019.1628188.

Kreczmańska-Gigol, Katarzyna and Gigol, Tomasz. 2022. The Impact of Consumers' Green Skepticism on the Purchase of Energy-Efficient and Environmentally Friendly Products. *Energies*, 15(6), pp. 1–12. DOI: 10.33 90/en15062077.

Kumar, B., Manrai, A. K., and Manrai, L. A. 2017. Purchasing Behaviour for Environmentally Sustainable Products: A Conceptual Framework and Empirical Study. *Journal of Re-*

tailing and Consumer Services, 34(August 2015), pp. 1–9. DOI: 10.1016/j.jretconser.2 016.09.004.

Leonidou, L. C., Leonidou, C. N., and Kvasova, O. 2010. Antecedents and Outcomes of Consumer Environmentally Friendly Attitudes and Behaviour. *Journal of Marketing Management*, 26(13–14), pp. 1319–44. DOI: 10. 1080/0267257X.2010.523710.

Li, Qiu Cheng and Wu, Mao Ying. 2019. Rationality or Morality? A Comparative Study of Pro-Environmental Intentions of Local and Nonlocal Visitors in Nature-Based Destinations. *Journal of Destination Marketing and Management*, 11(July 2018), pp. 130–39. DOI: 10.1016/j.jdmm.2019.01.003.

Limbu, Yam B. and Ahamed, A. F. M. J. 2023. What Influences Green Cosmetics Purchase Intention and Behavior? A Systematic Review and Future Research Agenda. *Sustainability (Switzerland)*, 15(15). DOI: 10.3390 /su151511881.

Limbu, Y. B., Pham, L., and Nguyen, T. T. T. 2022. Predictors of Green Cosmetics Purchase Intentions among Young Female Consumers in Vietnam. *Sustainability (Switzerland)*, 14 (19), pp. 1-15. DOI: 10.3390/su141912599.

Lin, Y., Yang, S., Hanifah, H., and Iqbal, Q. 2018. An Exploratory Study of Consumer Attitudes toward Green Cosmetics in the UK Market. *Administrative Sciences*, 8(4), pp. 1-14. DOI: 10.3390/admsci8040071.

Liobikiene, G., Mandravickaite, J., and Bernatoniene, J. 2016. Theory of Planned Behavior Approach to Understand the Green Purchasing Behavior in the EU: A Cross-Cultural Study. *Ecological Economics*, 125, pp. 38–46. DOI: 10.1016/j.ecolecon.2016.02.008.

Maran, Daniela Acquadro and Begotti, Tatiana. 2021. Media Exposure to Climate Change, Anxiety, and Efficacy Beliefs in a Sample of Italian University Students. *International Journal of Environmental Research and Public Health*, 18(17). DOI: 10.3390/ijerph18 179358.

Martins, A. M. and Marto, J. M. 2023. A Sustainable Life Cycle for Cosmetics: From Design and Development to Post-Use Phase. *Sustainable Chemistry and Pharmacy*, 35, pp. 101178. DOI: 10.1016/j.scp.2023.101178.

Mensah, Justice. 2019. Sustainable Development: Meaning, History, Principles, Pillars, and Implications for Human Action: Literature Review. *Cogent Social Sciences*, 5(1). DOI: 10.1080/23311886.2019.1653531.

Migheli, Matteo. 2021. Green Purchasing: The Effect of Parenthood and Gender. *Environment, Development and Sustainability*, 23(7), pp. 10576–600. DOI: 10.1007/s10668-020-01073-6.

Mohammed, Abdul Alem. 2020. What Motivates Consumers to Purchase Organic Food in an Emerging Market? An Empirical Study from Saudi Arabia. *British Food Journal*, 123(5), pp. 1758–75. DOI: 10.1108/BFJ-07 -2020-0599.

Mohd Suki, Norazah. 2016. Consumer Environmental Concern and Green Product Purchase in Malaysia: Structural Effects of Consumption Values. *Journal of Cleaner Production*, 132, pp. 204–14. DOI: 10.1016/j.jcl epro.2015.09.087.

Nurhayati-Wolff, Hanadian. 2023. *Cosmetics and Personal Care Market in Indonesia – Statistics & Facts*. https://www.statista.com/. Retrieved September 28, 2023 (https://ww w.statista.com/topics/7592/cosmetics-and-personal-care-market-in-indonesia/).

O'Connor, Peter and Assaker, Guy. 2021. COVID -19's Effects on Future pro-Environmental Traveler Behavior: An Empirical Examination Using Norm Activation, Economic Sacrifices, and Risk Perception Theories. *Journal of Sustainable Tourism*, 30(1), pp. 89-107. DOI: 10.1080/09669582.2021.187982 1.

Paço, A. D., Shiel, C., and Alves, H. 2018. A New Model for Testing Green Consumer Behaviour. *Journal of Cleaner Production*, 207, pp. 998–1006. DOI: 10.1016/j.jclepro.2018 .10.105.

Panda, T. K., Kumar, A., Jakhar, S., Luthra, S., Garza-Reyes, J. A., Kazancoglu, I., and Nayak, S. S. 2020. Social and Environmental Sustainability Model on Consumers' Altruism, Green Purchase Intention, Green Brand Loyalty and Evangelism. *Journal of Cleaner Production*, 243, pp. 118575. DOI: 10.10 16/j.jclepro.2019.118575.

Paola, S., Chambers, E., Noguera-artiaga, L., Car-

bonell-Barrachina, Á. A., and Sendra, E. 2020. Consumers' Attitude towards the Sustainability of Different Food Categories. *MDPI (Foods)*, 9(11), pp. 1–20. DOI: https://doi.org/10.3390/foods9111608.

Park, Hyun Jung and Lin, Li Min. 2020. Exploring Attitude–Behavior Gap in Sustainable Consumption: Comparison of Recycled and Upcycled Fashion Products. *Journal of Business Research*, 117(August), pp. 623–28. DOI: 10.1016/j.jbusres.2018.08.025.

Phillips, Diane M. and Englis, Basil G. 2022. Green Consumption Is Both Feminine and Masculine—Just Ask the Androgynous Consumer. *Journal of Consumer Behaviour*, 21 (5), pp. 1028–39. DOI: 10.1002/cb.2052.

Pop and Zsuzsa. 2020. Social Media Goes Green. The Impact of Social Media on Green Cosmetics Purchase Motivation and Intention Information Switzerland. *Information MDPI*, 11(447). DOI: doi:10.3390/info11090447.

Prakash, Gyan and Pathak, Pramod. 2017. Intention to Buy Eco-Friendly Packaged Products among Young Consumers of India: A Study on Developing Nation. *Journal of Cleaner Production*, 141, pp. 385–93. DOI: 10.1016/j.jclepro.2016.09.116.

Promotosh, B., Sajedul, I. M., and Vladimir, V. 2011. *Young Consumers' Purchase Intentions of Buying Green Products: A Study Based on the Theory of Planned Behavior*.

Qi, Xin and Ploeger, Angelika. 2021. Explaining Chinese Consumers' Green Food Purchase Intentions during the Covid-19 Pandemic: An Extended Theory of Planned Behaviour. *Foods*, 10(6). DOI: 10.3390/foods10061200.

Qi, X., Yu, H., and Ploeger, A. 2020. Exploring Influential Factors Including COVID-19 on Green Food Purchase Intentions and the Intention–Behaviour Gap: A Qualitative Study among Consumers in a Chinese Context. *International Journal of Environmental Research and Public Health*, 17(19), pp. 1–22. DOI: 10.3390/ijerph17197106.

Quoquab, F., Jaini, A., and Mohammad, J. 2020. Does It Matter Who Exhibits More Green Purchase Behavior of Cosmetic Products in Asian Culture? A Multigroup Analysis Approach. *International Journal of Environmental Research and Public Health*, 17(14), pp. 1–20. DOI: 10.3390/ijerph17145258.

Rausch, Theresa Maria and Kopplin, Cristopher Siegfried. 2021. Bridge the Gap: Consumers' Purchase Intention and Behavior Regarding Sustainable Clothing. *Journal of Cleaner Production*, 278, pp. 123882. DOI: 10.1016/j.jclepro.2020.123882.

Reddy, K. P., Chandu, V., Srilakshmi, S., Thagaram, E., Sahyaja, C., and Osei, B. 2023. Consumers' Perception on Green Marketing Towards Eco-Friendly Fast Moving Consumer Goods. *International Journal of Engineering Business Management*, 15, pp. 1–14. DOI: 10.1177/18479790231170962.

Rocca, R., Acerbi, F., Fumagalli, L., and Taisch, M. 2022. Sustainability Paradigm in the Cosmetics Industry: State of the Art. *Cleaner Waste Systems*, 3(November). DOI: 10.1016/j.clwas.2022.100057.

Shimul, A. S., Cheah, I., and Khan, B. B. 2022. Investigating Female Shoppers' Attitude and Purchase Intention toward Green Cosmetics in South Africa. *Journal of Global Marketing*, 35(1), pp. 37–56. DOI: 10.1080/08911762.2021.1934770.

Shin, Y. H., Jung, S. E., Im, J., and Severt, K. 2020. Applying an Extended Theory of Planned Behavior to Examine State-Branded Food Product Purchase Behavior: The Moderating Effect of Gender. *Journal of Foodservice Business Research*, 23(4), pp. 358–75. DOI: 10.1080/15378020.2020.1770043.

Singh, Anupam and Verma, Priyanka. 2017. Factors Influencing Indian Consumers' Actual Buying Behaviour towards Organic Food Products. *Journal of Cleaner Production*, 167, pp. 473–83. DOI: 10.1016/j.jclepro.2017.08.106.

Statista. 2023. *Share of People Who Were Willing to Pay More for Sustainable Products in Indonesia as of February 2022*. https://www.statista.com/. Retrieved September 28, 2023 (https://www.statista.com/statistics/1320444/indonesia-people-who-are-willing-to-pay-more-for-sustainable-products/).

Sun, Ying and Wang, Shanyong. 2020. Understanding Consumers' Intentions to Purchase Green Products in the Social Media Marketing

Context. *Asia Pacific Journal of Marketing and Logistics*, 32(4), pp. 860–78. DOI: 10.1 108/APJML-03-2019-0178.

Sutikno, V., Indarini, and Margaretha, S. 2020. Young Consumer's Purchase Intention Toward Environmentally Friendly Products in Indonesia: Expanding the Theory of Planned Behavior. *Proceedings of the 17 th International Symposium on Management (INSYMA 2020)*, 115(Insyma), pp. 36–40. DOI: 10.2991/aebmr.k.200127.008.

Trivedi, R. H., Patel, J. D., and Acharya, N. 2018. Causality Analysis of Media Influence on Environmental Attitude, Intention and Behaviors Leading to Green Purchasing. *Journal of Cleaner Production*, 196, pp. 11–22. DOI: 10.1016/j.jclepro.2018.06.024.

Tseng, Shu-mei. 2022. Understanding Factors Affecting Users' Information. *International Journal of Human and Technology Interaction (IJHaTI)*, 6(2), pp. 19–28.

Visser, Rebecca and Dlamini, Siphiwe. 2021. Green Purchasing Behaviour towards Compostable Coffee Pods. *Sustainability (Switzerland)*, 13(12), pp. 1–16. DOI: 10.3390/su13 126558.

Wang, Bairong and Li, Yong. 2022. Consumers' Intention to Bring a Reusable Bag for Shopping in China: Extending the Theory of Planned Behavior. *International Journal of Environmental Research and Public Health*, 19(6). DOI: 10.3390/ijerph19063638.

Wang, Jiaming. 2023. Study on Regional Differences and Convergence of the Green Development Quality of the Construction Industry: Evidence from China. *Frontiers in Environmental Science*, 11(April), pp. 1–18. DOI: 10.3389/fenvs.2023.972980.

Warganegara, Dezie Leonarda and Hendijani, Roozbeh Babolian. 2022. Factors That Drive Actual Purchasing of Groceries through E-Commerce Platforms during COVID-19 in Indonesia. *Sustainability (Switzerland)*, 14 (6), pp. 1–21. DOI: 10.3390/su14063235.

Witek, Lucyna and Kuźniar, Wiesława. 2021. Green Purchase Behavior: The Effectiveness of Sociodemographic Variables for Explaining Green Purchases in Emerging Market. *Sustainability (Switzerland)*, 13(1), pp. 1–18. DOI: 10.3390/su13010209.

Wu, C., Liang, S., Wu, W., and Hong, Y. 2021. Practicing Green Residence Business Model Based on Tpb Perspective. *Sustainability (Switzerland)*, 13(13), pp. 1–11. DOI: 10.33 90/su13137379.

Xiao, Y., Liu, X., and Ren, T. 2022. Internet Use and Pro-Environmental Behavior: Evidence from China. *PLoS ONE*, 17(1 January), pp. 1–27. DOI: 10.1371/journal.pone.0262644.

Yadav, Rambalak and Pathak, Govind Swaroop. 2016. Young Consumers' Intention towards Buying Green Products in a Developing Nation: Extending the Theory of Planned Behavior. *Journal of Cleaner Production*, 135, pp. 732–39. DOI: 10.1016/j.jclepro.2016.0 6.120.

Yue, Sheng, She, and Xu. 2020. Impact of Consumer Environmental Responsibility on Green Consumption Behavior in China: The Role of Environmental Concern and Price Sensitivity. *Sustainability (Switzerland)*, Volume 12, Issue 5, pp. 1–16. DOI: 10.3390/su 12052074.

Zhang, L., Xu, M., Chen, H., Li, Y., and Chen, S. 2022. Globalization, Green Economy and Environmental Challenges: State of the Art Review for Practical Implications. *Frontiers in Environmental Science*, 10(March), pp. 1–9. DOI: 10.3389/fenvs.2022.870271.

Zhao, Z., Gong, Y., Li, Y., Zhang, L., and Sun, Y. 2021. Gender-Related Beliefs, Norms, and the Link with Green Consumption. *Frontiers in Psychology*, 12(December), pp. 1–13. DOI: 10.3389/fpsyg.2021.710239.