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# The Investigation of Consumers' Behavior Intention in Using Green Skincare Products: A Pro-Environmental Behavior Model Approach

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**Abstract:** Increasing environmental awareness among societies is motivating consumers to use green cosmetic products. Green skincare products are the fastest growing sector in the worldwide market compared with other green cosmetic products. However, compared with general cosmetic products, the market share of green cosmetic products in Indonesia is relatively low. The present research investigated consumers' purchasing intentions toward green skincare products in Indonesia using the pro-environmental reasoned action (PERA) model. A total of 251 female consumers participated in this study. Structural equation modeling was conducted to reveal the relationships between the five factors in the PERA model. The results indicated that perceived authority support (PAS) has a positive effect on perceived environmental concern (PEC). PAS and PEC have positive effects on attitude (AT) and subjective norms (SN), and AT and SN have positive effects on behavioral intention (BI) to purchase green skincare products, with the key factor being attitude. The PERA model was able to describe 62.6% of the BI to purchase green skincare products. Green skincare companies are recommended to produce more green skincare products and market the products by involving public figures and emphasizing the green attributes. Furthermore, we recommend that green skincare companies produce quality and sustainable products using quality processes, and be involved in pro-environmental activity to increase consumer attention to the green skincare products.

**Keywords:** behavioral intention; pro-environmental reasoned action; green skincare; CFA; structural equation modeling (SEM)

## 1. Introduction

Environmental issues have increasingly become a part of public concern over the past few decades [1], motivating consumers to purchase green products. The increasing awareness among consumers to purchase green products has led to increasing attention focused on green consumerism [2]. According to a worldwide survey conducted by Nielsen Company in 2015 [3], the Asia-Pacific area has the second highest number of consumers who wish for increased availability of green products in the market. As a consequence, green strategy has become a critical aspect in supporting business sustainability. Green companies have become more important in modern manufacturing [4,5]. However, few companies are capable of implementing green strategy in their organization. Many

companies implemented the green concept as piece meal because of vague and varying definitions of “green” that have led to different interpretations among practitioners [4,6]. The term “green” was defined as the “environment need to be part of the consideration for products or services that will not pollute the earth or deplete natural resources” [7]. Considerable effort is required to be a truly green company. Companies have to implement environmentally friendly initiatives into their activities to embrace the opportunities. The term “environmentally friendly” was sourced from social discourse and is based on the values, attitudes, perceptions, knowledge, and behaviors related to the environment. The companies that implement environmentally friendly initiatives are able to increase consumer purchasing intention toward green products and support the global trend to protect the environment [4,8].

According to Cheong et al. [9], Indonesia will be one of the top five cosmetics markets for the next 10–15 years as a result of its position as Southeast Asia’s largest economy. Indonesia has a gross domestic product (GDP) of US\$888.5 billion, a population of 250 million, and rising incomes (World Bank, 2015) [9]. In 2017, the Indonesian GDP growth rate was expected to increase to 7%. Moreover, the demand for budget consumer products among Indonesia’s middle class has increased. This has led to the rapid and consistent growth of the demand for cosmetics and personal care products. Skin care is one of the two largest categories of product sales, accounting for 20% of the cosmetics market. Green initiative trends among companies worldwide have led to the creation and production of green cosmetics products to attract consumers. Skincare products are being transformed to green skincare products. There is a highlighted demand for green skincare products because consumers are becoming increasingly concerned about buying ecofriendly products. Green skincare products reach the fastest growing market compared with other green cosmetic products [10–12]. As in many other countries, green cosmetics in Indonesia are accounting for a growing share of the market. According to a survey conducted by Euromonitor International in 2015, the market share of green cosmetics in Indonesia was increasing [13]. However, compared with general cosmetic products, the market share of green cosmetic products in Indonesia is relatively low. Green cosmetics are more expensive, which has led to fewer customers intending to buy the products [13]. Moreover, there are fewer green cosmetics available in Indonesia compared with general cosmetic products. Accordingly, there is background for green consumer research in Indonesia with the aim of increasing Indonesian consumer intention to purchase green cosmetics products, and particularly green skincare products. The potentially large market for cosmetic products in Indonesia provides more room for green cosmetics, particularly green skincare products, to attract more consumers and support the need to protect the environment.

Several studies have addressed the topic of green cosmetics. Pudaruth et al. investigated consumer purchasing patterns of green cosmetics [12]. They used multiple regression and found that some factors, such as belief of the ethical claims in green messages, brand image, usage experience, sales representative, and social influences, affected green cosmetics purchasing patterns. Hansen et al. [14] combined the theory of reasoned action (TRA) with a value-driven approach and found that self-transcendence and self-enhancement affect the attitudes toward free-of cosmetics (cosmetics free from chemicals and other non-natural ingredients). However, in most green cosmetics research, there is a lack of behavioral research. Behavior influences the consumer purchasing intention of green skincare products. This study examines the consumer behavior and intention to purchase green cosmetics. The findings of this research serve as a reference for cosmetic companies designing green cosmetic strategies.

Developed by Ajzen and Fishbein, the TRA delivered a significant fundamental theoretical model for investigating human behavior [14]. More recently, Postmus [15] identified the factor influencing consumers’ green buying behavior using the TRA. One of Postmus’s research subjects was the green cosmetics company. Corporate green reputation was found to be influenced by consumer green buying behavior. Researchers have studied the purchasing intention of general skincare products using the TRA, which was modified or combined with other theories [16–18].

Attitudes, consumer innovativeness, attribute, self-image, and normative influence were confirmed to influence the consumer intention to purchase the skincare product.

Although researchers have modeled the factors that influence consumer purchasing intention for skin care products using the TRA, research modeling consumer purchasing intention toward green skincare products using the TRA is lacking. Previous studies proved that combining or extending the TRA with other theories and factors is critical for obtaining specific findings and analyzing the findings [16–20]. This finding was supported by Askadilla and Krisjanti [21], who mentioned that manufacturers should focus on environmental issues to market green cosmetics products. According to Liobikienė and Bernatoniene [22], the factors that influence consumer intention to purchase green cosmetics are different across different types of green cosmetics. The findings underlined the importance of research to model consumer intention to purchase green skincare products.

This study is the first to apply the newly developed pro-environmental reasoned action (PERA) model to study consumer purchasing intention of green skincare products. The PERA model is a continuation of the TRA model by adding two pro-environmental factors—perceived authority support (PAS) and perceived environmental concern (PEC)—as its antecedents. Persada and Lin [23] mentioned that PEC is an “individual feeling concerning with any physical activities leading to pro-environmental consequences” [24]. According to Fransson and Gärling [25], every individual has specific concerns about the environment. This PERA model was newly developed by Nadlifatin et al. [26] to analyze eco-label product usage in society. The present study also proposes a new hypothesis that was not investigated in the previous research of Nadlifatin et al. [26]. More importantly, the research about green marketing and green consumers has not been highlighted in Indonesia. Room for such research in Indonesia has been mentioned [27]. This study hypothesizes the relationship of the two additional pro-environmental factors (PAS and PEC) in the PERA model using a case study from Indonesian female green skincare customers. Overall, the main contribution of this study is validating the newly developed PERA model to analyze female Indonesian customers’ intentions to purchase green skincare products. In this study, the additional relationship of PAS and PEC is hypothesized, enriching the previous study of Nadlifatin et al. [26]. This study identifies the key factors that influence the consumer green skincare product purchasing intention using the PERA model. This model is suitable for pro-environmental behavior, as it can properly explain the consumers behavior intention. Lastly, this study provides managerial recommendation to increase Indonesian female customers’ intentions to purchase green skincare products.

Given this context, supporting the use of green skincare products has become necessary, especially because skincare products dominate the cosmetics market. The important perspective in the present research is the consumer’s perspective as the end user. Our research questions were as follows:

1. Can the PERA model be applied to analyzing the female Indonesian customers’ intention to purchase green skincare products?
2. What are the factors and key factors that influence the female Indonesian customers’ intention to purchase green skincare products?
3. What managerial recommendations can be provided to increase female Indonesian customers’ intention to purchase green skincare products?

To summarize, the present study aimed to answer these research questions by clarifying the key factors of pro-environmental theory of reasoned action (PERA) that influence consumer green skincare product purchasing intention, and to explore the potential relationship within perceived authority support and perceived environmental concern.

To address the purpose constraints, we (1) validated the PERA model for analyzing the female Indonesian customers’ intention to purchase green skincare products and (2) identified the literature framework in terms of perceived authority support and perceived environmental concern, and tested the relationship between PAS and PEC. This research provides the managerial recommendation for green skincare companies to increase their consumers’ purchasing intention. The rest of this

paper is arranged as follows. Section 2 discusses the related literature and research model. Several hypotheses are proposed in this section, including the research methodology. Section 3 provides the results, followed by the discussion in Section 4. Section 5 summarizes the research with practical and theoretical information.

## 2. Hypothesis Development and Research Model

### 2.1. Description of Green Cosmetics and Green Skincare

Current environmental issues have increased consumer intention to purchase green products. Green products are developed or improved according to ecological standards. Green products have several advantages such as minimizing the use of natural resources, they are safer and less toxic, and they are packaged using reusable material [28–30]. As one type of green product, green cosmetics have gained more attention among consumers. Green cosmetics are made from natural ingredients without any chemical agents, artificial coloring, or other substances. Green cosmetics are often called organic cosmetics [31]. There are certain challenges to formulating organic cosmetics because organic cosmetics have to guarantee efficiency, stability, and safety [28].

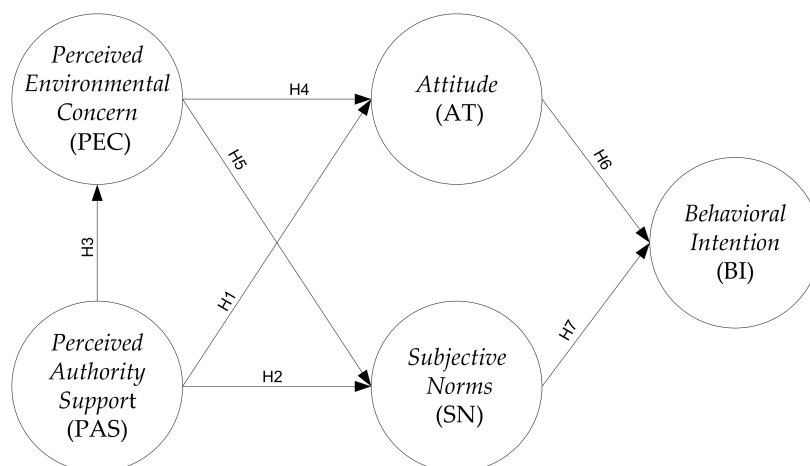
This study focused on green skincare products as a type of green cosmetic product. Skincare involves all practices related to enhancing the skin's appearance and relieving skin conditions [32]. Green skincare does not use synthetic chemicals [4]. All the ingredients in these products are sourced from botanical sources. These products are manufactured by preserving the integrity of the ingredients.

### 2.2. Theory of Reasoned Action and Pro-Environmental Reasoned Action

The theory of reasoned action (TRA) predicts the intention to perform a behavior based on the normative belief and attitude of an individual [33,34]. The TRA spawned influential research in the field of social psychology history [35]. Hale et al. [36] mentioned that the aim of the TRA is to explain volitional behavior. There are four latent variables in the TRA model: attitude, subjective norms, intention, and behavior. Several studies modified the use of the TRA model for some specific applications, including this paper. In several studies, the TRA was adapted to environmental studies (studies related to environmental behavior and pro-environmental research) [14,37,38]. The pro-environmental reasoned action (PERA) is an extension of the TRA that incorporates environmental consideration. PERA combines the TRA with two additional factors; namely, perceived authority support (PAS) and perceived environmental concern (PEC), as seen in Figure 1. As mentioned in previous research, the organizational reputation of the TRA model has influenced consumer green buying behavior. However, studies that propose managerial interpretation in order to understand consumer purchasing intention toward green skincare products are lacking, although managerial decisions play an important role as policy makers for corporate strategy. Therefore, we also discuss managerial interpretation of the results of this research.

As mentioned in Persada and Lin [23], perceived authority support (PAS) is the individual perception toward any individual or organization that is able to support, grant, or obstruct a person from performing a specific behavior. In this study, green skincare companies have the authority to support or obstruct an individual in protecting the environment. Companies that have implemented the green concept have issued policies, programs, or advertisements that support environmental awareness. The green concepts implemented in the company's business plan, such as green product promotion, green marketing, environmental management, and overall greening of the company, show the company's commitment to the environment [6]. Biloslavo and Trnavčević [39] mentioned that the purpose, activities, and materials of green companies should be in harmony with the natural and cultural environment. Green companies not only need to be committed to environmental sustainability, but also need to be committed to financial and social sustainability. Consumers are expected to be motivated to purchase the green products through the company's pro-environmental programs. These programs motivate the consumer to purchase the green (skincare) products as a representation of their

environmental awareness [26]. Under the green concept implemented in the company, the company and consumers can work together to support the environment.



**Figure 1.** The hypothesized model.

In this study, the perceived authority support (PAS) is the perception of the consumer about any product, regulation, facility, and support provided by the green company that motivates the consumer to purchase green (skincare) products as a representation of their environmental awareness [26]. Studies proved that pro-environmental support from the authority holder positively influences individual perception to perform specific pro-environmental activities [24,26,40,41]. The PAS was confirmed to positively influence the PEC in environmental impact assessment participation [42], but not specifically green skincare purchasing behavior. If the company effectively motivates the consumer to purchase green products, consumers will feel that it is good to use green products. Thus, we propose that the PAS positively influences the PEC in terms of green skincare purchasing behavior. Accordingly, the following hypotheses are proposed:

**Hypothesis 1 (H1):** *Perceived authority support (PAS) has a positive effect on the attitude (AT) of purchasing green skincare products.*

**Hypothesis 2 (H2):** *Perceived authority support (PAS) positively affects the subjective norms (SN) of purchasing green skincare products.*

**Hypothesis 3 (H3):** *Perceived authority support (PAS) positively affects the perceived environmental concern (PEC) of purchasing green skincare products.*

The definitions of environmental concerns vary, ranging from the specific attitudes of pro-environmental behavior, to a more encompassing value orientation. It also ranges from the specific attitudes that determine intention to a more general attitude. Environmental concern expresses individual self-interest toward the environment. Accordingly, in this study, the PEC is the consumer's feeling about pro-environmental physical activities. Environmental concern is expected to influence the individual to perform pro-environmental activities. The consumers with high environmental awareness tend to purchase eco-friendly products to show their environmental concern [43]. In this study, the consumers with high environmental awareness were expected to buy green skincare products. Several studies confirmed the positive influence of the PEC on individual pro-environmental activities, such as pro-environmental shares, green energy system adoption, and green product purchasing [44–46]. Accordingly, the following hypotheses are proposed:

**Hypothesis 4 (H4):** *Perceived environmental concern (PEC) positively affects the attitude (AT) of purchasing green skincare products.*

**Hypothesis 5 (H5):** *Perceived environmental concern (PEC) positively affects the subjective norms (SN) of purchasing green skincare products.*

Ajzen [47] stated that behavioral intention (BI) is the motivation, the effort of the individual to perform a behavior that controls whether or not a behavior is performed. Attitude (AT) is the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question. The subjective norm (SN) is the perceived social pressure to perform or not perform a behavior. In the TRA, the strongest predictor of behavior is the intention and the intention is the result of individual attitude and normative influence [36]. Several researchers have proven the positive influence of attitude and normative belief on pro-environmental behavior [23,48,49].

**Hypothesis 6 (H6):** *Attitude (AT) positively affects the behavioral intention (BI) of purchasing green skincare products.*

**Hypothesis 7 (H7):** *Subjective norms (SN) positively affects the behavioral intention (BI) of purchasing the green skincare products.*

### 2.3. Methodology

#### 2.3.1. Participants and Procedure

The green skincare products studied were two green skincare products from two well-known cosmetics brands in Indonesia; namely skincare X and skincare Y. Both of the two green skincare products were chosen because of their high potential market share compared with other green skincare products in Indonesia. More importantly, both green skincare products have been certified by Ecocert as eco-friendly products. The population of this study was all-female customers of skincare X and skincare Y in Indonesia, in Jakarta and Surabaya. Jakarta and Surabaya are the two largest cities in Indonesia, and both cities are located on Java Island, which holds 54% (261 million people) of the Indonesian population. Jakarta and Surabaya, as major cities in Southeast Asia, can represent other developing countries. Non-probability sampling was used in August 2017 over a period of four weeks. Purposive sampling was used by determining the specific sample on the basis of relevance or knowledge (about the green skincare product) [50]. The sample frame of this study was female customers using skincare X and skincare Y aged 21 to 50 years old. These age limits were chosen because women older than 20 years old tend to be economically independent and women older than 50 years old tend to spend less on beauty products.

The respondents of this study were consumers of the chosen skincare products. The respondents filled in a questionnaire that was either an offline or online survey. The online survey was conducted by providing an online form of the questionnaire. The offline survey was provided by administering a paper-based questionnaire. Before the questionnaires were distributed, we introduced the concept of green skincare and conducted initial questions to prospective respondents. The question was whether they recognize green skin care product, x or y, and have they ever used one or both of these products. If they answered "yes" for both questions, then they were allowed to continue to the main questionnaire. A total of 260 questionnaires were distributed (nine incomplete answers were removed), so 251 female respondents participated in this study by fully completing the questionnaire. The high response rate meant that non-response bias was not a concern [51]. Next, the common methods bias test was conducted using the common latent factor in confirmatory factor analysis (CFA) to capture the variance between all variables [52]. There was no significant common methods bias in the variable sample.

### 2.3.2. Measures of the Construct

The questionnaire in this study consisted of two parts. The first part of the questionnaire included questions related to respondent demographics, such as types of the skincare frequently used, age, marriage status, education, job, salary, and monthly budget to purchase green skincare products. The second part of the questionnaire included PERA-related questions. To test the hypothesis, we used the following construct: PAS, PEC, AT, SN, BI. Each construct had three indicators (items). In total, 15 questions (items) were used in the questionnaire, as shown in Table 1. PAS was evaluated using scale items adapted from Persada [23] and Nadlifatin et al. [26]. PEC was evaluated using scale items adapted from Fransson and Gärling [25]. AT was evaluated using scale items adapted from Turaga [23,25,53–55]. SNs were evaluated using scale items adapted from Hsu et al. [4] and Trafimow [56]. BI was evaluated using scale items adapted from Hsu et al. [4] and Trafimow [56]. All constructs were evaluated using a five-point Likert scale ranging from 1 as “strongly disagree” to 5 as “strongly agree”. Before analyzing the proposed model, the first step was to test the reliability and convergent validity of the survey items, and the factor loading values had to exceed the recommended minimum measurement (0.7) to show that all item are an appropriate explanation for the dimensionality of the factors [54]. The construct validity measures used in this study were item loading, average variance extracted (AVE), and composite reliability (CR). Next, the value of the composite reliability had to exceeded the minimum measurement (0.7) to show that all questionnaire items passed the reliability test [54].

**Table 1.** The questionnaire items regarding the research constructs. PAS—perceived authority support; PEC—perceived environmental concern; AT—attitude; SN—subjective norms; BI—behavioral intention.

Construct		Measurement Item
PAS	PAS 1	I have had a chance to use green skincare products through the pro-environmental policy implemented in the green company.
	PAS 2	Green skincare companies give me the freedom to make my own decision to use green skincare products.
	PAS 3	I feel that I have the option to use green skincare products.
PEC	PEC 1	Environmental awareness is influencing me to use green skincare products.
	PEC 2	Environmental awareness makes me want to purchase green skincare products.
	PEC 3	I am very worried about the state of the world environment and what that will mean for my future, so I need to protect the environment by using green skincare products.
AT	AT 1	For me, using green skincare products occurs when the manufacturer appropriately implements their green business.
	AT 2	For me, using the green skincare is wise.
	AT 3	For me, using the green skincare is favorable/enjoyable.
SN	SN 1	My family and close friends recommend that I use green skincare products.
	SN 2	My family and close friends would prefer that I use green skincare products.
	SN 3	My family and close friends want me to use green skincare products.
BI	BI 1	I am likely to buy green skincare products.
	BI 2	I will buy green skincare products as soon as I run out of the skincare products I am currently using.
	BI 3	I will recommend green skincare products to other people.

### 2.3.3. Statistical Analysis

In this study, confirmatory factor analysis (CFA) was conducted using structural equation modeling (SEM) to test the validity of the proposed PERA model. The SEM was run using the

analysis of moment structure (AMOS) software package IBM®SPSS®AMOS version 22.0.0, Meadville, PA, USA. The CFA was used to test the model validity (the validity of the relationship between latent variables). Five latent variables (with seven hypothesized relationships) were tested: PAS, PEC, AT, SN, and BI. In this study, the model reliability was tested using Cronbach's alpha. The model validity was assessed by examining the overall fit and construct validity [57]. The overall fit index used in this study was  $X^2/df$  (relative chi-square), comparative fit index (CFI), Tucker Lewis index (TLI), and root mean square error of approximation (RMSEA) [58]. The construct validity measures used in this study were item loading, AVE, and CR. The proposed hypotheses were tested using the significance of the correlation based on the bootstrap result [26].

### 3. Results

With regard to age, of the 251 female respondents, the majority were 21–30 years old (76.4%), followed by 31–40 years old (12.4%) and 41–50 years old (11.2%). The scores of the 251 respondents were in the range of 3.26 to 4.07, showing a neutral to agreeing response [26]. The model was reliable, supported by the minimum Cronbach's alpha score of 0.7 [59,60]. The reliability score confirmed the internal consistency of the measures [42,61,62]. The item loadings were ideal, shown by a score above 0.7, indicating the high loading of items in the specific construct [57,63,64]. All the AVE scores were acceptable (Table 2), shown by scores above 0.5, which indicated the acceptable average percentage of variance extracted among items of the specific construct [41,57,63]. The CR scores were acceptable (Figure 2), given the score above 0.7 [57]. The CR is a reliability test based on factor loading as the parameter according to the constructed formula [26,40,65].

**Table 2.** Construct validity test. AVE—average variance extracted; CR—composite reliability.

Factor	Item	Factor Loading ( $\geq 0.7$ ) <sup>1</sup>	Cronbach Alpha ( $\geq 0.7$ ) <sup>1</sup>	CR ( $\geq 0.6$ ) <sup>1</sup>	AVE ( $\geq 0.5$ ) <sup>1</sup>
PAS	PAS1	0.760	0.842	0.847	0.650
	PAS2	0.831			
	PAS3	0.825			
PEC	PEC1	0.917	0.880	0.886	0.722
	PEC2	0.865			
	PEC3	0.760			
AT	AT1	0.705	0.790	0.791	0.559
	AT2	0.795			
	AT3	0.740			
SN	SN1	0.827	0.905	0.904	0.760
	SN2	0.888			
	SN3	0.899			
BI	BI1	0.838	0.895	0.860	0.673
	BI2	0.841			
	BI3	0.780			

<sup>1</sup> indicates the required value [42,61,62].



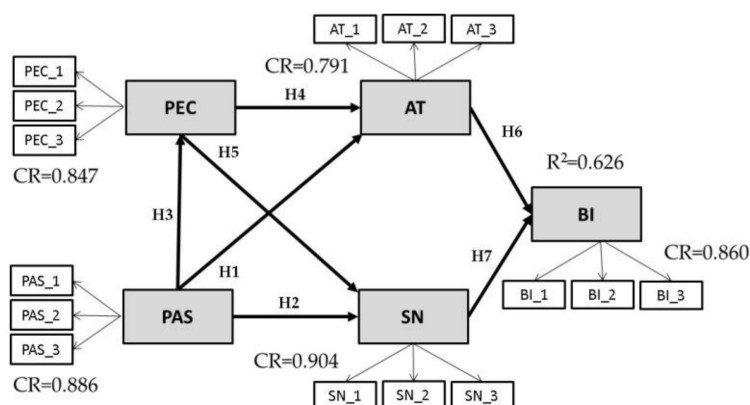


Figure 2. The construct validity model result. CR—composite reliability.

The overall fit scores of the model showed good fit (Table 3). All the  $X^2/df$ , CFI, and TLI scores were acceptable—below 3, above 0.9, and approaching 1, respectively [57].  $X^2/df$  showed that the model fit the data [66]. The acceptable CFI and TLI values support the high fit improvement compared with the baseline model and the higher normed chi-square value for the null model compared with the specified model [57,63,66]. The RMSEA score below 0.08 confirmed that the model not only fits the sample, but also fits the population [57].

Table 3. Overall fit test.  $X^2$  = chi-square, df = degrees of freedom,  $X^2/df$  = relative/normed chi-square, CFI = comparative fit index, TLI = Tucker-Lewis index, and RMSEA = root mean square error approximation.

Statistic	Value	
	The Proposed Model	Recommended
1. $X^2/df$	2.096	$\leq 3$ [57]
2. CFI	0.96	$\geq 0.9$ [57]
3. TLI	0.95	$\geq 0.9$ [57]
4. RMSEA	0.066	$< 0.08$ [67]

Table 4 reveals the strength of the direct relationship between constructs. There were seven significant correlations found in the PERA model, and the strongest was AT with BI ( $\beta = 0.607, p 0.003$ ), supporting H6.

Table 4. Significance of the correlation result.

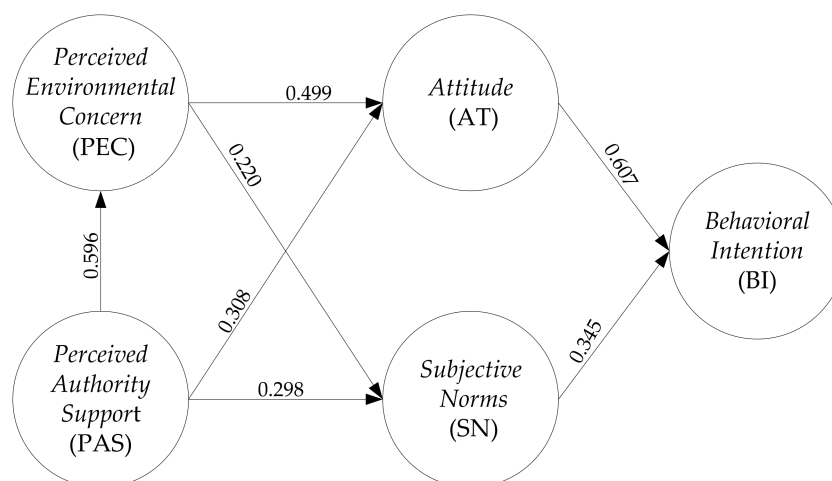
Correlation between Factors			B	P	Hypothesis
AT	<—	PAS	0.308	0.016 **	H1: supported
SN	<—	PAS	0.298	0.008 ***	H2: supported
PEC	<—	PAS	0.596	0.002 ***	H3: supported
AT	<—	PEC	0.499	0.003 ***	H4: supported
SN	<—	PEC	0.220	0.100 *	H5: supported
BI	<—	AT	0.607	0.003 ***	H6: supported
BI	<—	SN	0.345	0.002 ***	H7: supported

\*  $p \leq 0.1$ ; \*\*  $p \leq 0.05$ ; \*\*\*  $p \leq 0.01$ .

## 4. Discussion

### 4.1. Statistical Interpretation

The proposed hypotheses of the relationship among the latent constructs in the PERA model were tested. There were seven significant and positive correlations found in the model. As seen in Table 4 and Figure 3, the perceived authority support has a positive and direct effect on attitude, subjective norms, and perceived environmental concern. For H1, the coefficient between perceived authority support and attitude was significant with a  $p$ -value below 0.016. The positive effect of perceived authority support on attitude ( $\beta_{(PAS \rightarrow AT)} = 0.308$ ) showed the degree of influence perceived by the consumers' attitudes. PAS proves the relatively low influence of green skincare companies. For H2, the coefficient between PAS and SN was also significant with a  $p$ -value below 0.008. This showed that high PAS is strongly associated with SN. The positive effect of PAS on SN ( $\beta_{(PAS \rightarrow SN)} = 0.298$ ) highlights the degree of influence of the authority holder on social norms. We suggest that companies focus more on green programs and green marketing to promote the benefit of green skincare products, and combine these programs with other factors to enrich their marketing strategy. Green skincare companies need to promote green skincare products by involving public figures and heads of communities to gain consumer attention. The main hypothesis, which proposed that perceived authority support would influence the perceived environmental concern (H3), was successfully supported (Table 3). The path for H3 was significant ( $p < 0.002$ ). The positive effect of PAS on PEC ( $\beta_{(PAS \rightarrow PEC)} = 0.596$ ) showed the degree of influence perceived by the consumer environmental concern. This correlation was not tested in the previous research of Nadlifatin et al. [26]. The relatively high influence degree confirms that green policies and programs initiated by green skincare companies are able to increase consumer awareness toward the environment. However, there is still room for green skincare companies to increase consumers' environmental concern by creating more green programs to promote the benefits of a sustainable environment.



**Figure 3.** The pro-environmental reasoned action (PERA) model result.

PEC was confirmed to positively influence attitudes and subjective norms (H4 and H5). The positive effect of PEC on AT ( $\beta_{(PEC \rightarrow AT)} = 0.499$ ) shows the degree of influence on consumer attitude. The medium influence showed that consumers' environmental concern moderately and positively affects consumer attitude. This situation has some advantages for green skincare companies because the consumers' environmental awareness motivates the consumers to use green skincare products. Thus, the green skincare company can try to combine the green attribute of skincare products with other factors in their marketing strategy. As a consequence, consumers with high environmental awareness will purchase green skincare products in response. The positive effect of PEC on SNs ( $\beta_{(PEC \rightarrow SN)} = 0.22$ ) showed the degree of influence on the social norms. PEC had little influence on

the subjective norms, indicating that the environmental awareness of an individual does not always affect the environmental awareness of the society. The correlation of PEC on SNs was less significant compared with other hypothesized correlations. The correlation results indicated that PEC has more influence on the consumers' attitudes rather than on the consumers' subjective norms. As an impact, compared with consumer attitude ( $\beta_{(AT \rightarrow BI) = 0.607}$ ), the SNs have lesser influence on consumer BI to purchase green skincare products ( $\beta_{(SN \rightarrow BI) = 0.345}$ ), affected by the indirect influence of the relationship between PEC and SN. As a result, we suggest that companies issue policies and programs, such as rewards and subsidies, to strengthen the effect of the subjective norms on the consumers.

For the last hypothesis, the coefficient between AT and BI was significant ( $p < 0.003$ ). The degree of influence of AT on BI ( $\beta_{(AT \rightarrow BI) = 0.607}$ ) was the highest of all correlation results in the model. This value confirms that the key factor that influences consumers' intention to purchase green skincare products is AT. We advise that improving green promotion strategy can enhance the positive perception of green skincare products. Finally, the validated PERA model in this study had five factors that described 62.6% of the total consumer intention to purchase green skincare products ( $R^2 = 0.626$ ). The remaining 37.4% might originate beyond the PERA model. This obtained  $R^2$  value is comparable to previous research [26]. Based on these results, this study has significant implications for researchers studying green products. The study tested the extended PERA model when applied to green skincare products in Indonesia, which represents developing countries. Next, the results of this study can be useful for companies manufacturing green products in other Southeast Asia countries that have similar economic and demographic backgrounds.

#### 4.2. Managerial Interpretation

In this research, we discussed the results of the PERA model and the managerial interpretation. The result shows that the PERA model described 62.6% of total consumers' intention to purchase the green skincare products. Related to the result, where above 50% indicates a very good value, especially in terms of intention to buy, is a motivational prefix for the actual purchase. Based on this result, the management within the company can develop a marketing strategy while also encouraging the community to care for the environment. This is in line with the relationship between PAS and PEC in this research.

In order to understand consumer purchasing intention toward green skincare products from a managerial perspective, which is different from other research, our model shows a significant relationship between main variables. The model results show PAS has a positive influence on AT, SN, and PEC. As an organization, green skincare companies should help consumers to be aware of the environment. Thus, they need to produce a good quality product and use a high quality production process. Good product quality and quality production create a positive public reputation, so that consumers will trust and use the products. PEC positively influenced AT ( $\beta_{(PEC \rightarrow AT) = 0.499}$ ). This condition has advantages for personal purchasing power of green cosmetics because environmental concern inspires consumers to buy green products. Cosmetic marketing managers should improve sales plans to warrant the quality of green products to customers and improve their green brand image via the Internet and social media sites, which not only provides a financial point of view, but shows how the company cares about green initiatives. Participating in several pro-environmental events for the company is also a good approach.

## 5. Conclusions

We used the newly developed PERA model for investigating consumer BI to purchase green skincare products. The PERA model was newly proposed by Nadlifatin et al. [26] and was proven to be applicable to pro-environmental research regarding consumers' intention to use eco-labeled products. The PERA model is an extension of the TRA that considers PEC and PAS. This study extended the application of the PERA model. We analyzed the intention of consumers to purchase green skincare products. The results confirmed that PAS positively affects PEC, while PAS and PEC

have a positive effect on AT and SN, and AT and SN have a positive effect on the BI to purchase green skincare products. This study's findings reveal that attitude is the key determinant that predicts the behavioral intention, as was found by Nadlifatin [26]. We recommend that green skincare companies implement some programs and strategies such as emphasizing the green attributes of the company and the products that support environmental sustainability. Lastly, we recommend that green skincare companies be involved in many pro-environmental activities. The consumers were expected to intend to purchase green skincare products as a representation of their environmental awareness.

This study validated the PERA model for application in the analysis of consumer purchasing intention toward green skincare products. All seven proposed hypotheses were supported. We developed a method to describe the causality of the positive relationships of AT, SN, and BI, as well as the connection between PEC and PAS. The PERA model was developed from many studies of green products, which also support the results of this study [16–18]. Thus, this study contributes to the developing green product literature. By increasing consumer intention to purchase green skincare products, we will be closer to achieving the goal of a sustainable environment. The limitation of this study is the narrow coverage of the respondents, as well as the exploration factors. In SEM, the model that is best supported may depend on sample size, and some researchers recommended a sample size minimum of 200. Wolf et al. demonstrated that model characteristics, such as sample size and degree of factor determinacy, affect the accuracy of the parameter estimates and model fit statistics [68]. Further research should identify the potential factors outside the PERA model, such as motivation and behavior control, that are responsible for the remaining 37.4% contribution by involving respondents from a wider scope and enhancing the coverage by including respondents from several countries. We also recommend presenting practical implementations of the managerial implications in future studies.

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