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GENDER AND GREEN PACKAGING AMONG UNIVERSITY STUDENT IN DEVELOPING COUNTRY

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Gender and Green Packaging among University Student in Developing Country

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Abstract

Recently, green packaging has become a hot topic for consumers and retailers, along with increasing environmental sustainability awareness. The benefit of packaging extends beyond protecting the product; it also aims to mitigate environmental issues caused by packaging waste. This study aims to test the antecedents of intention to purchase toward green packaging among young consumers and seeks to discover whether gender is an essential determinant to explain intention to purchase. A total of 276 university students in Surabaya, Indonesia, participated as respondents in this study. The results indicated that women have a higher level of intention to purchase toward green packaging than men. Moreover, the antecedents' patterns of intention to purchase toward green packaging differ between men and women. The intention to purchase of green packaging for men was only influenced by perceived behavioral control (PBC) and willingness to pay (WTP); whereas the predictors for women are attitude, willingness to pa (WTP), subjective norm (SN), and indirect environmental concern (EN).

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Keywords: gender; green packaging; sustainability; young consumers; students.

Introduction

Consumer awareness of products' impacts on environmental sustainability has been increasing over the years (Shao *et al.*, 2017). Koenig-Lewis *et al.* (2014) argue that non-green packaging waste is one cause of environmental damage. The buildup of waste from product packaging is substantially harmful to the environment. Along with the increasing consumer awareness of the environment, selecting products with green packaging has become an effort to reduce pollution from packaging waste (Magnier & Crie, 2015). The governments, companies, and retailers also play a role in tackling this issue. In Indonesia, plastic-free-packaging campaigns are supported by the governments. The government requires retailers and shopping malls to encourage consumers to bring reusable shopping bags and charge additional fees for consumers using plastic bags (Yatna & Setyawan, 2016), as applied in India (Yadav & Rao, 2014).

The use of paid plastic bags has been applied in Indonesia and received positive responses from consumers. Hidayat *et al.* (2019) in her research in Indonesia exhibited that the franchise-based retails in Indonesia such as Indomart and Alfamart have managed to suppress the use of plastic bags when applying the cost of Rp. 100 per plastic bag for each customer who needs it. It shows that with the retailers educating their consumers in Indonesia, the consumers' behavior towards the use of plastic bag while shopping will also change.

According to Meet *et al.* (2024) green packaging uses renewable energy sources, renewable or recyclable materials, or environmental production technologies for sourcing, manufacturing, producing, forwarding, and recycling. There are three characteristics of green packaging, namely (1) using bio-degradable material, (2) using a small amount of energy, and (3) can be recycled or worn again. The company usually uses green packaging to show its commitment to the environment as well as to increase brand popularity (Phelan *et al.*, 2022) For example, Coca-Cola has used +/- 90% green packaging in its product packaging (Simões-Coelho *et al.*, 2023). In 2023, Uber Eats, an on-demand food delivery platform in America, promoted an initiative to use recycled packaging in food delivery services (Yue *et al.*, 2024). Mc Kinsey's survey in 2020 reveals that more than 60 percent of respondents want to pay more for green packaging (Mc Kinsey, 2023)

Packaging functions and brand logos that are well known among consumers provide a positive impetus for them to buy products with environmentally friendly packaging. Ramadhanti *et al.* (2024), through their research in Indonesia, explained that consumers with high environmental concerns tend to look for packaging with more environmental benefits.

Previous research has shown that consumers have favorably responded due to sustainability packaging (Ewe & Tjiptono, 2023; Daniel et al., 2023; Kim et al., 2024). Green packaging significantly impacts consumer considerations and preferences (Leong et al., 2024). In line with this, Sun and Li (2021) researched the role of green packaging on consumer purchasing behavior. Their research found that packaging is the key to consumer clues in determining product purchase decisions.

Environmentally friendly packaging has also been applied in Indonesia by the Sosro Bottled Tea Company. Soedarmadji *et al.* (2015) asserted in his research that the Sosro Bottled Tea Company has consistently maintained glass bottle packaging since 1969. It was initially based on the initial idea that the glass bottle packaging can maintain the product taste for a longer period, thus, the quality remains maintained during the product distribution process. But in today's age where the company is over 40 years old, it turns out that glass bottle packaging is also proven to have an environmental-friendly effect due to the process of repetitive use, and the consumers will return the bottles after the products used.

Although various research have been conducted to understand the impact of packaging on consumer behavior, there have been a few researches focusing on green packaging usage in emerging countries and in between young consumers (Ewe & Tjiptono, 2023; Hanif *et al.*, 2023; Meet *et al.*, 2024; Lisboa *et al.*, 2022). Prakash and Pathak (2017) examined factors affecting the intention to purchase environmentally friendly packaging based on the Theory of Reasoned Action (TRA). This study extends previous research by examining green packaging focused on young consumers and gender. The researcher uses the extended Theory of Planned Behavior (TPB) approach as background theory to explain the research framework.

Literature Review and Hypotheses Development

Theory of Planned Behavior (TPB) and Green Packaging

According to Ajzen (1991), the theory of planned behavior (TPB) states that three main factors stimulate a person's intention to show a specific behavior, namely, attitude, the influence of the social environment (or subjective norms), and perceived behavioral control (PBC). Even though this is not a new theory, TPB's ability to explain individual intentions and behavior remains much better than other theories (Paul *et al.*, 2016; Madden *et al.*, 1992). In the context of using sustainable products, Scalco *et al.* (2017) using meta-analysis to highlight the robustness of TPB theory model for explain consumption behavior. TPB can also provide an effective understanding and prediction about consumption behavior among young consumers (Riebl *et al.*, 2015).

Ajzen (1991) defined attitude as the individual evaluating a particular behavior or object as good/bad or positive/negative. Attitude has a positive relationship with behavior; the more positive a person's attitude, the higher his or her intention to show a specific behavior. Subjective norms illustrate the social environment's influence on individual behavior (Ajzen, 1991; Kristia et al., 2023. Positive appreciation from an individual's social environment toward purchasing products with green packaging encourages a high intention to purchase (van Birgelen et al., 2009; Nekmahmud et al., 2022). Meanwhile, PBC is the last element of TPB, acting as an individual perception of the difficulty in exhibiting an assured behavior (Ajzen, 1991). According to Paul et al. (2016), PBC has a higher predictor impact on one's behavior among three predictors of behavior intention in the TPB model. Martinho et al. (2015) also indicated PBC's positive effect on the intention to purchase green packaging.

Some research on green packaging's intention to purchase showed positive influence of all three components in TPB framework (Prakash & Pathak, 2017; Martinho *et al.*, 2015; Leong *et al.*, 2024). Referring to TPB framework described earlier, the following hypotheses are proposed,

H1: Attitude (AT) is positively associated with the purchase intention (IP) of young consumers toward green packaging

H2: Subjective Norms are positively associated with the purchase intention (IP) of young consumers toward green packaging

H3: Perceived Behavioral Control is positively associated with the purchase intention (IP) of young consumers toward green packaging

Environmental concern

Environmental concern is an individual belief about protecting the environment from environmental issues and participating in them (Hu et al., 2010; Chen & Tung., 2014; Franzen & Bahr, 2024). Gomes et al. (2023) found that individuals with more significant environmental concerns tend to have more favorable attitudes towards green products. Ramadhanti et al. (2024) reveal that young consumers concerned with pro-social behavior towards the environment have a positive relationship with green packaging. According to the support of this research evidence, the authors proposed the hypothesis as written:

H4: Attitude of young consumers towards green packaging is influenced by environmental concern.

Willingness to Pay

Smith and Paladino (2010) indicated that sustainable products are typically perceived as more expensive than conventional ones. Gomes *et al.* (2023) reveal that price is a critical consideration for Gen Z consuming eco-friendly products. Nevertheless, consumers of environmentally friendly products are usually less

price-sensitive (Grankviest & Biel, 2001) because they understand that a product's benefit equals its premium price (Padel & Foster, 2005). Rana and Paul (2017) also contended that individuals who consume eco-friendly products are willing to purchase products at premium prices rather than conventional ones. Several recent studies showed that consumers concerned with environmental issues do not mind paying premium prices for premium products (Ewe & Tjiptono, 2023; Kim *et al.*, 2024; Yadav & Pathak, 2017). Leong *et al.*, 2024 explained that willingness to pay higher prices positively affected young people to purchase products with green packaging. Thus, we build hypothesis build as follows:

H5: Young consumers 's Willingness to pay (WTP) of green packaging are positive influenced by intention to purchase (IP) with green packaging.

Gender and Green packaging

Bettany et al. (2010) found that studies focusing on gender issues in marketing and consumer research are growing over the past twenty years. Naturally, gender differences have existed since an individual was born and played an important role in consumer behavior, which psychologically symbolized as masculine and feminine. Gender significantly impacts consumer behavior towards eco-friendly products, particularly in relation to individual income levels (Silva & Pownall, 2014; Pinto et al., 2014). Several studies indicated significant gender difference in consumer behavior of environmentally friendly products (Lee., 2009; Han et al., 2009; Mostafa., 2007). Brough et al. (2016) coined that consumer behavior of environmentally friendly products is associated with female identity, forming a stereotype that women are "greener" than men. Nguyen et al. (2017) suggested that gender moderates antecedents' influence on eco-friendly intention to purchase, in which attitude's positive influences on intention to purchase are stronger on women. Referring to the findings of previous studies, the authors shall test and explain the intention to purchase green packaging by gender.

As described in the literature review, we formulate the following research framework.

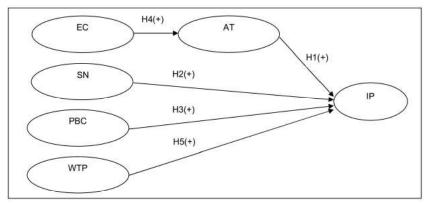


Figure 1. Research Model

Methodology

This research variables was using positivist and deductive approach to examine the causal relationship between (Saunders *et al.*, 2023; Neuman, 2020). The data were collected through a survey using purposive sampling technique. A total of 276 university students were involved as respondents which consist of 132 male respondents (47.8%) and 144 female respondents (52.2%). The number of respondents by gender was still relatively balanced, so it could be analyzed thoroughly.

Within this study framework, six variables were utilized, categorized as exogenous or endogenous variables. There are five exogenous variables named: willingness to pay (WTP), attitude (AT), environmental concern (EC), subjective norm (SN), and perceived behavioral control (PBC). Intention to purchase (PI) was the endogenous variable. Variables in this study are operationalized using Prakash and Pathak (2017), Yadav and Pathak (2016), and van Birgelen *et al.* (2009). A 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) was used to measure each variable.

The gathered data was analyzed using Structural Equation Modeling (SEM) and an independent t-test. The researchers utilized the two-step SEM methodology introduced by Anderson and Gerbing (1988), employing Confirmatory Factor Analysis (CFA) and structural model testing to evaluate the hypotheses.

Results and Discussions

The data were processed using AMOS software for SEM and SPSS for independent t-test. Confirmatory Factor Analysis (CFA) analysis, as the first stage construction of the SEM model, recorded a good value of the goodness of fit (GOF) ($x^2/df = 2.041$; RMSEA = 0.062; CFI = 0.913; TLI = 0.899; GFI = 0.873). The results of CFA analysis are shown in Table 1:

Table 1. Measurement Model Results

Measurement Items	Standardized Loading Factor (λ)	Construct Reliability (CR)		
AT1	0.859			
AT2	0.525	0.678		
AT3	0.518			
EC1	0.521			
EC4	0.753	0.749		
EC5	0.763	0.749		
EC6	0.560			
SN1	0.577	0.811		
SN2	0.675			
SN3	0.743			
SN4	0.603			
SN5	0.600			
SN6	0.669			
PBC1	0.620			
PBC2	0.782	0.746		
PBC3	0.703			
WTP1	0.926			
WTP2	0.764	0.902		
WTP3	0.909			
IP1	0.700			
IP2	0.613			
IP3	0.724	0.804		
IP4	0.757			
IP5	0.552			

CFA analysis results in Table 1 show that all indicators used to measure latent research variables are valid and reliable. The validity is indicated by a minimum standardized loading factor (λ) at 0.5 (Hair *et al.*, 2019). The minimum λ value of all indicators in this study were accounted for at least 0.518, signifying that all indicators of research variables are valid. In addition, all research variables recorded Construct Reliability (CR) of at least 0.6 (Hair *et al.*, 2019), indicating that all research variables in this study are reliable. At this CFA stage, the authors assert that the data were collected through valid and reliable research instruments.

Table 2. Comparison between Gender Samples

Variable	Male		Female		Independent t-test	
	Mean	SD	Mean	SD	t	Sig.
Attitude (AT)	3.755	0.549	3.736	0.602	0.273	0.785
Environmental Concern (EC)	3.792	0.533	3.774	0.574	0.260	0.795
Subjective Norm (SN)	3.794	0.492	3.889	0.515	-1.561	0.120
Perceived Behavior Control (PBC)	3.998	0.605	4.127	0.593	-1.799	0.073*
Willingness to Pay (WTP)	3.250	0.833	3.456	0.710	-2.200	0.029**
Intention to purchase (PI)	3.639	0.526	3.747	0.530	-1.69	0.091*

Notes: $*p \le 0.1$; $**p \le 0.05$

Table 2 depicts the results of the research variables' mean and standard deviation ratio categorized by gender sample groups. The average intention to purchase toward green packaging among females is greater and more significant than males. Additionally, willingness to pay and perceived behavioral control also recorded similar results. These results confirm the findings in Lee's (2009) study which stated that purchasing behavior toward green packaging among female was greater than that of men.

Furthermore, testing the research hypotheses on each gender was done by constructing the SEM of the structural model stage. The values of GOF model in the male sample group ($x^2/df = 1.817$; RMSEA = 0.079; CFI = 0.843; TLI = 0.821; GFI = 0.790) and women ($x^2/df = 1.624$; RMSEA = 0.066; CFI = 0.913; TLI = 0.901; GFI = 0.826) suggested that the structural models of both gender groups in this study are significant and deserve further interpretation. A summary of structural model test is shown in Table 3.

Table 3. Hypotheses Test Results in Structural Model by Gender

Hypothesis	Path Between Variables	Standardized Estimates (β)	Critical Ratio (C.R.)	P-value		
Male Sample						
H1 (+)	AT to IP	0.100	0.873	0.383		
H2 (+)	SN to IP	0.191	0.998	0.318		
H3 (+)	PBC to IP	0.480	2.248	0.025		
H4 (+)	EC to AT	0.733	2.731	0.006		
H5 (+)	WTP to IP	0.311	3.213	0.001		
Female Sample						
H1 (+)	AT to IP	0.268	1.963	0.050		
H2 (+)	SN to IP	0.434	2.596	0.009		
H3 (+)	PBC to IP	0.092	0. 744	0.457		
H4 (+)	EC to AT	0.949	6.636	***		
H5 (+)	WTP to IP	0.155	1.675	0.094		

Notes: *** Significant coefficient is recorded at P-value < 0.001

Based on the summary in Table 3, the two gender groups show different relationship patterns among variables. For the young male group, attitude (H1) and subjective norm (H2) failed to explain the intention to purchase green-packaged product. These findings differed from young female group which showed that all predictors affected intention to purchase toward green packaging, except for perceived behavior control. The results were in line with earlier prediction in literature review which stated that gender groups illustrated predictor relationship pattern with intention to purchase toward green packaging. Women group sample explained that the effects of predictors on intention to purchases toward green packaging were better than that of men.

Conclusion

The results of empirical data analysis in this study provide an understanding that the factors affected intention to purchase green packaging among young consumers in Indonesia differed by gender. Women recorded higher intention to purchase toward green packaging than men. Furthermore, intention to purchase toward green packaging among women was influenced by all hypothesized antecedents, except for perceived behavioral control. As for the male group, attitude and subjective norm have no effect on the intention to purchase toward green packaging.

Referring to the analyses' results, the authors come up with several recommendations for future research. Firstly, future research can widen the research framework by adding other variables which are theoretically influencing intention to purchase toward green packaging among young consumers, namely product characteristics and ease to purchase the product. Secondly, future researchers can construct experimental research to provide empirical evidence to strengthen that gender indeed influences consumer responses for green-packaged products. Thirdly, future research shall enhance model generalizability by implementing it on a different set of samples using probability samples, as well as testing it in a certain period. Lastly, gender preferences on green packaging should be socialized to managerial level, so that they are aware that marketing strategies should also consider consumers' gender.

The results of this study can be used to observe the use patterns of environmentally friendly packaging towards customers with different genders in developing countries. The large population in developing countries has potential to increase the sales of consumer goods, therefore, without the control of environmentally friendly packaging, it will increase the amount of packaging waste. The government's commitment to developing countries is also tested in this regard to be able to consistently apply the rules to regulate the product packaging. The results of this study show that gender roles determine the intention to purchase products with environmentally friendly packaging.

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