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# Consumers' purchase intention towards eco-friendly packaging in Kidapawan City, the Philippines

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## Abstract

The severity of the plastic problem in the Philippines has prompted the public and private sectors to take measures to address it. As the country shifts to sustainable ways, information about green consumer behaviour is essential to effectively implement policies and programmes. This study aimed to determine consumers' level of purchase intention towards eco-friendly packaging, whether a significant difference in consumers' purchase intention exists when they are grouped according to socio-demographic characteristics and identify the factors that significantly affect consumers' purchase intention. A total of 393 consumers from Kidapawan City were selected as respondents using purposive random sampling. The results revealed that respondents have a high level of purchase intention for eco-friendly packaging. There were also significant differences in the level of purchase intention when the respondents were grouped according to age and sex. Notably, females had a higher level of purchase intention. The findings from the hierarchical moderated regression analysis show that attitude, subjective norms, perceived behavioural control, environmental concern, awareness, willingness to pay and quality significantly and positively influence purchase intention towards eco-friendly packaging. In particular, it willingness to pay, quality and awareness strongly affect purchase intention. Meanwhile, the moderating variables do not affect the dependent and independent variables. The results of the study infer that purchase intention is greater among consumers when they have favourable attitudes and supportive social circles, perceive that it is easy to buy eco-friendly packaging, are more willing to support or participate in environmental initiatives, more knowledgeable, more willing to pay and have a positive perception of the quality of eco-friendly packaging.

**Keywords:** Eco-friendly packaging, Factors, Hierarchical moderated regression, Marketing, Purchase intention

## Introduction

As countries experience economic progress, the natural environment deteriorates as a trade-off. Countries address this by adopting sustainable development, which includes the promotion of green behaviour, i.e. pro-environment behaviour that minimizes harm to the environment (European Commission, 2012). This involves research that aims to develop sustainable production techniques, innovate technologies, craft business strategies and understand consumer behaviour in relation to environmental concerns.

Filipino consumers' green behaviour needs to be researched because businesses lack the information they need to decide whether to adopt sustainable ways, such as using eco-friendly packaging. As the country has recognized the plastic problem, groups and individuals from the public and private sectors are combatting this problem by practising and promoting sustainable practices, such as using eco-friendly packaging. However, the adoption of eco-friendly packaging remains slow because some businesses view this as a costly alternative (Alpad, 2021) and they lack information on consumers' behaviour towards it (Prakash et al., 2019).

Previous research on green behaviour, especially green consumption, has mostly been conducted in other countries. Existing research has addressed several aspects of green consumption, including the purchase of green products, consumer theory to be used and determinants of green purchase (Zhang & Dong, 2020). Focusing on eco-friendly packaging, most research has been conducted in China, the United States, India, Brazil, Italy, the United Kingdom, Spain, Malaysia, Canada and Germany (Wandosell et al., 2021).

In the Philippines, research on green consumption is relatively new. The topics that have been studied are consumers' profile, purchase intention and preferences. For example, Gregorio (2015) and Resurreccion (2015) pioneered green consumer research by creating a profile of Filipinos as green consumers. In addition, San Juan-Nable (2016) and Palmero and Montemayor (2020) investigated consumers' purchase behaviours for green products. Consumer studies about green behaviour, particularly eco-friendly packaging, in the Philippines remain scarce. The closest literature is the study by Gano-an (2018) about consumer preferences and perceptions of the use of eco-bags. To date, many opportunities for research about green behaviour in the country remain.

Some of these unexplored concepts about green behaviour appear to be important and worthy of investigation in the context of the Philippines. An investigation of these issues is essential because consumer preferences are shifting, and people are paying close attention to sustainable development. Moreover, promoting green consumerism must strike a balance among the perspectives of not only businesses, government and environmentalists but also consumers (Gano-an, 2018). Furthermore, previous empirical research has focused primarily on establishing Filipino consumers' green profile and green products, and little consumer research has been conducted on eco-friendly packaging.

This paper seeks to address the following objectives: (1) to determine the level of purchase intention of consumers towards eco-friendly packaging; (2) to determine significant differences in the level of purchase intention when grouped according to socio-demographic profiles; and (3) to identify the factors affecting purchase intention. This research contributes to the scant literature on green consumerism in the Philippine context. More importantly, it presents consumers' perspectives on the adoption of eco-friendly packaging that could prove useful in business decisions and policymaking.

## **Literature review**

Green behaviour, also known as pro-environment or sustainable behaviour, involves actions that impact water conservation, air quality, energy efficiency and use, transportation, agriculture and waste reduction (McKenzie-Mohr et al., 2011). Businesses have viewed green behaviour, especially by consumers, as a commercial opportunity, and it has developed further as a research field (Peattie, 2010). As such, research related to green marketing is important, as it can foster cleaner production by businesses and sustainable consumption through successful marketing to consumers (Dangelico & Vocalelli, 2017). In particular, green consumption has been widely studied to gain a better understanding of consumers' changing behaviour in relation to their environmental concerns. According to Peattie (2010), green consumption research encompasses studies related to consumers' intentions and behaviours and studies founded in industrial ecology or environmental economics.

The existing literature shows that research related to green consumer behaviour in the Philippines is scarce and relatively new. Pioneering research includes Gregorio (2015), who aimed to understand the impact of green marketing and provide the profile of green consumers. The study revealed that the lack of green consumerism behaviour was attributed to the convenience and availability of non-eco-friendly products

compared to eco-friendly products. Another study provided a profile of Filipino green consumers. Using cluster analysis, Resurreccion (2015) found two groups of sustainable consumers: the “mature and product cautious” and the “young and socially pressured”.

Few purchase intention studies on eco-friendly products have been conducted in the country. San Juan-Nable (2016) determined the factors affecting the intentions and behaviours of young consumers towards buying green products. The author found that parental influence and media exposure are significant predictors. Meanwhile, Palmero and Montemayor (2020) identified the factors that influence purchase intention toward organic local food. Their findings revealed that environmental concern and health and social responsibility are important drivers of young consumers’ purchase intention toward organic products. Overall, green consumer research in the country has covered profiling and marketing research on eco-friendly products. Consumer research focusing on eco-friendly packaging is lacking.

## **Methods**

This research utilized a descriptive-correlational quantitative design using a survey method for data gathering. Given the limitations that the COVID-19 pandemic brought during the study period, a nonprobability sampling technique, i.e. purposive random sampling, was used to determine the respondents. The selection criteria for the respondents included being a resident of Kidapawan City, earning his/her income and having a fair level of understanding of green consumerism.

The instrument used in the study was a self-administered survey questionnaire adapted and modified from Auliandri et al. (2019), Hoai (2017), Paul et al. (2016), Prakash et al., (2019), Rajendran et al. (2019) and Witek and Kuźniar (2021). The questionnaire was designed to obtain information about the respondent’s socio-demographic profile, namely age, educational attainment, income and sex. In addition, statements about purchase intention towards eco-friendly packaging and the factors affecting it were included in the instrument. The factors considered in the study were attitude, subjective norm, perceived behavioural control, environmental concern, awareness, willingness to pay and quality. The questionnaire consisted of 40 items, which were measured using a 6-point Likert scale. This underwent reliability and validity tests to ensure the quality and unobtrusiveness of the statements.

The researcher utilized offline and online surveys to maximize the benefits of both. Ethical considerations were also considered during the data collection. The respondents were informed about the study and their consent to participate was obtained. For the offline survey, respondents were reached in urban residential areas, businesses and offices within the city. Surveys in businesses and offices were only conducted after the letters of request were approved.

A total of 393 responses were determined usable for the statistical analysis. The weighted mean was used to determine the consumer’s level of purchase intention. An independent samples *t*-test and one-way ANOVA were used to determine significant differences in the level of purchase intention when the respondents were grouped according to their socio-demographic characteristics. Hierarchical regression analysis was employed to identify the significant factors that affect consumers’ purchase intention towards eco-friendly packaging.

## Results and discussion

The consumers' level of purchase intention towards eco-friendly packaging is shown in Table 1. The findings show that consumers have a high intention to purchase products with eco-friendly packaging when offered in the market (5.30). This finding is in line with the study by Palmero and Montemayor (2020), which found that young Filipino consumers have the intention to buy eco-friendly products. Consequently, their purchase intention significantly influenced their decision to purchase. The possible reasons for this are Filipino consumers becoming more informed of the ecological impact of plastic packaging (Cahiles-Magkilat, 2020) and the consequent initiatives launched by both the public and private sectors.

The respondents strongly agreed that they would consider buying eco-friendly packaging because it is less polluting (5.42), and they wanted to purchase products with eco-friendly packaging in the near future (5.37). A recent survey revealed that 75% of Filipinos were actively looking for brands that offset their impacts on the environment (Cahiles-Magkilat, 2021). This shows the changing preferences of Filipino consumers, which are geared towards sustainability. Furthermore, the results demonstrated the respondents' plans to spend more on eco-friendly packaged products (5.18). Gregorio's (2015) study found that consumers are willing to pay an average 12.5% premium for eco-friendly products. No literature in the Philippine context has specified the particular demographics of these consumers. However, several considerations are weighed by Filipino consumers when purchasing eco-friendly products, which are usually perceived as more expensive than their conventional counterparts. These important considerations are value for money (Palmero & Montemayor, 2020), information and social acceptance (Resurreccion, 2015).

*Table 1: Consumers' level of purchase intention towards eco-friendly packaging.*

Statements	Weighted Mean	Interpretation
1. I will pay attention to the eco-friendly aspects of the packaging of the products I buy.	5.22	Strongly agree
2. I will consider buying eco-friendly packaging because it is less polluting.	5.42	Strongly agree
3. I will consider switching to eco-friendly brands for ecological reasons.	5.33	Strongly agree
4. I plan to spend more on products packaged in eco-friendly materials rather than those that are not.	5.18	Strongly agree
5. I want to purchase eco-friendly packaged products in the near future.	5.37	Strongly agree
Total	5.30	Strongly agree

Tests of difference were conducted to determine differences in the level of consumer purchase intention when grouped according to age, educational attainment, income and sex. Table 2 shows the results of the one-way ANOVA. There was a significant difference in the level of purchase intention of consumers when grouped according to age ( $p$ -value = 0.025). This finding conforms to the research conducted by Witek and Kuźniar (2021), which found statistically different levels of green purchase intention among young and old consumers.

On the other hand, the level of purchase intention for eco-friendly packaging was not statistically different across educational attainment ( $p$ -value = 0.511) or income ( $p$ -value = 0.188) groups. This finding is like the results of the studies conducted by Naz et al. (2020) and Rahim et al. (2017). They posited that eco-friendly

products are accepted by consumers regardless of their income due to the popularity and increase in marketing campaigns. The findings could also be attributed to the growing consciousness of Filipino consumers about the detrimental effects of plastics and the availability of eco-friendly alternatives.

*Table 2: Differences in the level of purchase intention when grouped according to age, educational attainment and income.*

Profile	Mean Square		Test Statistic	p-value
	Between Groups	Within Groups		
Age	1.350	0.518	2.604	0.025*
Educational Attainment	0.437	0.531	0.823	0.511
Income	0.778	0.517	1.504	0.188

Table 3 presents the results of the independent samples t-test. The results showed a significant difference in the level of purchase intention for eco-friendly packaging in terms of sex (p-value = 0.009). Comparing the mean scores of the males (5.1656) and the females (5.3720) revealed that the latter had a higher level of purchase intention for eco-friendly packaging. These findings are supported by the studies by Witek and Kuźniar (2021) and Rahim et al. (2017), who found a significant difference in the green purchase intentions of females and males. They attributed this finding to female consumers possessing higher environmental concerns than male consumers.

*Table 3: Significant difference in the level of purchase intention when grouped according to sex.*

Profile	Mean Difference	Standard Error Difference	p-value
Sex	-0.2064	0.0786	0.009**

The influence of the independent variables, namely attitude, subjective norm, perceived behavioural control, environmental concern, awareness, willingness to pay and quality, on the purchase intention towards eco-friendly packaging were analysed using hierarchical regression. These variables were entered into the models after all assumptions of the regression model were met. In the first model, the independent variables established in the Theory of Planned Behaviour, namely attitude, perceived behavioural control and subjective norm, were entered. The additional variables, specifically environmental concern, awareness, willingness to pay and quality, were added in the second model.

At stage one, attitude, subjective norm and perceived behavioural control contributed significantly to the regression model ( $\Delta F = 253.019$ ,  $p < 0.001$ ). Moreover, the coefficient of determination ( $R^2$ ) showed that the independent variables explained 66.3% of the variability in the purchase intention towards eco-friendly packaging. This indicates that model one (1) is a good fit. Adding environmental concern, awareness, willingness to pay and quality to the model explained an additional 9% of the variation in purchase intention, and this change was significant at the 1% level ( $\Delta F = 34.873$ ,  $p < 0.001$ ). Furthermore, all the independent variables accounted for 75.4% of the variance in purchase intention. These suggest that adding the other independent variables yielded a model that better predicts purchase intention. Table 4 provides the b-values (b), beta coefficients ( $\beta$ ), t-test scores and p-values for each variable accounted for in both models.

Table 4: Summary statistics of the variables.

Variable	b	$\beta$	t	p-value
<b>Model 1</b>				
(Constant)	.839		5.012	.000
Attitude	.383	.379	8.586	.000**
Subjective norm	.186	.217	4.716	.000**
Perceived behavioural control	.290	.315	6.967	.000**
<b>Model 2</b>				
(Constant)	.190		1.178	.240
Attitude	.110	.108	2.198	.029*
Subjective norm	.085	.099	2.417	.016*
Perceived behavioural control	.121	.131	3.070	.002**
Environmental concern	.129	.120	2.229	.026*
Awareness	.183	.168	3.433	.001**
Willingness to Pay	.174	.213	5.779	.000**
Quality	.176	.187	4.759	.000**

The findings show that all the independent variables considered in this study significantly and positively influenced purchase intention towards eco-friendly packaging. In particular, attitude ( $t = 2.198$ ,  $p = 0.029$ ), subjective norm ( $t = 2.417$ ,  $p = 0.016$ ) and environmental concern ( $t = 2.229$ ,  $p = 0.026$ ) are statistically significant at the 5% level, while perceived behavioural control ( $t = 3.070$ ,  $p = 0.002$ ), awareness ( $t = 3.433$ ,  $p = 0.001$ ), willingness to pay ( $t = 5.779$ ,  $p = 0.000$ ), and quality ( $t = 4.759$ ,  $p = 0.000$ ) were significant at the 1% level. The results also show that willingness to pay ( $\beta = .213$ ), quality ( $\beta = .187$ ), and awareness ( $\beta = .168$ ) were the strongest predictors of purchase intention.

The findings on attitude, subjective norm and perceived behavioural control provide additional empirical evidence that supports the Theory of Planned Behaviour as a theoretical framework for research about purchase intention. Consistent with the studies in the literature, attitude was found to significantly affect purchase intention towards eco-friendly packaging. When consumers' beliefs and feelings towards buying eco-friendly packaging are favourable, they have a greater intention to buy it (Martinho et al. 2015; Moorthy et al., 2021; Prakash & Pathak, 2017; Trivedi et al., 2018). The results indicate that Filipino consumers' favourable attitudes towards buying eco-friendly packaging led to greater intention to purchase them. An explanation for this relationship is the exposure to information about environmental problems. This develops the consumer's favourable attitude to participate in efforts to solve these problems, such as buying eco-friendly packaging.

Subjective norm was also found to positively influence purchase intention. This indicates that the consumers' perceived social pressures from family, friends and/or important people influence them to purchase eco-friendly packaging (Auliandri et al., 2019; Martinho et al., 2015). The finding suggests that Filipino consumers are conscious of how people close to them and/or society in general view their actions, especially those that affect the environment. Culture may also play a part in this relationship. Conforming to the norm and the actions of the majority is deemed important in Philippine society. Consumers' perceptions of how easy or difficult it is to buy eco-friendly packaging, which could be determined by their ability to purchase and the availability of resources, was also found to affect purchase intention (Auliandri et al., 2019; Moorthy et al., 2021). When consumers perceive that it is easy for them to buy eco-friendly

packaging, the more likely it is that they intend to buy it. Consumer preference for convenient shopping can explain this relationship. Access and availability of eco-friendly packaging are essential to realize purchase intention.

Consumers' concern for the environment also influences their intention to purchase eco-friendly packaging (Martinho et al., 2015; Prakash & Pathak, 2017). This shows that consumers have a greater intention to purchase eco-friendly packaging when they are more willing to support efforts to solve environmental problems. Like attitude, exposure to information about environmental degradation caused by consuming single-use plastics among others may explain this relationship. This is manifested by consumers' growing demand for sustainable products and practices nowadays. Among all variables in the model, the strongest predictor is willingness to pay. The more willing consumers are to pay for eco-friendly packaging, the greater their intention to buy it. This finding coincides with the findings of the studies conducted by Auliandri et al. (2019) and Prakash and Pathak (2017). In the Philippine context, several authors have noted that Filipino consumers are willing to pay more for eco-friendly products in general (Gregorio, 2015; Palmero & Montemayor, 2020; Resurreccion, 2015). This relationship may be attributed to consumers' desire to protect the environment and/or to contribute to solutions, since eco-friendly packaging is more beneficial to the environment. This benefit could be seen as an added utility to the money spent on eco-friendly packaging. Palmero and Montemayor (2020) also noted that Filipino consumers greatly consider value for money when purchasing.

Another strong predictor of purchase intention towards eco-friendly packaging is quality. The quality of eco-friendly packaging is deemed an important determinant of intention to purchase it. Like the results found by Rajendran et al. (2019), in this study consumers had a greater intention to purchase eco-friendly packaging when they perceived it to have better quality. The notion that eco-friendly packaging is less polluting to the environment and is as good as conventional packaging could explain this relationship. The quality of eco-friendly packaging remains an important consideration to consumers, especially if they are paying more for it. Lastly, the study found that awareness is a significant predictor of purchase intention, i.e. consumers have a greater purchase intention for eco-friendly packaging when they are more aware and knowledgeable about it. This finding is consistent with the results of Rajendran et al. (2019) but contrasts with the results of Aleenajitpong (2013). One reason for this relationship is that Filipino consumers are becoming more informed about environmental problems, particularly plastic pollution, and more aware of the available eco-friendly alternatives. As such, this is manifested in their increasing demand for sustainable products and practices at present.

### **Conclusions and recommendations**

The findings of this study revealed that consumers have a relatively high level of purchase intention for eco-friendly packaging. In addition, the test of significant difference revealed that a significant difference in the purchase intention of respondents only when they are grouped according to age and sex. In particular, female consumers have a higher level of purchase intention for eco-friendly packaging. Also, the results of the regression analysis imply that purchase intention is greater among consumers when they have the following: a favourable attitude, supportive social circles, positive perception of the ease of buying eco-friendly packaging, willingness to support or participate in environmental initiatives, knowledge about eco-friendly packaging, willingness to pay for eco-friendly packaging and a positive perception of the quality of eco-friendly packaging. Among these, willingness to pay, quality and awareness of eco-friendly packaging influence consumers' purchase intention the most.

Understanding the consumer perspective is essential for business decisions and policymaking. As this study has determined the purchase intention towards eco-friendly packaging, businesses and policymakers are provided with information regarding the receptiveness of consumers to its adoption in the country. In particular, businesses, manufacturers of packaging materials and inventors/innovators of eco-friendly packaging could use this information when deciding to expand the use, production and development of eco-friendly packaging. Together with government units, they could find the results about the significant factors useful in making business strategies, policies and programmes.

The current work only explored the direct relationship between the dependent and independent variables. Future researchers may consider exploring the interrelationships of the independent variables examined in this study. Moreover, they may use other statistical tools that include the analysis of the interrelationships of the independent variables. To give substantial support to the quantitative findings, it is suggested to include a qualitative analysis in future research. Hence, a mixed research design employing either in-depth interviews or focus group discussions is recommended.

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