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Determinants of consumers' intention to purchase and switch to products of bio-waste: Potential support for a closed-loop supply chain

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Abstract

The impact of urbanisation and increasing number of populations have become major factors that lead to negative impact toward the environment. Although waste management has been practiced by most of the marketers, the problem of waste is still not well-managed. Therefore, this study is conducted with the aim to examine the impacts of consumers' perception towards products of bio-waste and to understand consumers' purchasing behaviour. The paper adopted multiple regression analysis in investigating consumers' perception towards bio-waste products and consumers' purchasing behaviour variables. The self-administered surveys were randomly disseminated to Penang consumers, where 99 responses were collected. The result shows a positive relationship between consumers' perception towards bio-waste and purchase behaviour variables, which is consistent with the theory of planned behaviour. Thus, this study caters several implications and recommendations to the scholars, industrial practitioners and policymakers regarding consumers' perception and purchasing behaviour towards bio-waste products.

Keywords:
bio-waste products;
consumers' purchasing behaviour;
supply chain;
Penang.

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1. Introduction

In today's world, the topic of "environmentally friendly" is fervently discussed, but the actual practices of waste management and consumption remain isolated (Vela et al., 2022). From the evidence of Chen et al. (2018), it could be concluded that the system of waste management in Malaysia are deficient and unable to cope with the production of biodegradable and non-biodegradable waste. This reflects the cruciality of promoting awareness of the society with the purpose of reducing and preventing waste through integrating in Closed-loop Supply Chain. Many industries have begun to implement waste management for the purpose of strengthening their competitive advantages in the market. One of the most common strategies adopted by industries for managing their waste and maintaining sustainability is through adoption of Closed-loop

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Supply Chain (Jain et al., 2022). Meanwhile, an action plan, namely National Solid Waste Management Policy, has been introduced to support the chain through the application of the 3Ps principle which refers to reducing, reusing, and recycling waste.

Malaysia has insufficient waste management system to deal with the volume of waste production. National statistics have shown that, the production of waste in Malaysia escalated 8.5% annually from 2015 until 2019, with total production of 4013.2 tons of waste in the year 2019 (Baharudin, 2022). Thus, the increase of waste production has urged the country to revolutionise its waste management system in reducing the destruction of the ecosystems and human health.

Besides, many industries may face difficulties and limited capabilities to perform and manage waste (Ferronato and Torretta, 2019). In Malaysia, the industries that produced the most waste in 2019 are attributed to the power plants, metal refinery, chemical industry and electric and electronic, which contributed 24.2 percent, 12.2 percent, 10.7 percent, and 10.1 percent of wastes respectively (Baharudin, 2022). Within these industries, wastes are generated from faulty products in production sites, as well as unwanted, expired, or obsolete products.

Bio-wastes, for example, food waste, paper waste, and many more, are biodegradable and made of safe substances. Several research studies proved that bio-wastes are commonly contributed by individual households, and it is essential to be overcome (Hanc et al., 2011). According to the literature, there is insufficient evidence to conclude consumer acceptance towards products of bio-waste (Osburg et al., 2016). Since consumers' intention to purchase might be influenced by their perceptions of bio-waste products, alongside various external factors, the lack of understanding has further prevented logistics industries and business practitioners from evaluating the viability of implementing closed-loop supply chain and waste re-production (Ramya and Ali, 2016). Hence, the following core research questions are developed:

RQ1: What is the relationship of product involvement with intention to purchase bio-waste products?
RO2: What is the relationship of green identity with intention to purchase bio-waste products?
RO3: What is the relationship of subjective norms with intention to purchase bio-waste products?
RQ4: What is the relationship of product involvement with intention to switch to bio-waste products?
RO5: What is the relationship of green identity with intention to switch to bio-waste products?
RO6: What is the relationship of subjective norms with intention to switch to bio-waste products.

2. Literature review

Supply Chain Management is the management of the entire value chain that focuses on production flow of goods and services from the movement of raw materials to the end consumers (Ellis and Santagate, 2018). Due to the increasing expectation of end consumers for their desired goods and services, the sellers must enhance the overall products' standard to remain competitive and sustainable in the global market. Hence, supply chain management plays an important role to integrate in the supply chain effectively and ensure the business objectives are coupled with the mandatory safety procedures (Carmignani, 2009). Thus, the Theory of Planned Behaviour (TPB) is introduced to underpin consumers' perceptions over intention to purchase and intention to switch for their desire goods and services. TPB is an extended model of the Theory of Reasoned Action and one of the most extensive models for social psychologists to predict behavioural intention (Ajzen 1985). It suggests behaviour is driven by an individual's intentions, which are

influenced by three main factors: attitudes, subjective norms, and perceived behavioural control (Fishbein and Ajzen 1975).

Traditional supply chain management tends to focus on the entire supply chain, which may overlook some detailed problems that could occur in the chain; or lack of expertise to deal with and prevent the problems Thus, this has led to the need of integrating management approaches such as closed-loop supply chain (CLSC) to overcome and avoid circumstances in the global business market in mitigating the supply chain risks and problems.

2.1 Closed-loop supply chain

CLSC is one of the main management approaches implemented for waste prevention and bullwhip effect elimination (Papanagnou, 2022). It consists of a combination of traditional linear supply chain and reverse loop of supply chain, whereby waste produced in the chain is sent back to the manufacturing sector to be remanufactured and recreate value. A systematic closed-loop supply chain could help both organisation and society to manage the existing environmental constraints generated from the rising population and inappropriate management of wastes (Abdolazimi et al., 2020). Bio-waste has attracted huge attention from the global market, as it could be used by the manufacturer to create a new product life cycle and add value for the waste products (Veolia, 2022). However, there is an uncertainty over the demand of bio-waste products due to consumers' perception, which will be investigated in this report.

2.2 Consumers' purchasing behaviour

2.2.1 *Intention to Purchase*

Intention to purchase is generally referring to the attitudes or reactions of consumers toward a certain product before the process of purchasing begins, to make sure the products can meet their desires (Al Zubaidi, 2020). The intention to purchase of consumers depend on several reasons, which remains to be further examined (Medeiros et al., 2016). In previous studies, consumers' intention to purchase is commonly examined by studying the underlying factors that affect consumers' attitude towards a product before and during the purchasing process (Sharma and Foropon, 2019).

2.2.2 Intention to switch

Intention to switch simply refers to consumers' purchase behaviour that changes from one product to another, including changing from a previously desired product to another product currently desired (Khoiriyah et al., 2017). Consumers who purchase green products commonly have an intention to switch towards remanufactured products, as these consumers usually hold green self-identity. This switching intention is usually affected by consumers' green behaviour, rather than the market behaviour such as price (Perez-Castillo and Martinez, 2021). Examining intention to switch of consumers could allow the researchers to understand the current consumers' purchasing behaviour and interests towards bio-waste products as well as the reasons for switching to bio-waste products (Chang et al., 2021). For example, product involvement, green self-identity, and subjective norms.

2.3 Perception towards bio-waste products

2.3.1 Product involvement

Product involvement is generally referring to the perceived value and feelings of consumers towards the consumption of a product based on the products' characteristics. For example, dependability, worthiness, and interest (Jaeger et al., 2018). Past studies show that consumers have less interest towards remanufactured products that are made of bio-waste, although it is clean and low costs. This is due to the consumers' belief that the products that are remanufactured from bio-wastes are unhygienic and easily to be damaged (Abbey et al., 2014). This directly reflects that consumers' perceived value could impact their perceptions directly and it is important to be studied. Inevitably, the product involvement for bio-waste products could vary directly according to consumers' green self-identity.

H1: Product involvement significantly affects Intention to Purchase.

H2: Product involvement significantly affects Intention to Switch.

2.3.2 Green self-identity

Green self-identity is generally identified as the identification of consumers with their behaviour towards personal value and environmental-friendly behaviour (Khare and Pandey, 2017). Global and environmental issues have created a significant awareness to the current society, and therefore, more and more consumers are intending to contribute as a part of overcoming these issues. The process of remanufacturing bio-waste could be logically considered as a process of reducing waste and eliminating environmental issues in the current world. According to Ong et al., (2015) who have examined consumers' perception towards green products, the major factor influencing changes in consumers' purchase behaviour is green self-identity instead of prices of products, but the green self-identity. Green self-identity of individual consumers could be generated or affected by external factors such as subjective norms.

H3: Green Self-Identity significantly affects Intention to Purchase.

H4: Green Self-Identity significantly affects Intention to Switch.

2.3.3 Subjective norms

Subjective norms refer to the approval given by a group of people for a particular action being done. In other words, the behavioural and manners of conducting an action is determined by social pressures (Ham et al., 2015). According to past studies, the subjective norm is one of the factors that are well-known to influence consumers' perception toward green products, as it could directly bring changes to the intention to purchase of consumers (Al-Swidi et al., 2014). For example, consumers may worry about being isolated from the current society, if they refuse to purchase bio-waste products. For these reasons, the intention to purchase and switch to bio-waste products increases, as consumers may intend to avoid society biasness (Ko and Jin, 2013).

H5: Subjective norms significantly affect Intention to Purchase.

H6: Subjective norms significantly affect Intention to Switch.

2.4 Research model

By adopting TPB in this research, the study aims to gain a comprehensive understanding of the relationships between customers' intention to purchase and intention to switch for bio-waste products. This research model allows for a deeper analysis of the underlying mechanisms through which customers' perceptions influence customers' intentions towards bio-waste products (Ahmed et al., 2021).

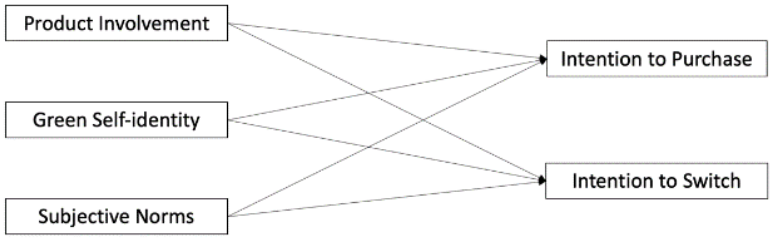


Figure 1: Research Model

3. Data, sample and analysis

The research utilised multiple regression quantitative analysis in investigating consumers' perception towards bio-waste products and consumers' purchasing behaviour variables in Penang. Individual consumers formed the unit of analysis for the research. Based on the output of G*Power software, a minimum sample size of 85 is appropriate. It was decided that 200 research questionnaires were to be distributed to provide allowance for non-responses and incomplete responses in order to achieve the minimum (Lakens, 2022). 200 questionnaires were distributed online using Google Form to consumers aged 18 years old and above , as consumers above this age range in Penang are working adults having the capabilities to hold a certain purchasing power. A total of 99 completed questionnaires were returned, forming a response rate of 49.5%, as indicated in Table 1.

Table 1. Demographic Profile

Variables	Categories	Frequency	Percentage
Age	18 – 25	48	48.5
	25 – 34	25	25.3
	35 – 54	21	21.2
	Above 54	5	5.1
Gender	Male	41	41.4
	Female	58	58.6
Education Level	High School	25	25.3
	Undergraduates	47	47.5
	Postgraduates	25	25.3
	Post Doctorate	2	2.0

3.1 Reliability

Cronbach's alpha reliability analysis was performed to ensure the validity and internal reliability of each construct. Generally, Cronbach's alpha values of 0.7 and above are considered consistent

and reliable (Ursachi et. al., 2015). Table 2 displays the reliability test for intention to purchase, intention to switch, product involvement, green self-identity, and subjective norms. All Cronbach's alpha values are above 0.7, indicating validity and reliability of the scale in measuring the intended variables.

Table 2. Reliability Analysis

Variables	Number of items utilised	Cronbach's Alpha
Intention to Purchase (IP)	5	0.95
Intention to Switch (IS)	5	0.95
Product Involvement (PI)	5	0.95
Green Self-Identity (GSI)	5	0.96
Subjective Norm (SN)	3	0.93

3.2 Pearson correlation analysis

Pearson Correlation Analysis was used as a tool for analysing data in this research paper. It was used to inspect the associations and relationship between independent variables and dependent variables. In general, strong correlation is present when the significant value is above 0.75 (Udovicic et al., 2007). Pearson Correlation Analysis is produced and shown in the table below with 1-tailed significant value to ascertain the relationship of variables. In Table 3 below, it shows evidence for significant correlation between independent and dependent variables. Product involvement, green self-identity and subjective norm have a positive relationship with intention to purchase. Among all independent variables, green self-identity has the strongest relationship with intention to purchase (r = 0.697). In contrast, product involvement has the weakest relationship with intention to purchase (r = 0.653).

Apart from that, all independent variables also have a positive relationship with the intention to switch. Among all independent variables, green self-identity has the strongest relationship with intention to switch (r = 0.695), followed by subjective norms (r = 0.675). Meanwhile, product involvement is the independent variable that has the weakest relationship with intention to switch (r = 0.675).

Table 3. Pearson Correlation Analysis

	EP	IS
PI	0.653**	0.675***
GSI	0.697**	0.695**
SN	0.674**	0.677**

**p< 0.01 (one-tailed)

To conclude, all dependent variables have moderate relationships with independent variables as shown in the correlation results. Therefore, further examination would be required for the purpose of indicating whether the variables are having direct or indirect association.

3.3 Multiple regression analysis

Table 4 represents the multiple regression results which tested the influence of product involvement, green self-identity and subjective norms on intention to purchase. It was found that

green self-identity is positively related to intention to purchase with β = 0.305 and p = 0.042, which is significant and supported. On the other hand, product involvement and subjective norms are insignificant factors, with β = 0.158 and p = 0.1455 (PI), β = 0.011 and p = 0.055 (SN). Therefore, H3 is supported and there is no support for H1 and H5.

Table 4. Regression Analysis for Intention to Purchase

Hypotheses	Standardized Beta (β)	*t* value	*p* value	Decision
H1: PI□ IP	0.158	1.062	0.1455	Not Supported
H3: GSI □ IP	0.305	1.748	0.042	Supported
H5: SN □ IP	0.011	2.586	0.055	Not Supported

Notes:
** p**<0.01 (one-tailed)
IP = Intention to Purchase; IS = Intention to Switch; PI = Product Involvement; GSI = Green Self-identity; SN = Subjective Norms

Results of multiple regression analysis that tested the influence of product involvement, green self-identity and subjective norm on intention to switch are presented in Table 5. Based on the results, product involvement is positively related to intention to switch with β = 0.265 and p = 0.0375, which is significant. Besides, subjective norms are also positively related to intention to switch with β = 0.322 and p = 0.004, which is highly significant. In contrast, green self-identity was found to be an insignificant factor in relation to intention switch (β = 0.201 and p = 0.1235). Thus, both H2 and H6 are supported and H4 is not supported by the data.

Table 5: Regression Analysis for Intention to Switch

Hypotheses	Standardised Beta (β)	*t* value	*p* value	Decision
H2: PI□ IS	0.265	1.800	0.0375	Supported
H4: GSI□ IS	0.201	1.164	0.1235	Not Supported
H6: SN □ IS	0.322	2.695	0.004	Supported

Note:
p** <0.01 (one-tailed)
IP = Intention to Purchase; IS = Intention to Switch; PI = Product Involvement; GSI = Green Self-identity; SN = Subjective Norms

4. Conclusions, practical implications and future research

According to the findings, the relationship between product involvement and intention to purchase is not significant. This is consistent with the findings of Lee et al. (2017) and Mou et al. (2020) as consumers evaluate the product involvement according to their needs, desires, and value (Bian and Moutinho, 2011). In addition, Rahbar and Wahid (2010) proved that consumers who are based in Penang usually purchase green products due to social responsibilities, as they wish to contribute to social welfare.

Moreover, the result indicates that green self-identity significantly and positively influences the intention to purchase products of bio-waste with β = 0.305 and p = 0.042, which is significant. This result is consistent with findings in Ong et al., (2015) and Barbarossa, et. al. (2017). Consumers have higher intention to purchase if they perceive an environmental-friendly identity for being a part of environmental and social contribution (Barbarossa and De Pelsmacker, 2016). Consumers who prioritise the environment and its conservation tend to support products made

of bio-waste. Therefore, this study suggests that green self-identity is a significant factor in driving the purchasing behaviour of consumers in Penang.

On the other hand, the relationship of subjective norms and intention to purchase is not significant with β = 0.011 and p = 0.055. Hence, it is evident that subjective norms are a factor that is slightly insignificant to predict the intention to purchase of consumers. According to Ruangkanjanes et al. (2020), the factor of subjective norm does not directly affect the perceptions of consumers over purchasing green products. Linear relationships only exist when the individuals or consumers are highly considering the attitude and behaviour of society. This result, however, is consistent with the previous studies of Chen et al. (2018) and Nguyen et al. (2017) that show the relationship of subjective norms and intention to purchase is not significant. Besides, Fischer et al. (2019) also suggested subjective norms could be different accordingly with cultural factors. The lack of influence of subjective norms triggers further concern. The results indicate the possibility that environmental concern is still very low among the consumers. It has not become a norm, where the consumers, as a group, support environmentally friendly products.

The findings of this study contribute to enhancing the understanding of effective strategies for bio-waste products, aiding marketers, and practitioners in developing targeted and impactful integrated bio-waste products campaigns that foster positive intention to purchases among customers. Two factors were found as significant determinants of consumers' intention to switch to products of bio-waste, namely product involvement and subjective norms. According to Niosi (2018), product involvement could significantly impact consumers' post-purchase behaviour, and therefore, causing the consumer to switch their intention afterwards. This evidence of finding is supported by Shukla (2004) and Adhikari (2019) reflecting a positive influence for product involvement with intention to switch. Such situations commonly occurred due to purchase experiences (Spacey, 2017).

Findings in relation to subjective norms are consistent with Ko and Jin (2013) and Wang (2014). Social pressure or subjective norms could influence consumers to switch their purchasing patterns for adapting to a new lifestyle or culture, if it meets their desires (Prati et al., 2015). The more desirable influences that exist in the society or surrounding, the higher the intention of consumers to switch from purchasing conventional products to environmentally friendly products (Ham et al., 2015).

Green self-identity on the other hand, was found to be not significant. It is highly possible that some of those who scored highly on green self-identity feel there is no need for them to switch products since they are already environmentally responsible purchases. Moreover, green self-identity could be relatively difficult to build and establish to cause the intention of consumers to switch their purchasing behaviour or attitudes (Sharma et al., 2020). According to Ong et al. (2015), green self-identity is the self-concept established by the individuals or consumers according to their environmental knowledge and attitude.

The increasing concern towards environmental issues has subsequently increased the urge to enhance awareness and understanding towards green purchasing behaviour. Consequently, these research findings can encourage society to perform green practices with the potential knowledge to mitigate and prevent environmental issues. For example, individuals can dispose their waste back to the manufacturer through applying the potential knowledge contributed by this study.

Furthermore, this study's findings also contribute to Malaysian government and regulatory parties through providing a clear message regarding consumers' perception towards bio-waste products. Thereby, this study can encourage government or policy makers to formulate a better

policy for society and business organisations. The initiatives could guide the practitioners to perform a proper transformation of waste with cost-efficient strategy and sustainable system.

Lastly, another practical implication of this study is to contribute the related literature to the marketers. The findings of this research create an opportunity for the marketers to apply close-loop supply chain strategy in their chain operations with the purpose of ensuring cost-efficient and sustainability, as well as contributing to environmental protection.

This study is not exempt from limitations, but it could potentially act as a guide for future research. Firstly, geographical constraints are presented in this research. The findings for this study were obtained from the consumers or individuals who are based in Penang. Nonetheless, consumers' attitudes and perceived value towards green products may vary accordingly in different states or regions due to culture difference and lifestyle difference. Therefore, the finding of this research is inappropriate to be generalised as representing the consumers in Malaysia. Secondly, the findings of this study were obtained and collected on a one-time basis. Reflecting the possibility of inaccuracy of data collection, as consumers' purchasing behaviour and perceptions could vary accordingly over time due to changes in trend and other possible factors. Thus, this study's findings are considered inappropriate to prove and evaluate the consumers' purchasing behaviour and perception over time. Thirdly, this study pertains to factors that are unknown to examine the consumers' perceptions towards bio-waste products. Although subjective norms have a higher possibility of impacting intention to purchase and switch, the reasons behind are unknown.

Future studies could avoid geographical constraints by utilising data across the states in Malaysia. This would allow scholars to capture the overall views of purchasing behaviour and perceptions with the considerations of different culture and lifestyle in Malaysia. Also, the period of conducting research findings should be lengthened, to capture different views and circumstances that could occur due to changes in trend. Besides, future studies could gain benefit using longitudinal data. Lastly, a clearer definition should be provided to ensure consumers are achieving the knowledge of bio-waste products. Thus, consumers could provide their answers pertaining to the questionnaire with full understanding. Finally, future studies are encouraged to explore the remaining unknown factors to obtain a better finding. For example, broader sources of subjective norms should be indicated in the questionnaires; and respondents' ethical status, as such factors could subsequently affect the results.

This study was conducted to examine the impact of consumers' perceptions towards bio-waste products. The findings of this study can be used by the Malaysian government to apply policies for the purpose of overcoming the existing environmental issues. Organisations should consider implementing closed-loop supply chains as part of their business strategy as this study has indicated that consumers tend to support products of bio-waste. Most importantly, this study aims to increase awareness for the importance of environmental protection among consumers.

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REFERENCES

Abbey, J. D., Meloy, M. G., Guide, V. D. R. and Atalay, S. (2014). Remanufactured products in closed-loop supply chains for consumer goods. *Production and Operations Management, 24*(3), 488–503.

Abdolazimi, O., Esfandarani, M. S., Salehi, M. and Shishebori, D. (2020). Robust design of a multi-objective closed-loop supply chain by integrating on-time delivery, cost, and environmental aspects, Case study of a tire factory, *Journal of Cleaner Production, 264*(1), 121566.

Adhikari, A. (2019). Consumer behavior in low involvement product purchase: A stochastic model, *Theoretical Economics Letters*, *9*(2), 424-430.

Ahmed, N., Li, C., Khan, A., Qalati, S. A., Naz, S., and Rana, F. (2021). Intention to purchase toward organic food among young consumers using theory of planned behavior: role of environmental concerns and environmental awareness. *Journal of Environmental Planning and Management, 64*(5), 796–822.

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In *Action Control*. Springer Berlin Heidelberg.

Al-Swidi, A., Huque, S. M. R., Hafeez, M. H., Shariff, M. N. M. (2014). The role of subjective norms in theory of planned behavior in the context of organic food consumption, *British Food Journal, 116*(10), 1561–1580.

Al Zubaidi, N. (2020). The relationship between collectivism and green product purchase intention: The role of attitude, subjective norms, and willingness to pay a premium, *Journal of Sustainable Marketing, 1*(1), 31–42.

Baharudin, M. (2022). *Department of Statistics Malaysia Official Portal: Environment Statistics 2022*. Department of Statistics Malaysia. https://www.dosm.gov.my/portal-main/release-content/b0812501-7b67-11ed-80ec-0cc47a9b694a.

Barbarossa, C., De Pelsmacker, P. (2016). Positive and negative antecedents of purchasing eco-friendly products: A comparison between green and non-green consumers, *Journal of Business Ethics, 134*(1), 229–247.

Barbarossa, C., De Pelsmacker, P. and Moons, I. (2017). Personal values, green self-identity and electric car adoption, *Ecological Economics, 140*(1), 190–200.

Bian, X. and Moutinho, L. (2011) 'The role of Brand Image, product involvement, and knowledge in explaining consumer purchase behaviour of counterfeits', *European Journal of Marketing, 45*(1/2), 191–216.

Carmignani, G. (2009). Supply Chain and Quality Management: The definition of a standard to implement a process management system in a supply chain, *Business Process Management Journal, 15*(3), 395–407.

Chang, C. W., Chang, S. H., Chiu, H. J. and Liu, Y. C. (2021). Understanding consumers' intention to switch to electric motorcycles: A transaction cost economics perspective. *Australasian Journal of Environmental Management, 28*(4), 1–17.

Chen, C.C., Chen, C.W., Tung, Y.C, (2018). Exploring the consumer behavior of intention to purchase green products in Belt and road countries: *An empirical analysis. Sustainability, 10*(3), 854.

Ellis, S. and Santagate, J. (2018). *What is supply chain management?* IBM. https://www.ibm.com/my-en/topics/supply-chain-management.

Fischer, R., Karl, J. A. and Fischer, M. V. (2019). Retracted: Norms across cultures: A cross-cultural meta-analysis of norms effects in the theory of planned behavior. *Journal of Cross-Cultural Psychology, 50*(10), 1112–1126.

Ferronato N, Torretta V. (2019). Waste mismanagement in developing countries: A review of global issues. *International Journal of Environment Responsibility Public Health, 16*(6), 1060.

Fishbein, M., Ajzen, I., and Belief, A. (1975). *Intention and Behavior: An introduction to theory and research*. MA: Addison-Wesley.

Hanc, A., Novak, P. Dvorak, M. Habart, J. and Svehla, P. (2011). Composition and parameters of household bio-waste in four seasons. *Waste Management, 31*(7), 1450–1460.

Ham, M., Jeger, M. and Frajman Ivković, A. (2015). The role of subjective norms in forming the intention to purchase green food. *Economic Research-Ekonomska Istraživanja, 2*8(1), 738–748.

Jaeger, S. R., Lee, P. Y. and Ares, G. (2018). Product involvement and consumer food-elicited emotional associations: Insights from Emoji Questionnaires. *Food Research International, 106*(1), 999–1011.

Jain, A., Sarsaiya, S., Kumar A., M., Singh, R., Rajput, R., Mishra, U., Chen, J., Shi, J. (2021). Bioenergy and bio-products from bio-waste and its associated modern circular economy: Current research trends, challenges, and future outlooks. *Fuel, 307*, 121859.

Khare, A. and Pandey, S. (2017). Role of green self-identity and peer influence in fostering trust towards organic food retailers. *International Journal of Retail and Distribution Management, 45*(9), 969–990.

Khoiriyah. S., Wahyudi, L., Toro, M.J.S and Dewei, A.M. (2017). *Consumer switching intention, what factors that affect it?* 87th The IRES International Conference. https://www.worldresearchlibrary.org/up_proc/pdf/1172-151540441614-17.pdf.

Ko, S.B. and Jin, B. (2013). Predictors of purchase intention toward Green Apparel Products: A cross-cultural investigation in the U.S. and China. *Journal of Fashion Marketing and Management, 2*(1), 70–87.

Lakens, D. (2022). Sample size justification. *Collabra, Psychology*, *8*(1), 33267.

Lee, W. I., Cheng, S. Y. and Shih, Y. T. (2017). Effects among product attributes, involvement, word-of-mouth, and purchase intention in online shopping. *Asia Pacific Management Review*, 22(4), 223–229.

Medeiros, J.F., Ribeiro, J.L. and Cortimiglia, M.N. (2016). Influence of perceived value on purchasing decisions of green products in Brazil. *Journal of Cleaner Production, 110*(2016), 158–169.

Mou, J. Zhu, W. and Benyoucef, M. (2020). Impact of product description and involvement on purchase intention in cross-border e-commerce. *Industrial Management and Data System*, *120*(3), 567–586.

Nguyen, T. N., Lobo, A., and Nguyen, B. K. (2017). Young consumers' green purchase behaviour in an emerging market. *Journal of Strategic Marketing, 26*(7), 583–600.
Niosi, A., 2018. *Introduction to Consumer Behaviour*. KPU Pressbook. https://kpu.pressbooks.pub/introconsumerbehaviour/chapter/involvement-levels/
Ong, J. W., Goh, G. G. G., Goh, C. Y. and Too, M. S. M. (2015). Green products pricing and Malaysian consumers' willingness to pay, *Kajian Malaysia, 33*(Sup 1), 173–190.
Osburg, V. S., Strack, M. and Toporowski, W. (2016). Consumer acceptance of wood- polymer composites: a conjoint analytical approach with a focus on innovative and environmentally concerned consumers. *Journal of Cleaner Production, 110*(2016), 180–190.
Papanagnou, C. I. (2022). Measuring and eliminating the bullwhip in closed-loop supply chains using control theory and Internet of Things. *Annals of Operations Research, 310*(1), 153–170.
Prati, G., Mazzoni, D. and Zani, B. (2015). Intentions, attitudes, perceived behavioral control, and subjective norms measures, *PsycTESTS Dataset*.
Perez-Castillo, D. and Vera-Martinez, J. (2021). Green behaviour and switching intention towards remanufactured products in sustainable consumers as potential earlier adopters. *Asia Pacific Journal of Marketing and Logistics*, *33*(8), 1776–1797.
Rahbar, E. and Wahid, N. A. (2010). The Malaysian consumer and the environment: purchase behaviour. *Global Business and Management Research: An International Journal, 2*(4), 323–336.
Ramya, N. and Ali, S.A.M. (2016). Factors affecting consumer buying behavior. *International Journal of Applied Research*, *2*(10), 76–80.
Ruangkanjanases, A., You, J. J., Chien, S. W., Ma, Y., Chen, S. C. and Chao, L. C. (2020). Elucidating the effect of antecedents on consumers' green purchase intention: An extension of the theory of planned behavior. *Frontiers in Psychology, 24*(11), 1433.
Sharma, A. and Foropon, C. (2019). Green product attributes and green purchase behavior. *Management Decision*, *57*(4), 1018–1042.
Sharma, N., Saha, R., Sreedharan, V., R. and Paul, J. (2020). Relating the role of green self-concepts and identity on green purchasing behaviour: An empirical analysis. *Business Strategy and the Environment*, *29*(8), 3203–3219.
Shukla, P. (2004). Effect of product usage, satisfaction and involvement on brand switching behaviour. *Asia Pacific Journal of Marketing and Logistics*, *16*(4), 82–104.
Spacey, J. (2017). *6 Types of Product Involvement*. Simplicable. https://simplicable.com/new/product-involvement
Udovičić, M., Baždarić, K., Bilić-Zulle, L., & Petrovečki, M. (2007). What we need to know when calculating the coefficient of correlation? *Biochemia Medica, 17*(1), 10-15.
Ursachi, G., Horodnic, I.A. and Zait, A. (2015). How reliable are measurement scales? external factors with indirect influence on reliability estimators. *Procedia Economics and Finance, 20*(2015), 679–686.
Vela, I.C., Vilches, T.B., Berndes, G., Johnsson, F., Thunman, H. (2022). Co-recycling of natural and synthetic carbon materials for a sustainable circular economy. *Journal of Cleaner Production, 365*(2022), 132674.
Veolia (2022) *Biowaste management*, *a major environmental challenge*. Veolia. https://www.veolia.com/en/solution/biowaste-management-green-energy-environmental-challenge.
Wang, S. T. (2014). Consumer characteristics and social influence factors on green purchasing intentions. *Marketing Intelligence and Planning*, *32*(7), 738–753.