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Alvin Patrick M. Valentin

*John Gokongwei School of Management, Ateneo de Manila University, avalentin@ateneo.edu*

Rachelle Anne P. Biacora

*John Gokongwei School of Management, Ateneo de Manila University, rachelle.biacora@obf.ateneo.edu*

Victoria Isabelle S. Naval

*John Gokongwei School of Management, Ateneo de Manila University, victoria.naval@obf.ateneo.edu*

Angela Gayle C. Qui

*John Gokongwei School of Management, Ateneo de Manila University, angela.qui@obf.ateneo.edu*

Katherine R. Regala

*John Gokongwei School of Management, Ateneo de Manila University, katherine.regala@obf.ateneo.edu*

*See next page for additional authors*

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# Generational Differences and Determinants of Purchase Behavior towards Sustainable Clothing in a Developing Economy

## Authors

Alvin Patrick M. Valentin, Rachelle Anne P. Biacora, Victoria Isabelle S. Naval, Angela Gayle C. Qui, Katherine R. Regala, and Shayla Iyesa B. Sy

# GENERATIONAL DIFFERENCES AND DETERMINANTS OF PURCHASE BEHAVIOR TOWARDS SUSTAINABLE CLOTHING IN A DEVELOPING ECONOMY

ALVIN PATRICK M. VALENTIN (*corresponding author*)

*John Gokongwei School of Management  
Ateneo de Manila University  
Quezon City, Philippines  
avalentin@ateneo.edu*

RACHELLE ANNE P. BIACORA

*John Gokongwei School of Management  
Ateneo de Manila University  
Quezon City, Philippines  
rachelle.biacora@obf.ateneo.edu*

VICTORIA ISABELLE S. NAVAL

*John Gokongwei School of Management  
Ateneo de Manila University  
Quezon City, Philippines  
victoria.naval@obf.ateneo.edu*

ANGELA GAYLE C. QUI

*John Gokongwei School of Management  
Ateneo de Manila University  
Quezon City, Philippines  
angela.qui@obf.ateneo.edu*

KATHERINE R. REGALA

*John Gokongwei School of Management  
Ateneo de Manila University  
Quezon City, Philippines  
katherine.regala@obf.ateneo.edu*

SHAYLA IYESA B. SY

*John Gokongwei School of Management*

*Ateneo de Manila University*

*Quezon City, Philippines*

*shayla.sy@obf.ateneo.edu*

## ABSTRACT

The fashion industry contributes significant plastic pollution and greenhouse gas emissions globally. One approach to minimize the industry's environmental impact is through a shift to sustainable clothing. This study determined the predictors of purchase behavior towards sustainable clothing in a developing economy, which is the Philippines. Furthermore, this paper compared Filipinos from Generations X and Z. Results of a multiple regression analysis from a sample of 212 participants in an online survey showed that generation and environmental knowledge predicted the purchase of sustainable clothing. Moreover, Gen Z scored higher in environmental knowledge and purchase of sustainable clothing. The findings provide insights on increasing the usage of sustainable clothing, which can significantly reduce the environmental impact of the fashion industry.

## KEYWORDS

sustainable clothing; generations; environmental knowledge; purchase behavior

## INTRODUCTION

An important relationship exists between clothing, the self, and society. The combination of clothing items people wear is a result of how they perceive themselves as clothes can empower their wearers (Johnson, Lennon, & Rudd, 2014). Clothes also play a role in social interactions because they provide information about the wearer and influence the impression that others form (Tajuddin, 2018). Clothing has become more than a basic need such that the consumption expenditure of clothing, together with footwear, amounted to approximately USD 4.6 billion in 2021, which is a 14.3% increase from 2020 (Statista, 2022).

Faced with high demand, companies in the fashion industry have increased their output, making them responsible for one-fifth of global plastic production (Dottle & Gu, 2022). One of the uses of plastic is in the production of polyester, which has become more commonly used than cotton. When polyester fabric is in the production stage and clothes made of polyester are washed, microplastics seep into sources of water and put the lives of aquatic organisms at risk (Šaravanja, Pušić, & Dekanić, 2022). Synthetic dyes can also end up in wastewater, which can contaminate drinking water sources and cause health problems (Cernansky, 2022). Additionally, the industry is reported to release 10% of greenhouse gas emissions, which is greater than the combined output of the air and water transportation industry (Navarro, 2021).

In response to criticisms of contributing to environmental degradation, fashion brands are working to incorporate sustainable changes in their value chain. In the 2017 Copenhagen Fashion Summit, 90 companies agreed to the 2020 Circular Fashion System Commitment that includes using recyclable materials in their products (Talanova, 2019). Nevertheless, the shift to a sustainable future also requires the commitment of consumers.

Consumers from the Generation (Gen) Z (10 to 25 years old; Dimock, 2022) is of particular interest because it is named the sustainability generation for their large preference for sustainable brands (Petro, 2021). However, the affordability of clothes also matters to them, which leads to purchasing from fast fashion brands (Balboa, 2022). Gen X (42 to 57 years old; Dimock, 2022), on the other hand, has high disposable income. Despite the results of some studies reporting that they have less concern for the environment, older generations consider themselves to be more concerned with the environment in their current age than when they were younger (Coughlin, 2018; Ham, Chung, Kim, Lee, & Oh, 2021; Lissitsa & Kol, 2016). Additionally, Gen X may be tagged as “passive environmentalists,” but 51% of world leaders are from this generation which makes them capable of enacting a great environmental change (Neal, 2018).

This study, then, focuses on the purchase behavior towards sustainable clothing of Gen X and Z. The results of this study may be helpful to the government, the private sector, and the society in promoting the usage of sustainable clothing that reduces plastic pollution and greenhouse gas emissions.

## **Purchase Behavior Towards Sustainable Products**

A study by Parment (2013) found that the unique experiences and preferences of each generation can lead to differences in their purchase behavior and the involvement level of the buyers in sustainable practices. Members of Gen Z have been shown to be the most critical amongst all generations in terms of a brand's sustainability, with multiple studies outlining their demand for brands to support a cause and adopt ethical practices (Francis & Hoefel, 2018).

Gen Z consumers also tend to be impacted by the presence of eco-labels and social labels when making a purchase (Brand, Rausch, & Brandel, 2022). On the other hand, members of Gen X have been shown to care less about sustainability when deciding to make a purchase, as they focus more on a product's quality and convenience (Brand et al., 2022; Kim & Karpova, 2010). However, Jezerc (2021) found that their willingness to spend on sustainable brands has increased since 2019, which may be related to the influence of Gen Z over their parents who are members of Gen X.

In understanding the purchase of sustainable products, demographic factors such as monthly household income must also be taken into account. Most consumers from Gen Z were found to be willing to pay at least 10% more for sustainable goods (Brand et al., 2022; First Insight, n.d.). Meanwhile, households with higher than average incomes tend to engage more in sustainable consumption practices than those with lower than average incomes (Lazaric, Le Guel, Belin, Oltra, Lavaud, & Douai, 2020). When it comes to online purchase behavior, Gen X places higher importance towards a product's price than Gen Z (Brand et al., 2022).

Regardless of generation, the environmental knowledge of consumers has also been shown to influence purchase behavior towards sustainable products. Environmental knowledge encompasses one's knowledge of the interconnectedness of actors in the biosphere, how environmental goals can be attained, the effects of different behaviors on the environment, and societal knowledge regarding the environment (Sousa, Correia, Leite, & Viseu, 2020). People with high environmental knowledge are more likely to empathize with nature and exhibit environmentally-responsible behavior (Fraj, Matute, & Melero, 2015; Kim & Thapa, 2018). Moreover, a consumer's environmental knowledge and behavior towards the environment have a direct relation to eco-friendly purchasing behavior (Lee and Kim, 2010; Sharma &

Keshewani, 2015). Reinforcing or improving consumers' environmental knowledge through clear marketing communication strategies can also influence consumers to make environmentally-friendly purchases (Taufique, Siwat, Chamhuri, & Sarah, 2016).

### **Sustainable Clothing**

One concrete way to address the environmental impact of the fashion industry is the consumption of sustainable clothing. Sustainable clothing pertains to clothing of which its consumption is pro-environmental from pre-purchase until they are discarded (Rausch & Kopplin, 2021). This includes clothing items that are made of environment-friendly materials manufactured under fair working conditions, repurposed or upcycled items, and second-hand or vintage items.

According to a study conducted by the SDA Bocconi School of Management (2021) on the future of retail stores in the new normal, 16% of Gen Z and Young Millennials expressed their interest in purchasing pre-owned items to involve themselves in the circular economy. Moreover, members of Gen Z are interested in availing clothing rental services, as 55% of the Gen Z respondents had experience with this due to its alignment with responsible consumer practices (Chi, Gerard, Yu, & Wang, 2021). Additionally, both generations are willing to purchase second-hand clothing, as members of Gen Z find them trendy and fashionable, while those from Gen X view them as low-priced and unique (Kapusy, 2021).

Studies also show that financial factors play a role in influencing sustainable clothing consumption. A positive relationship is found to exist between income and purchase behavior towards sustainable clothing (Zhou, Liu, Zeng, Zhang, & Chen, 2020). In the US, higher-income consumers are more likely to purchase slow fashion clothing (Chi, Gerard, Dephillips, Liu, & Sun, 2021). Likewise, those with higher incomes were more willing to pay extra money for organic clothing (Dangelico, Alvino, & Fraccascia, 2022). Meanwhile, higher price hindered the consumption of sustainable fashion (Bianchi & Gonzalez, 2021; Blas Riesgo, Lavanga, & Codina, 2022). In the Philippines, a culture of buying second-hand clothes is prominent, and one of the reasons is the bargain prices at which they are being sold (Biana, 2020).

In a systematic review of drivers of sustainable clothing consumption, environmental knowledge was one of the common themes across 25 years of research

on that topic (Dabas & Whang, 2022). Environmental knowledge predicted consumer purchase intentions toward sustainable cotton made apparel (Chi et al., 2019), and indirectly predicted the purchase behavior towards sustainable clothing through attitudes and purchase intentions (Leclercq-Machado et al., 2022). When coupled with past experiences using sustainable clothing, environmental knowledge can influence one's preference for second-hand clothing (Peña-Vinces, Solakis, & Guillen, 2020). In Korea, sustainability knowledge is increased through the marketing efforts of fashion companies that, in turn, increases the likelihood to consume sustainable clothing (Kong, Ko, Chae, & Mattila, 2016).

### **Research Problems**

A systematic review of studies on sustainable clothing from 1995 to 2022 (Dabas & Whang, 2022) showed that the majority of studies on sustainable clothing used samples from the United States of America and Europe, and the studies with a developing economy perspective are scant. Moreover, based on a scan of various scholarly databases such as Google Scholar and EBSCOhost, the researchers also observed that studies comparing generations in terms of behaviors related to sustainable clothing are likewise limited. As such, this paper aims to determine the predictors of purchase behavior towards sustainable clothing in a developing economy such as the Philippines. Furthermore, it aims to compare Generations X and Z in the Philippines where the population is skewed towards the younger age groups (Philippine Statistics Authority, 2022). This study is guided by the following hypotheses:

- H1. The generation predicts purchase of sustainable clothing.
- H2. Household income predicts purchase of sustainable clothing.
- H3. Environmental knowledge predicts purchase of sustainable clothing.
- H4. There is a significant difference between Generations X and Z in terms of environmental knowledge and purchase of sustainable clothing.



## METHODS

### Participants

This study collected a total of 212 participants: 112 or 52.8% from Gen X, aged 42 to 57 years; and 100 or 47.2% from Gen Z, aged 18 to 25 years. The participants were 20.8% male and 79.2% female.

In terms of their monthly household income, 2.4% earned less than \$185; 4.70% earned between \$185–370; 7.1% earned between \$370–745; 10.8% earned between \$370–1,305; 14.6% earned between \$1,305–2,235; 15.1% earned between \$2,235–3,730; and 45.3% earned more than \$3,730. All participants were residing in the National Capital Region of the Philippines.

### Materials

An online survey via Google Forms was used to collect data from the participants. The researchers chose this platform given that their institution has a subscription to Google Workspace, and it has been used by a similar study on sustainable consumption (Valentin & Hechanova, 2023). At the start of the survey, screening questions were asked to ensure that participants meet the criteria for participating in the study. Information to allow participants to provide their informed consent to participate in the study were also provided. Throughout the sections measuring the constructs, multiple-choice questions and items rated through Likert scales were included.

**Generation.** The following age groups were presented: Late Adolescence or Young Adult (18–25 years), Quadragenarian (42–49 years), and Quinquagenarian (50–57 years). Late Adolescence or Young Adult is categorized under Gen Z, while both Quadragenarian and Quinquagenarian are categorized under Gen X. The generations were coded as: 0 = Gen Z and 1 = Gen X.

**Household Income.** Participants were asked to choose the range that describes their monthly household income (Albert, Abrigo, Quimba, & Vizmanos, 2020). The ranges were coded as follows: 0 = Below Php10,957.00; 1 = Php10,957.00 to Php21,914.00; 2 = Php21,914.00 to Php43,828.00; 3 = Php43,828.00 to Php76,669.00; 4 = Php76,669.00 to Php131,484.00; 5 = Php131,483.00 to Php219,140.00; and 6 = More than Php219,140.00.

**Environmental Knowledge.** Environmental knowledge is gauged through the ratings of statements adapted from the study of Safari, Salehzadeh, Panahi, and Abolghasemian (2018). Participants were asked to respond to four items (e.g., I have a good knowledge about environmental issues) using a 5-point Likert scale (ranging from 1 = “Strongly Disagree” to 5 = “Strongly Agree”). The Cronbach’s alpha was .86.

**Purchase Behavior.** To measure purchasing behavior, the participants were asked to indicate how often they purchased four types of sustainable clothing using a 5-point Likert scale (ranging from 1 = “Never” to 5 = “Always”). The types of sustainable clothing were adapted from the studies of Burešová (2016) and Hasbullah, Sulaiman, and Mas’od (2019) and contextualized to the Philippine setting. The Cronbach’s alpha was .63.

## Procedure

**Pre-test.** To ensure the reliability and validity of the questionnaire crafted, a pre-test was first conducted. The pre-test provides an additional section that requests for feedback on the length and content of the survey. A total of 10 participants were gathered for the pre-test: five from Gen X and five from Gen Z. This was conducted through: (1) stratified sampling, initially targeting a proportionally distributed number of respondents from each generation; (2) convenience sampling, dependent on the potential respondent’s availability; and (3) quota sampling, also initially targeting five to 15 participants in total to be gathered. The researchers messaged family and friends on social networking sites to be participants for the pre-test. The pre-test was conducted on October 2022.

**Recruitment.** Similar to the pre-test sampling, participants were gathered through convenience sampling—collecting respondents based on their availability and time constraints. A call for respondents in the form of a poster and its accompanying caption including a brief description of the study and link to the survey was posted on social media and other social network applications. The researchers publicly posted such on their respective social media accounts on Instagram and Facebook and have enabled the share feature in order for it to be shared beyond their personal connections online. In addition, the posts have also been shared in Viber groups that are known to have Gen X and/or Z as members. To encourage the target market to participate in this research, a raffle of approximately \$2 for five winners was included. For those who wanted to engage in this raffle, their phone number was

requested at the start of the survey. Data gathering was conducted from October to November 2022.

**Data Analysis Procedure.** Data cleaning involved filtering out participants who did not fit the criteria for participating in the study. Starting with a total of 261 respondents, the number of respondents was reduced to 212. Reliability analysis using Cronbach's alpha was calculated through IBM SPSS Statistics version 23, with .60 as the minimum acceptable value (Hair, Black, Babin, & Anderson, 2014). Multiple regression analysis, validation of regression assumptions, and independent samples *t*-tests were likewise performed using the same software.

## RESULTS

### Predicting Sustainable Clothing Purchasing Behavior

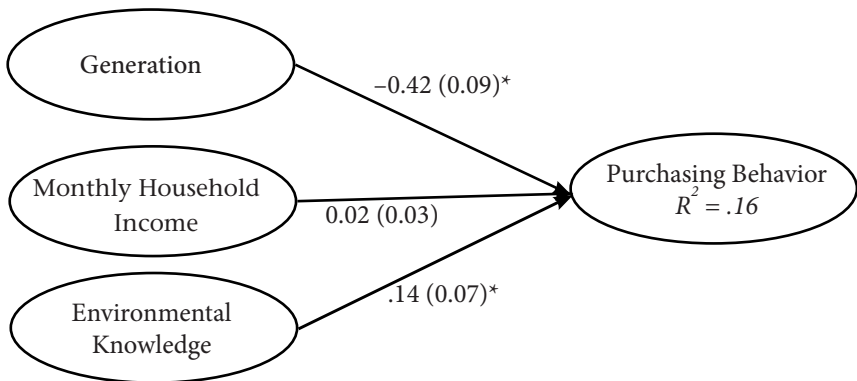


Figure 1: Results of Multiple Regression Analysis. Note: \* $p < .05$ .

Multiple regression was conducted to examine if generation, monthly household income, and environmental knowledge significantly predict sustainable clothing purchasing behavior. The regression model was statistically significant,  $F(3, 208) = 13.01$ ,  $p < .001$ ,  $R^2 = .16$ . Results showed that the generation significantly predicted purchasing behavior ( $B = -0.42$ ,  $SE = 0.09$ ,  $p < .001$ ). Being from Gen X was associated with a 0.42-point decrease in purchasing behavior, holding monthly household income and environmental knowledge constant.

Environmental knowledge also significantly predicted purchasing behavior ( $B = 0.14$ ,  $SE = 0.07$ ,  $p = .033$ ). A point increase in environmental knowledge was associated with a 0.14-point increase in purchasing behavior, holding generation and monthly household income constant. Monthly household income ( $B = 0.02$ ,  $SE = 0.03$ ,  $p = .497$ ) did not significantly predict purchasing behavior.

### Comparing Gen X and Gen Z

	Gen X	Gen Z	t	95% Confidence Interval of the Difference
	M (SD)	M (SD)		
Environmental Knowledge	3.88 (0.71)	4.30 (0.58)	4.71*	0.25, 0.60
Purchase Behavior	2.10 (0.56)	2.58 (0.65)	5.64*	0.31, 0.64

Table 1: Results of Independent Samples t-Tests. Note: \* $p < .05$ .

Results of t-tests for independent means showed statistically significant and moderate differences between the environmental knowledge,  $t(210) = 4.71$ ,  $p < .001$ ,  $r = 0.31$ , and purchasing behavior,  $t(210) = 5.64$ ,  $p < .001$ ,  $r = 0.36$ , of participants from Gen X and Gen Z. Those from Gen X had significantly lower environmental knowledge and purchasing behavior than those from Gen Z. The 95% confidence intervals of the differences are [0.25, 0.60] for environmental knowledge and [0.31, 0.64] for purchase behavior.

## DISCUSSION

The findings support H1 that says the generation predicts the purchase of sustainable clothing. This affirms the results of previous studies showing Gen Z's penchant for sustainable products (Francis & Hoefel, 2018; Petro, 2021). This provides additional empirical evidence to the growing body of literature showing that Gen Zs are, indeed, the sustainability generation (Petro, 2021).

On the other hand, the findings do not support H2 that says household income predicts the purchase of sustainable clothing. This contradicts the findings

of previous studies showing that those with higher income were more likely to purchase sustainable clothing (Chi et al., 2021; Zhou et al., 2020). This may be because of the *ukay-ukay* culture in the Philippines (Biana, 2020). In *ukay-ukays*, used or pre-loved clothes are sold at bargain prices, so those with lower incomes are able to afford them. At the same time, those with higher incomes also find the items trendy, fashionable, and unique (Kapusy, 2021). As such, sustainable clothing is being purchased by consumers from different income levels, and the expected differences in their purchase behavior were not observed. Unlike the purchase of sustainable products in general, this study shows that sustainability may not be the primary motivation for the purchase of sustainable clothing in the Philippines.

The results also support H3 that says environmental knowledge predicts the purchase of sustainable clothing. So, being more aware of environmental issues and the impact of individual behavior towards the environment influences the consumption behavior towards sustainable clothing in a developing economy. This is consistent with the findings of previous studies showing the influence of environmental knowledge on environmentally-responsible behavior (Fraj et al., 2015; Kim & Thapa, 2018) and the purchase of sustainable clothing (Chi et al., 2019; Leclercq-Machado et al., 2022; Peña-Vinces et al., 2020).

Likewise, the findings support H4 that says there is a significant difference between Gen X and Z in terms of environmental knowledge and purchase of sustainable clothing. Members of Gen Z scored higher than Gen X in both environmental knowledge and purchase of sustainable clothing, which validates the findings of previous studies on both generations (Brand et al., 2022; Petro, 2021). The higher environmental knowledge of Gen Z compared to Gen X may also explain why the purchase of sustainable clothing is correspondingly higher among the Gen Z, given that environmental knowledge was shown to predict purchase behavior.

## Implications

This study contributes to the literature on sustainable clothing in developing economies such as the Philippines. Specifically, it contributes theoretically to the factors that predict the purchase of sustainable clothing. As shown in Figure 1, the generation and environmental knowledge of people predict their purchase of sustainable clothing. These factors may be added to theories that explain pro-environmental behavior to extend such theories and improve our understanding

of sustainable clothing and sustainable consumption in general. Moreover, this study contributes to the literature on generational differences between Gen X and Gen Z. Specifically, it compares two different generations in terms of knowledge and behavior in relation to the environment, and affirmed the affinity of one generation towards sustainability. The study provides insights on increasing the usage of sustainable clothing, which reduces the plastic pollution and greenhouse gas emissions of the fashion industry.

The findings of the study also have practical implications for various stakeholders. For sellers of sustainable clothing, they can use the results of the study to improve the marketability of their products. Since Gen Zs were found to be more likely to purchase sustainable clothing, their products can be positioned and marketed specifically towards this generation to increase their revenues and overall profitability. Meanwhile, businesses that sell fast fashion and other unsustainable clothing may reconsider their product offerings given that members of Gen Z have started to enter the workforce, and will soon become the biggest generation in terms of population. Moreover, businesses can highlight other features of sustainable clothing in order to capture a bigger market outside of those with sustainability in mind. Second-hand clothing in the Philippines are patronized by consumers from all socioeconomic backgrounds because of their characteristics that appeal to different segments of the population, such as bargain prices and novelty (Kapusy, 2021). Government and non-government organizations can also capitalize on existing purchase and consumption behaviors in local communities, like the *ukay-ukay* culture in the Philippines, in order to minimize the environmental impact from the fashion industry.

Environmental knowledge was also shown to predict the purchase of sustainable clothing regardless of the generation. Like what has been done in Korea (Kong et al., 2016), businesses can include information drives in their marketing campaigns to improve the environmental knowledge of citizens that, in turn, will increase the citizens' likelihood to purchase sustainable clothing. Meanwhile, the government can conduct its own information campaigns to improve the environmental knowledge of its populace, or embed such in the public education curriculum. Such activities done on a national scale can also lead to improvements in other environmentally-responsible behaviors apart from the purchase of sustainable clothing (Fraj et al., 2015; Kim & Thapa, 2018).

## Limitations

The study has some limitations that are worth noting. Since the participants were chosen via convenience sampling, not all eligible people from the target population were given the opportunity to participate in the study. This is seen in the greater proportion of females in the sample, which is in contrast to the sex distribution in the Philippines as of 2020 (Philippine Statistics Authority, 2022). Moreover, only the members of Gen X and Z were sampled, and the other generations are not part of the scope of the study. Among those from Gen Z, only those that are at least 18 years of age were recruited. Finally, the dataset used only reflects data from the National Capital Region. Future studies could use probability sampling methods with a bigger scope to improve the generalizability of the findings.

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**Alvin Patrick M. Valentin** is an Assistant Professor at the John Gokongwei School of Management, Ateneo de Manila University, where he teaches statistics and research. He obtained his Master of Business Administration from the University of the Philippines, and a Ph.D. in Psychology from the Ateneo de Manila University. His research interests include sustainability, green consumption, and pro-environmental behavior.

**Rachelle Anne P. Biacora, Victoria Isabelle S. Naval, Angela Gayle C. Qui, Katherine R. Regala, and Shayla Iyesa B. Sy** are students at the John Gokongwei School of Management, Ateneo de Manila University. They are currently pursuing Bachelor of Science in Management Engineering.

