

Factors that Mediate the Effect of Eco-Label on Green Purchase Behavior Generation Z of Green Cement Products in Indonesia

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Abstract

First, this study aims to see Green Purchase Behavior of Gen-Z in Indonesia towards green cement. Second, the study measures the indirect effect of Eco-Label variable on the Green Purchase Behavior of Gen Z in Indonesia. Third, this study measures the direct effect of the Perceived Customer Effectiveness (PCE), Product Attribute (PA), and Environmental Concern (EC) variables on the Green Purchase Behavior of Gen-Z in Indonesia. Fourth, this study also measures the ability of the PCE, Product Attribute, and Environmental Concern variables to mediate the Eco-label variable on Green Purchase Behavior. This study used an online questionnaire to conduct an empirical study by collecting and analyzing 411 samples using structural equation modeling (SEM). The findings in this study show that Eco-label has an indirect influence on Green Purchase Behavior Gen-Z in Indonesia, Eco-label also has a positive and significant influence on Environmental Concern (EC), Product Attribute (PA), and Perceived Customer Effectiveness (PCE) variables. These three variables are also able to significantly mediate the Eco label variable on Gen-Z's Green Purchase Behavior (GPB) in Indonesia. The results of this study are expected to be able to serve as a guide for viewing dimensions of the existing factors that most influence green purchasing behavior in generation Z so as to increase sales of green products. The results of this study can also be used by policy makers in the field of marketing strategies for environmentally green products towards increasing the use of Eco-labels on their products and selecting suitable approaches to target Gen-Z in Indonesia through product attributes, environmental concerns, and Perceived Customer Effectiveness (PCE). What is new from this research is the observation of the Green Purchase Behavior of Gen Z in Indonesia, and also of green cement products as objects in this study.

Keywords

gen z; green purchase behavior; green cement



I. Introduction

Currently the cement industry in Indonesia has two challenges as well as opportunities, namely regulations related to greenhouse gas emissions (PP No. 22 of 2021 concerning Implementation of Environmental Protection and Management and PP No. P.19 of 2017 concerning emission quality standards for cement factory businesses and activities) and

oversupply conditions around 41.05 million tonnes (Syahrani, 2017). This condition gives birthform of innovation developing green cement types such as composite portland cement (PCC) and portland pozzolan cement (PPC) for resistance to sulfate environments by using Eco-labels as eco-green product certification.(Grunert et al., 2014). Semen Indonesia Group (SIG) as the market leader in Indonesian cement industry has carried out customer education regarding eco-green and eco-label cement products in a market where the majority is filled with millennials in various forms, where the value emphasized is concern for the environment through selection building materials & construction products that are environmentally green (green product), this is considered to have a positive impact on sales of green cement by Semen Indonesia Group (SIG), as illustrated in the sales portion which has increased in the last three years from 20% in 2019 to 42% in 2021 (source: PT. Semen Indonesia Sales Data 2019 - 2021, Processed.) However, the current market potential does not stop only with the millennial generation.

Green purchase Behavior (GPB) is a consumer decision making about the related environmental attributes or characteristics of a product in their buying process, especially referring to the purchasing behavior of people related to green products or organic products.(Wang et al., 2018). The emergence of Green Purchase Behavior is also influenced by the awareness to return to nature (back to nature).(Ali, 2012) Knowing the Green Purchase Behavior of Gen-Z in Indonesia, and Gen-Z's response to the use of Eco-labels towards their buying behavior are things that according to the author must be known first before determining what strategy will be determined in an effort to educate Gen-Z on environmentally green cement.

In previous research, Song et al., (2020) researching related to variables that affect the green purchase behavior of Gen Z in China. This study measured the ability of the Product Attribute and Perceived Customer Effectiveness variables in mediating the use of Eco-labels on Gen-Z environmental concerns which were then forwarded to Gen-Z Green Purchase Behavior (GPB). The result of this research is the use of Eco-label on an environmentally green product can increase the value of Perceived Customer Effectiveness and Product Attributes towards environmental awareness (Environmental Concern) which ultimately leads to Green Purchase Behavior Gen-Z in China. The author will do something similar in this study with Product Attributes (PA), Perceived Customer Effectiveness (PCE).

II. Review of Literature

2.1 Consumer Behavior Theory

The theory of consumer behavior is the study of how a person makes a decision to spend the resources they have, such as money, time, and their energy to get the product they will consume. Leon G Schiffman, (2015) Kotler and Keller(2016), also agreed that the theory of consumer behavior is a study that studies individuals, groups, and organizations in selecting, buying, using, and evaluating products to satisfy their needs and wants. Basically, consumer behavior is generally divided into two, namely rational and irrational consumer behavior. Factors that influence consumer behavior According to (Ali, 2012) greatly influenced by cultural, social, personal, and psychological factors of the buyer. Most of these are factors that marketers cannot control but must really be taken into account.

Green Purchase Behavior (Purchasing Behavior of Green Products)

According to Kotler and Keller (2016), the purchasing decision-making process is a process in which consumers pass through five stages, namely: 1. Introduction to the problem, 2. Search for information, 3. Evaluation of alternatives, 4. Purchase decisions, and 5. Post-

purchase behavior, which begins long before the actual purchase is made and had a lasting impact after that. In the alternative evaluation stage, consumers form preferences for brands in the choice set. Consumers are also likely to form a desire not to buy or buy a product they like the most. In carrying out the purchase intention, consumers can make five sub-decisions, namely brand, dealer, quality, time and method of payment. Green purchase Behavior (GPB) refers to purchasing environmentally green products or sustainable products that are 'recyclable' and 'useful'(Mostafa, 2007). Consumer behavior to purchase environmentally green products is generally evaluated in terms of the willingness or intention of consumers to buy environmentally green products and it is the conscious behavior or intention that ultimately turns into a purchasing decision for these products to support environmental sustainability.(Joshi & Rahman, 2015).

2.2 Theory of Planned Behavior (TPB)

The Theory of Planned Behavior or TPB (Theory of Planned Behavior) is a further development of the Theory of Reasoned Action. TPB is a conceptual framework that aims to explain the determinants of certain behaviors. According to Ajzen, (1991) the central factor of individual behavior is that behavior is influenced by individual intentions (behavior intention) towards that particular behavior. The intention to behave is influenced by three components, namely (1) attitude (2) subjective norm and (3) perceived behavior control. A person may have various kinds of beliefs about a behavior, but when faced with a certain event, only a few of these beliefs arise to influence behavior. It is this little belief that stands out in influencing individual behavior(Ajzen, 1991).

In TPB, attitudes, subjective norms, and perceptions of behavioral control are determined through key beliefs. The determinant of a behavior is the result of an assessment of the beliefs of the individual, both positively and negatively. Theory of Planned Behavior or TPB (Theory of Planned Behavior) is based on the assumption that humans are rational beings and use the information that is possible for them systematically (Achmat, 2010). People think about the implications of their actions before they decide to perform or not perform certain behaviors.

2.3 Theory of Generation (Cohort Theory)

Generation theory was first introduced by Mannheim in 1952. According to Mannheim (1952) Generation is a social construction in which there are groups of people who have similarities in age and historical experience. Furthermore Mannheim,(1952)explained that individuals who are part of one generation, are those who have the same year of birth within a span of 20 years and are in the same social and historical dimensions. This definition was specifically developed by Ryder, (1965)who says that the generation is the aggregate of a group of individuals who experience the same events in the same period of time. In recent years the definition of generation has developed, one of which is the definition according to Kupperschmid (2000)who said that a generation is a group of individuals who identify their group based on the similarity of year of birth, age, location, and events in the life of that group of individuals that have a significant influence on their growth phase.

a. Generation Z

Gen-Z is one of the naming of the generation cohort theory for the generation born from 1996 onwards.(Pew Research, 2019).In Malaysia, Gen-Z has the same characteristics as the world's Gen-Z population in that they have grown up with the internet and digital technology throughout their lives(Mohammed, 2018). As such, Gen-Z are also supported as generation I, net-gen, and digital natives as they grew up during the technology boom(Turner, 2015). This generation is also valued as a generation that is education oriented and has a lot

of knowledge about new technologies and devices(Pérez-Escoda et al., 2016). Gen-Z, in particular, have unique characteristics that set them apart from baby Boomers, Gen-X and Millennials especially in terms of their consumption habits.

The first studies on Generation Z began to appear when the researchers of this generation(Egnatoff, 1999), which defines Generation Z as the “Next Generation” and characterizes it as unique because no previous generation has been more comfortable, knowledgeable and educated with technology and innovation. A study conducted by Tapscott, on 6,000 members of Generation Z around the world, shows that this generation is all about speed, innovation, freedom and tolerance. Why Generation Z should be studied, it is justified in the data provided in the report by(Sparks & Honey, 2017)according to which Gen Z will represent 40 percent of the population by 2020 and will have \$44 billion in purchasing power. The influence that this generation will have in every aspect in the near future is key for every organization. Young consumers from Generation Z, born between 1995 and 2012(Kitchen & Proctor, 2015).

b. Generation Z & Environmental Issues

In a study states Members of Generation Z use products to express their individuality and unique sense of identity (Kearney, 2017). Generation Z (1995-2012), considers improving the environment as their top priority. They are always ready to adopt and research new green solutions that are cost effective and make sensible choices. They value products that are affordable, environmentally green and products that are not tested on animals. They are very concerned about social problems that occur in society.(Abdullah et al., 2016).Abdullah et al., (2016)in his research also describes the Z gene population has no tolerance for paper invoices and waste. They are digitally driven and willing to pay more for ecologically safe products. They are proving themselves to be Generation Z by the way they go after products. They worry about the economy more than anything including crime, politics, their parents and for the cost of goods. They lack brand loyalty and prefer home-cooked meals to ready-to-eat meals. They want to change the world to a safer place to live and do business, a different mindset than Millennials.

Gen-Z is the newest generation that is currently growing and will dominate the world in the next few decades(Terry L. Wiedmer, 2015). “We need to see Gen Z not just as a generation, but as a new set of behaviors and attitudes about how the world is going to work and how we need to respond in order to stay current, competitive and relevant”(Tom Koulopoulos & Dan Keldsen, 2016).Merriman, (2015)effectively demonstrating that the key factor that differentiates Gen-Z from the previous generation, Millennials, is that they are self-aware and selfish. They look forward to creating newer and better solutions rather than waiting for companies to come up with solutions. The Generation Z population is not very 'big brand' driven. They are careful shoppers. They are one of the most competitive generations and are passionate about finding solutions to create sustainable environmental sustainability. focus on the use of technology. According to Pramusinto (2020) the power of technology including digitalization and automation continues to grow and change the pattern of production, distribution, and consumption. As with other areas of life, technology is used to make changes, so also with the legal system as technology in making changes (Hartanto, 2020). Meanwhile, the use of information technology is the benefit expected by users of information systems in carrying out their duties where the measurement is based on the intensity of utilization, the frequency of use and the number of applications or software used (Marlizar, 2021).

2.4 Frameworks

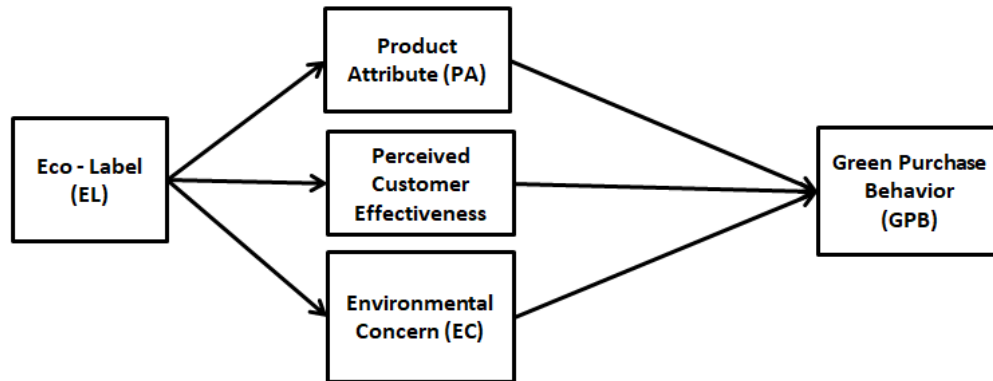


Figure 1. Research Thinking Framework Image

In the framework of thinking above the independent variables are Eco-Label, mediating variables are: Product attribute (PA), Perceived Customer Effectiveness (PCE), and Environmental Concern (EC), while the dependent variable is Green Purchase Behavior (GPB). given by the use of eco-labels to green purchase behavior variables which are mediated by environmental concern variables, product attributes and Perceived Customer Effectiveness. The author wants to see from the three existing mediating variables, which variable is able to significantly mediate eco-label on Green Purchase Behavior.

a. Relationship Between Eco – label (EL) Variables, Product Attribute (PA), and Green Purchase Behavior (GPB)

The existence of the Eco-label is a strategic marketing tool to show awareness of environmentally green products, as well as an effective tool used by companies to show their social responsibility(Bougherara & Combris, 2009).*Eco-labels* help consumers to gain a better understanding of the intangible product attributes, including the process and value of selecting these products(Cai et al., 2017).

Magnusson, (2003) explains the results of identification of purchase selection against different consumer preferences: A consumer who values environmental obligations to society will have a higher probability of choosing products labeled as eco-green, whereas consumers who value individual satisfaction tend to choose products that are functionally oriented. In addition, previous literature has also discussed the positive relationship between perceptions of product attributes (hereinafter referred to as product attributes) and awareness of the importance of environmental problems.(Pohjolainen et al., 2016).(Chang & Zhang, 2015)revealed that environmental awareness increases the order quantity of environmentally green products when compared to traditional products. Indeed, eco-green products include nutritional benefits, health values, social contributions, and environmental considerations(Ackermann, 1976). From this research, the following hypothesis is obtained:

H1 : Eco-label (EL) has a positive effect on Product Attribute (PA)

H2 : Product Attribute (PA) has a positive effect on Green Purchase Behavior (GPB)

H3 : Product Attribute (PA) mediates the effect of Eco-label on Green Purchase Behavior (GPB)

b. Relationship Between Eco – label Variables, Perceived Customer Effectiveness, and Green Purchase Behavior

In previous studies,Taufique et al., (2017)shows that consumers are sensitive to eco-labels and understand the meaning and importance of environmental protection, because eco-

labels, as one of the most important environmental knowledge resources, can provide information about the environment that is sufficient to assist consumers in internalizing their influence on environmental problems.(Bougherara & Combris, 2009). In other words, based on their understanding of the eco-label, consumers may realize that their actions, to a certain degree, can protect the environment. Therefore, we assume that products labeled eco-green can also have an impactful influence on PCE, helping consumers to adapt their environmental behavior.(Cho et al., 2013). Based on this research, the following hypothesis is obtained:

H4 : Eco-Label has a positive effect on PCE.

H5 : PCE has a positive effect on Green Purchase Behavior (GPB)

H6 : PCE is able to mediate the effect of Eco-label on Green Purchase Behavior (GPB)

c. Relationship Between Eco – Label (EL) Environmental Concern (EC) and Green Purchase Behavior (GPB) Variables

Based on Theory of Planned Behavior,(Albayrak et al., 2013)shows that Environmental Concern has an influence on purchasing behavior of environmentally green products (Green Purchase Behavior). Using the same theory, Research(Lestari et al., 2020)also showed the same results, where of the five factors studied, Environmental Concern had a significant influence on Green Purchase Behavior.So the hypothesis is obtained as follows:

H7 : Eco – label (EL) has a significant influence on Environmental concern (EC)

H8 : Environmental concern (EC) has a significant influence on Green Purchase Behavior (GPB).

H9 : Environmental concern mediates the effect of Eco-label (EL) on Green Purchase Behavior (GPB)

III. Research Method

The scope of this research is in the field of marketing management which focuses on the consumption behavior of generation Z, with the variables Eco label, Perceived Customer effectiveness (PCE), Product attribute (PA), Environmental Concern (EC), and Green Purchase Behavior (GPB) as the variables studied, towards the purchase of environmentally green cement products. The data analysis method in this study is quantitative descriptive analysis. By using Structural Equation Model (SEM) analysis, this research is an explanatory research.

The sampling technique in this study used purposive sampling, which is a sampling method in which the sample is determined by establishing certain criteria. Instrument This research is a questionnaire given to respondents via Google form who come from undergraduate and graduate students at Sriwijaya University, the Semen Indonesia Group (SIG) younger generation community, and customers of Indonesia Group bulk cement products who meet the requirements as respondents. Total population studied In this study, there were 997 Indonesian citizens (WNI) from Gen Z, and after going through a number of screening questions, there were 411 sample data that met the criteria and could be processed. Before collecting data, the researcher tested the research instrument first on 15 respondents to find out whether the questions used in the questionnaire were correct and could be understood easily. Respondents were selected randomly. This study uses validity and reliability tests to test research instruments.

IV. Discussion

4.1 Results

a. Overview of Respondents

From Of the 411 respondents who met the criteria, 52% were dominated by female gender and 48% male. From the distribution of the questionnaires conducted, it shows that the majority of Gen Z respondents in this study were women. The educational level of respondents 63.5% is SMA/equivalent, 24% is Bachelor/D4, and the rest are Masters, Diploma, and Middle School/equivalent. Monthly expenditure level, 50% of respondents have expenses in the range of 1-5 million rupiahs, 42% are below 1 million, 6% have expenses of 5-10 million per month, and the rest have expenses of more than 10 million rupiahs. This shows that the majority of Gen Z respondents, who have purchased green cement, have a monthly expenditure of 1-5 million.

b. Eco-Label Variable Frequency Distribution, Product Attribute, Perceived Customer Effectiveness, Environmental Concern, Green Purchase Behavior

The results of the field data obtained show that most Gen-Z answered "agree" with the statements about Eco-Label. includes indicators of Recognition of eco-labels, ease of identification, understanding of the meaning of eco-labels, indicators of trust in Eco-label messages, toon indicators of policy makers. Most Gen-Z answered "agree" to statements about Product Attributes. Includes indicators of product quality, product features, as well as product design and stylerepresents the Z-generation style. Most Gen-Z answered "agree" to statements about Perceived Customer Effectiveness. On the indicators contributing to environmental improvement, the indicators bring changes to the environment, the indicators have a positive effect on the environment, the indicators are a solution to environmental preservation. Most of the Gen-Z major answered "agree" to statements about *EnvironmentalConcern*. On indicatorsegoistic concern, indicators of altruistic concern, and indicators of biospheric concern. The results of the field data obtained show that most Gen-Z answered "agree" with the statements about Green Purchase Behavior. on indicatorsAttitude of consumers purchase, On the loyalty indicator, on the Incentive and Convenience indicator.

c. Confirmatory Factor Analysis (CFA) Exogenous and Endogenous Constructs

Model measurement (*measurement model*)to test the validity and reliability of the latent construct forming indicators was carried out by confirmatory factor analysis (CFA) on exogenous constructs (Eco-Label). with the following results:

- a. Based on the Exogenous CFA Test, there is no factor loading value <0.5 . So that all indicators/dimensions in the exogenous construct have shown to be valid. The results of reliability calculations with Composite Reliability from Confirmatory Factor Analysis / CFA of exogenous variables also show that all research variables in the full model are valid.
- b. In the Endogenous CFA Model (Product Attribute, Perceived Customer Effectiveness, Environmental Concern, and Green Purchase Behavior) there is no factor loading value <0.5 . So that all indicators/dimensions in the Endogenous Construct are valid.
- c. Hthe results of reliability calculations with Composite Reliability from Confirmatory Factor Analysis / CFA of exogenous and endogenous variables are also reliable

Table 1. Exogenous Loading Factor and Composite Reliability Values

Variable	Construct	Loading factor (>0.5)	Composite Reliability (>0.7)	Information
Eco-Label (EL) ξ	EL01	0.856	0.949	Valid & Reliable
	EL02	0.904		Valid & Reliable
	EL03	0.905		Valid & Reliable
	EL04	0.914		Valid & Reliable
	EL05	0.859		Valid & Reliable
Product Attributes (PA) η_1	PA01	0.973	0.973	Valid & Reliable
	PA02	0.938		Valid & Reliable
	PA03	0.972		Valid & Reliable
Perceived Customer Effectiveness (PCE) η_2	PCE01	0.885	0.931	Valid & Reliable
	PCE02	0.860		Valid & Reliable
	PCE03	0.865		Valid & Reliable
	PCE04	0.906		Valid & Reliable
Environmental Concern (EC) η_3	EC01	0.816	0.885	Valid & Reliable
	EC02	0.841		Valid & Reliable
	EC03	0.887		Valid & Reliable
Green Purchase Behavior (GPB) η_4	GPB01	0.936	0.941	Valid & Reliable
	GPB02	0.901		Valid & Reliable
	GPB03	0.916		Valid & Reliable

Source: Primary Data Processed, 2022

Based on Table 1. above, it shows that all indicators on Exogenous and Endogenous variables have shown to be valid. The results of reliability calculations with Composite Reliability of exogenous and endogenous variables also show that the variables Eco-Label (EL), Product Attribute (PA), Perceived Customer Effectiveness (PCE), Environmental Concern (EC), Green Purchase Behavior (GPB) in the full model have good reliability so that it can be analyzed further.

d. SEM-PLS Analysis

The research analysis uses Structural Equation Modeling (SEM) with the Variance or Component Based approach with the Partial Least Squares (PLS) technique. Further analysis in full model (without involving invalid indicators), is shown in Figure 2.

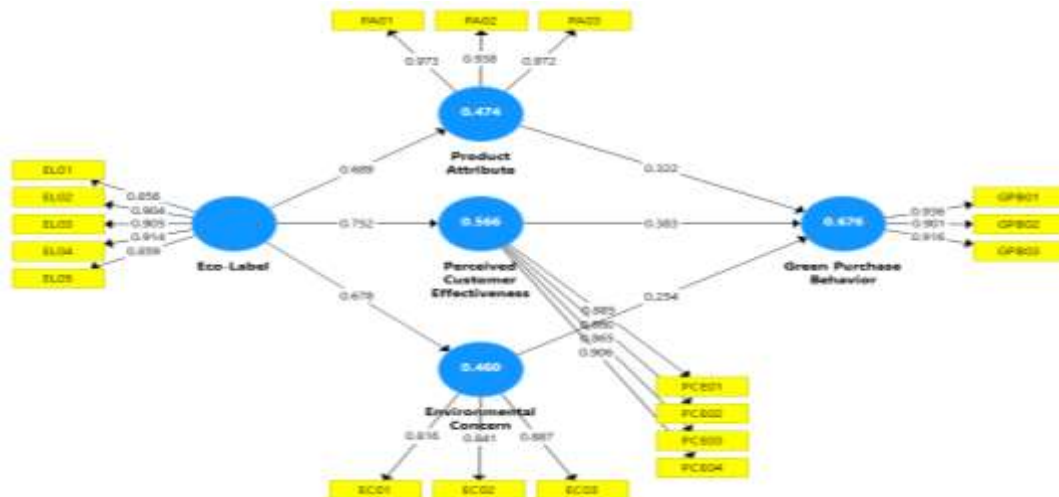


Figure 2. SEM-PLS Results Model

To validate the model as a whole, goodness of fit (GoF) was used with the calculation results showing a good goodness of fit (GoF) value of 0.795. Based on suggest the research objectives, then the hypothesis test design that can be made is a hypothesis test design in this study presented based on the research objectives. The level of confidence used is 95%, so that the level of precision or inaccuracy limit is $(\alpha) = 5\% = 0.05$. And produces a t-table value of 1.96, so:

Table 2. Coefficient and t-count Values at the 5% Level

Variable	Coefficient	t-count (>1.96)	P Values	Information
Eco-Label -> Environmental Concern	0.678	20,889	0.000	Significant
Eco-Label -> Perceived Customer Effectiveness	0.752	26.165	0.000	Significant
Eco-Label -> Product Attribute	0.689	22,940	0.000	Significant
Environmental Concern -> Green Purchase Behavior	0.254	6,570	0.000	Significant
Perceived Customer Effectiveness -> Green Purchase Behavior	0.383	8,750	0.000	Significant
Product Attribute -> Green Purchase Behavior	0.322	8017	0.000	Significant
Eco-Label -> Environmental Concern -> Green Purchase Behavior	0.172	5,926	0.000	Significant
Eco-Label -> Perceived Customer Effectiveness -> Green Purchase Behavior	0.288	7,401	0.000	Significant
Eco-Label -> Product Attribute -> Green Purchase Behavior	0.222	7,093	0.000	Significant

Source: Processed Research Data Results (2022)

Based on the table above, the following equation is obtained:

- Sub-Structural Equation:
 - PA = 0.689*EL**
 - PCE = 0.752*EL**
 - EC = 0.678*EL**

Based on the sub-structural model, it can be explained that the Product Attribute (PA) is directly influenced by the Eco-Label (EL) in a positive manner of 0.689 and is significant with a t-value of 22.940. Perceived Customer Effectiveness (PCE) is directly influenced by Eco-Label (EL) positively by 0.752 and significantly with a t-value of 26.165. And Environmental Concern (EC) is directly influenced by Eco-Label (EL) positively by 0.678 and is significant with a t-value of 20.889 for Gen Z, who have purchased green cement.

$$\text{Structural Equation: } \text{GPB} = 0.322 \cdot \text{PA} + 0.383 \cdot \text{PCE} + 0.254 \cdot \text{EC}$$

Based on the structural model, it can be explained that Green Purchase Behavior (GPB) is directly influenced by Product Attribute (PA), Perceived Customer Effectiveness (PCE) and Environmental Concern (EC). Product Attribute (PA) has a positive effect of 0.322 and is significant with a t-value of 8.017 on Green Purchase Behavior (GPB). Perceived Customer Effectiveness (PCE) has a positive effect of 0.383 and is significant with a t-value of 8.750 on Green Purchase Behavior (GPB). And Environmental Concern (EC) has a positive effect of 0.254 and is significant with a t-value of 6.570 on Green Purchase Behavior for Gen Z, who have purchased green cement.

e. Results of Testing Direct Influence and Indirect Influence

Table 3. Direct Influence

Variable	Direct Influence
Eco-Label -> Environmental Concern	0.678
Eco-Label -> Perceived Customer Effectiveness	0.752
Eco-Label -> Product Attribute	0.689
Environmental Concern -> Green Purchase Behavior	0.254
Perceived Customer Effectiveness -> Green Purchase Behavior	0.383
Product Attribute -> Green Purchase Behavior	0.322

Source: Processed Research Data Results, 2022

Based on Table 3. it shows that the coefficient value of the direct effect of Eco-Label (EL) on Product Attribute (PA) is 0.689. Eco-Label (EL) has a direct effect on Perceived Customer Effectiveness (PCE) of 0.752. Eco-Label (EL) has a direct effect on Environmental Concern (EC) of 0.678. Product Attributes direct effect on Green Purchase Behavior of 0.322. Perceived Customer Effectiveness has a direct effect on Green Purchase Behavior of 0.383. Environmental Concern has a direct effect on Green Purchase Behavior of 0.254.

Table 4. Indirect Influence

Variable	Indirect Influence
Eco-Label -> Environmental Concern -> Green Purchase Behavior	0.172
Eco-Label -> Perceived Customer Effectiveness -> Green Purchase Behavior	0.288
Eco-Label -> Product Attribute -> Green Purchase Behavior	0.222

Table 4 shows that the coefficient value of the indirect effect of Eco-Label (EL) on Green Purchase Behavior (GPB) of Environmentally Green Cement Products by Generation

Z in Indonesia with Product Attribute (PA) as a mediating variable is 0.222. the coefficient value of the indirect effect of Eco-Label (EL) on Green Purchase Behavior (GPB) of Environmentally Green Cement Products by Generation Z in Indonesia with Perceived Customer Effectiveness (PCE) as a mediating variable is 0.288. the coefficient value of the indirect effect of Eco-Label (EL) on Green Purchase Behavior (GPB) of Environmentally Green Cement Products by Generation Z in Indonesia with Environmental Concern (EC) as a mediating variable is 0.172.

4.2 Discussion

From the processed data it was found that: Eco-label (EL) has a positive influence on Product Attribute (PA) of 0.689 and is significant with a t-value of 22.940 (t-count > 1.96) and a p-value of 0.000 (Sig. < 0.05). **Hypothesis 1 is accepted.** Product Attribute (PA) has a positive influence on Green Purchase Behavior (GPB) of 0.322 and is significant with a t-value of 8.750 (t-count > 1.96) and a p-value of 0.000 (Sig. < 0.05). **Hypothesis 2 is accepted.** Product Attribute (PA) mediates the effect of Eco-label on Green Purchase Behavior (GPB) positively by 0.222 and is significant with a t-value of 7.093 (t-count > 1.96) and a p-value of 0.000 (Sig. < 0.05). **Hypothesis 3 is accepted.** Eco-label (EL) has a positive influence on Perceived Customer Effectiveness (PCE) of 0.752 and is significant with a t-value of 26.165 (t-count > 1.96) and p-value 0.000 (Sig. < 0.05). **Hypothesis 4 is accepted.** PCE has a positive influence on Green Purchase Behavior (GPB) of 0.383 and is significant with a t-value of 8.750 (t-count > 1.96) and a p-value of 0.000 (Sig. < 0.05). **Hypothesis 5 is accepted.** Perceived Customer Effectiveness (PCE) mediates the effect of Eco-label on Green Purchase Behavior (GPB) positively by 0.288 and is significant with a t-value of 7.401 (t-count > 1.96) and a p-value of 0.000 (Sig. < 0.05). **Hypothesis 6 is accepted.** Eco-Label (EL) has a positive effect on Environmental concern (EC) of 0.678 and is significant with a t-value of 20.889 (t-count > 1.96) and a p-value of 0.000 (Sig. < 0.05). **Hypothesis 7 is accepted.** Environmental concern (EC) has a positive influence on Green Purchase Behavior (GPB) of 0.254 and is significant with a t-value of 6.570 (t-count > 1.96) and a p-value of 0.000 (Sig. < 0.05). **Hypothesis 8 is accepted.** Environmental Concern (EC) mediates the effect of Eco-label on Green Purchase Behavior (GPB) positively by 0.172 and is significant with a t-value of 5.926 (t-count > 1.96) and a p-value of 0.000 (Sig. < 0.05). **Hypothesis 9 is accepted.**

Several studies have been carried out by Song et al., (2020) by title *Green Marketing to Gen Z Consumers in China: Examining the Mediating Factors of an Eco-Label-Informed Purchase*. This research was conducted on Gen-Z in China. Song et al., (2020) has also done previous research on the younger generation in China (not only Gen-Z) with titles *The Impact of Eco-Label on the Young Chinese Generation: The Mediation Role of Environmental Awareness and Product Attributes in Green Purchase*. The results of this study indicate that Product Attributes and Environmental Awareness consisting of Environmental Knowledge and Environmental Concern are able to mediate the effect of Ecolabel on green purchase behavior.

Yau, (2012) in Eco-label and Willingness to Pay: a Hong Kong Study also shows that consumers are willing to pay more for apartments labeled Eco-label than those who are not. The value of purchasing power is correlated with the level of eco-label owned by the apartment. This buying ability is supported by the income of the respondents and the environmental attitude held by the respondents.

V. Conclusion

From the results of the research described in the previous chapter, there are several conclusions as follows:

1. Gen-Z in Indonesia have a fairly high sensitivity to environmental issues and good knowledge of Eco-labels and their functions. They believe the actions they take (in terms of buying behavior for environmentally friendly cement) will represent who they are in society and can contribute to environmental improvement,
2. Eco-Label (EL) has a positive and significant indirect effect on Green Purchase Behavior (GPB).
3. Product Attribute (PA), Perceived Customer Effectiveness (PCE), and Environmental Concern (EC) have a significant and positive direct influence on the Green Purchase Behavior (GPB) variable.
4. Product Attributes (PA), Perceived Customer Effectiveness (PCE), and Environmental Concern (EC) are able to mediate Eco-labels on Green Purchase Behavior variables. (GPB)

References

- Abdullah, I., Omar, R., & Panatik, SA (2016). International Review of Management and Marketing a Literature Review on Personality, Creativity and Innovative Behavior. *International Review of Management and Marketing*, 6(1), 177–182. <http://www.econjournals.com>
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Albayrak, T., Aksoy, Ş., & Caber, M. (2013). The effect of environmental concern and skepticism on green purchase behavior. *Marketing Intelligence & Planning*, 31(1), 27–39. <https://doi.org/10.1108/02634501311292902>
- Ali, A. & AI (2012). *IJIBM_Vol12No3_Aug2020-24-42*. Pakistan Journal Engineering Technology Sciences, Volume 2, 84–117. https://www.researchgate.net/publication/341452672_Factors_Affecting_Consumers'_Green_Purchase_Behavior_towards_Energy_Saving_Lights_in_Bangladesh_the_Mediating_Role_of_Green_Purchase_Intention
- Bougherara, D., & Combris, P. (2009). Eco-labelled food products: what are consumers paying for? *European Review of Agricultural Economics*, 36(3), 321–341. <https://doi.org/10.1093/erae/jbp023>
- BPS. (2020). Population Census Data 2020.
- brown. (2020). Everything You've Wanted to Know About Gen Z But Afraid to Ask. .
- Chang, K., & Zhang, LE (2015). The Effects of Corporate Ownership Structure on Environmental Information Disclosure-Empirical Evidence from Unbalanced Penal Data in Heavy-pollution Industries in China.
- Cho, S., Crenshaw, KW, & McCall, L. (2013). Toward a Field of Intersectionality Studies: Theory, Applications, and Praxis. *Signs: Journal of Women in Culture and Society*, 38(4), 785–810. <https://doi.org/10.1086/669608>
- D'Souza, C. (2004). Ecolabel programmes: a stakeholder (consumer) perspective. *Corporate Communications: An International Journal*, 9(3), 179–188. <https://doi.org/10.1108/13563280410551105>
- Grunert, KG, Hieke, S., & Wills, J. (2014). Sustainability labels on food products: Consumer motivation, understanding and use. *Food Policy*, 44, 177–189. <https://doi.org/10.1016/J.FOODPOL.2013.12.001>

- Hartanto, D. (2020). Sociology Review of Social Phenomenon, Social Rules and Social Technology. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal)* Vol 3, (2): 1175-1184.
- Hermawan, A., Wijayanto, D., Aprilia, F., Sari, NI, & Safitry, N. (2022). Implementation of Trade Wars in the Competition of the Cement Industry in Indonesia as a Threat to the State Defense in the Millennial Era. In *Journal of Advanced Research in Defense and Security Studies* (Vol. 1, Issue 1).
- Issock Issock, PB, Roberts-Lombard, M., & Mpinganjira, M. (2020). Understanding household waste separation in South Africa. *Management of Environmental Quality: An International Journal*, 31(3), 530–547. <https://doi.org/10.1108/MEQ-08-2019-0181>
- Joshi, Y., & Rahman, Z. (2015). Factors Affecting Green Purchase Behavior and Future Research Directions. *International Strategic Management Review*, 3(1–2), 128–143. <https://doi.org/10.1016/J.ISM.2015.04.001>
- Kim, Y., & Choi, SM (2005). Association for Consumer Research Antecedents of Green Purchase Behavior: An Examination of Collectivism, Environmental Concern, and Pce Antecedents of Green Purchase Behavior: An Examination of Collectivism, Environmental Concern, and PCE. In *592 Advances in Consumer Research* (Vol. 32). <http://www.acrwebsite.org/volumes/9156/volumes/v32/NA-32http://www.copyright.com/>.
- Kitchen, PJ, & Proctor, T. (2015). Marketing communications in a post-modern world. *Journal of Business Strategy*, 36(5), 34–42. <https://doi.org/10.1108/JBS-06-2014-0070>
- Kotler, Philip, and Keller, Kevin Lane. (2016). *Marketing Management*, 15th Edition, Volume 1, Erlangga Publisher.
- Kupperschmidt, BR (2000). Multigeneration Employees: Strategies for Effective Management. *The Health Care Manager*, 19(1), 65–76. <https://doi.org/10.1097/00126450-200019010-00011>
- Leon G Schiffman, LK (2015). *Consumer Behavior: Vol. Global Edition* 11/E.
- Lestari, D. (2019). Measuring e-commerce adoption behavior among gen-Z in Jakarta, Indonesia. *Economic Analysis and Policy*, 64, 103–115. <https://doi.org/10.1016/j.eap.2019.08.004>
- Lestari, SD, Leon, FM, Widyastuti, S., Brabo, NA, & Putra, AHPK. (2020). Antecedents and Consequences of Innovation and Business Strategy on Performance and Competitive Advantage of SMEs. *The Journal of Asian Finance, Economics and Business*, 7(6), 365–378. <https://doi.org/10.13106/jafeb.2020.vol7.no6.365>
- Magnusson, D. (2003). *The Person Approach: Concepts, Measurement Models, and Research Strategy*.
- Mannheim, K. (1952). *The Problem of Generations I. How The Problem Stands at The Moment A. The Positivist Formulation of The Problem*.
- Marlizar, et.al. (2021). Effect of Service Quality and Use of E-Service Technology on Customer Loyalty: A Case Study of Maxim in Aceh. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal)* Vol 4, (4): 8002-8016.
- Merriman, J. (2015). Enhancing Counselor Supervision through Compassion Fatigue Education. *Journal of Counseling & Development*, 93(3), 370–378. <https://doi.org/10.1002/jcad.12035>
- Mostafa, MM (2007). Gender differences in Egyptian consumers? green purchase behavior: the effects of environmental knowledge, concern and attitude. *International Journal of Consumer Studies*, 31(3), 220–229. <https://doi.org/10.1111/j.1470-6431.2006.00523.x>
- Pérez-Escoda, A., Castro-Zubizarreta, A., & Fandos-Igado, M. (2016). Digital Skills in the Z Generation: Key Questions for a Curricular Introduction in Primary School. *Comunicar*, 24(49), 71–79. <https://doi.org/10.3916/C49-2016-07>

- PETER, JP, & Olson, JC (2000). consumer behavior and marketing strategy, 4th ed. (4th ed.).
- Pohjolainen, P., Tapio, P., Vinnari, M., Jokinen, P., & Räsänen, P. (2016). Consumer consciousness on meat and the environment — Exploring differences. *Appetite*, 101, 37–45. <https://doi.org/10.1016/j.appet.2016.02.012>
- PP No. 22 of 2021*. (n.d.).
- Prakash, G., & Pathak, P. (2017). Intention to buy eco-green packaged products among young consumers of India: A study on developing nation. *Journal of Cleaner Production*, 141, 385–393. <https://doi.org/10.1016/J.JCLEPRO.2016.09.116>
- Pramusinto, N.D., Daerobi, A., and Hartanto, D. (2020). Labor Absorption of the Manufacturing Industry Sector in Indonesia. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal) Vol 3 (1): 549-561*.
- Ryan Jenkins. (2017). Four Reasons Generation Z will be the Most Different Generation.
- Ryder, NB (1965). The Cohort as a Concept in the Study of Social Change. *American Sociological Review*, 30(6), 843. <https://doi.org/10.2307/2090964>
- Song, Y., Qin, Z., & Qin, Z. (2020). Green Marketing to Gen Z Consumers in China: Examining the Mediating Factors of an Eco-Label-Informed Purchase. *SAGE Open*, 10(4), 215824402096357. <https://doi.org/10.1177/2158244020963573>
- Sparks, & Honey. (2017). Gen Z 2025: The final generation.
- Straughan, RD, & Roberts, JA (1999). Environmental segmentation alternatives: a look at green consumer behavior in the new millennium. *Journal of Consumer Marketing*, 16(6), 558–575. <https://doi.org/10.1108/07363769910297506>
- Syahrani, D. (2017). Utilization of Shell Waste (Kepah) and Glass Waste as Alternative Materials for Partial Substitution of Cement for Mixing Concrete. *Journal of Civil Engineering*, 17(2). <https://doi.org/10.26418/jtsft.v17i2.23890>
- Taufique, KMR, Vocino, A., & Polonsky, MJ (2017). The influence of eco-label knowledge and trust on pro-environmental consumer behavior in an emerging market. *Journal of Strategic Marketing*, 25(7), 511–529. <https://doi.org/10.1080/0965254X.2016.1240219>
- Terry L. Wiedmer. (2015). Generations Do Differ: Best Practices in Leading Traditionalists, Boomers, and Generations X, Y, and Z. www.questia.com
- Tom Koulopoulos, & Dan Keldsen. (2016). *Gen Z Effect: The Six Forces Shaping the Future of Business* 1st Edition.
- Turner, A. (2015). Generation Z: Technology and Social Interests. *The Journal of Individual Psychology*, 71(2), 103–113. <https://doi.org/10.1353/jip.2015.0021>
- Wang, Z., Yan, F., Pei, H., Li, J., Cui, Z., & He, B. (2018). Antibacterial and environmentally green chitosan/polyvinyl alcohol blend membranes for air filtration. *Carbohydrate Polymers*, 198, 241–248. <https://doi.org/10.1016/J.CARBPOL.2018.06.090>
- William Strauss, & Neil Howe. (1992). *Generations: The History of America's Future, 1584 To 2069* (Vol. 538).
- Yanita, R. (2020). Pcc Cement as a Green Construction Material. *Journal of Science and Technology*, 19(1), 13–18.