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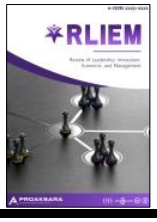

Application of the Theory of Planned Behavior Extension Model to Investigate the Purchase Intention of AC Inverter Products

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ABSTRACT

The main objective of this research is to investigate how the Theory of Planned Behavior (TPB) can be applied to forecast the likelihood of consumers buying AC Inverter products. It investigates the influence of environmental concern, environmental knowledge, attitude toward green product purchase, subjective norms, and perceived behavioral control in predicting the purchase intention of AC Inverter products in Indonesia. Using purposive sampling, data from 216 respondents collected through an online questionnaire were analyzed using Partial Least Squares - Structural Equation Modeling (PLS-SEM). The findings indicate that caring about the environment and being informed about environmental issues play a key role in shaping attitudes towards buying eco-friendly products, as well as opinions of others and confidence in making sustainable choices. The research also indicates that attitudes towards eco-friendly purchases and social influences impact the desire to buy AC Inverter products. Additionally, factors such as concern for the environment, knowledge about environmental issues, and perception of personal control do not greatly impact the decision to purchase AC Inverter products.

Keywords: Environmental Concern, Environmental Knowledge, Green Product Purchase Intention, TPB, AC Inverter

1. INTRODUCTION

The rate of environmental degradation occurring across the globe continues to rise drastically. Environmental degradation takes many forms, including ecosystem damage, air and water pollution, and deforestation (Saputra, 2025). The increasingly consumptive behavior of society is severely undermining the ability of natural resources to sustain and support human life both socially and economically. According to the World Wildlife Fund (WWF), in recent decades human activities have had a detrimental impact on natural resources such as forests, oceans, and coral reefs. The rise in society's product consumption is responsible for more than 60 percent of the greenhouse gas emissions worldwide (Ivanova et al., 2016). Grunert & Juhl (1995) stated that consumer product purchasing activities account for around 40 percent of environmental degradation. These problems play a significant role in exacerbating one of the key challenges faced by the world, which is climate change.

Global warming refers to the slow rise in the Earth's average atmospheric temperature, typically linked to the greenhouse effect from carbon dioxide, CFCs, and other harmful substances. The consequences of global warming may include higher sea levels, intense heatwaves, health issues, food shortages, severe weather patterns, and so on. Failure to address global warming could ultimately result in a deterioration in the well-being of individuals.

As per the findings of the Intergovernmental Panel on Climate Change (IPCC), the primary culprits for causing global warming are the production of electricity and heat, with agriculture, forestry, land use, and different industrial sectors also playing significant roles. Based on these facts, electricity is undeniably one of the largest contributors to global warming. The World Research Institute (WRI) stated that more than half of the world's greenhouse gas emissions come from ten countries, including Indonesia. According to data from

the International Energy Agency, with an electricity consumption of 25 terawatt-hours (TWh), Indonesia ranks as the 10th largest user of electricity for air conditioning in the world.

Research by the Indonesian Central Bureau of Statistics (BPS) found that households are the largest electricity consumers in Indonesia, with a total usage of 72,177 GWh, equivalent to 41.4 percent of total electricity consumption. Of that amount, 70 percent is used for air conditioning (AC) (Sarie, 2011). AC is the most favored cooling device because it can cool a room in seconds. However, AC units consume a significant amount of electricity and release freon gas when in operation. This gas is responsible for generating the cold air used to cool rooms. Electronics companies have addressed environmental issues caused by air conditioners by producing Inverter ACs to meet market demand while contributing positively to the environment.

Inverter ACs consume up to 50 percent less electricity than standard AC units (Neraca, 2012). They are also known as eco-friendly cooling devices compared to non-inverter or standard ACs (Almogbel et al., 2020). Moreover, several electronics manufacturers have developed Inverter ACs with additional features, including non-HCFCs that do not damage the ozone layer, lower global warming potential, and improved air purification technology. Therefore, Inverter ACs can help mitigate global warming while promoting a healthier lifestyle. Efficient electricity use in air conditioning is crucial for environmental preservation. Using energy-efficient ACs means contributing to environmental protection.

Today, many brands of Inverter ACs are available on the market. Some examples of brands using this environmentally friendly technology include LG, Samsung, Daikin, Sharp, Panasonic, and others. However, based on a mini-survey conducted by the researcher, only a small portion of AC consumers currently use Inverter ACs. To identify the factors influencing purchase intention for Inverter ACs, this study applies the Theory of Planned Behavior (TPB) model, with independent variables including attitude toward green product purchase, subjective norms, and perceived behavioral control, along with additional variables incorporated into the TPB framework.

TPB is one of the widely used models in social psychology for predicting behavior. It is also frequently employed in studies involving individual behavior (Ajzen, 1991). Ajzen (1991) also stated that TPB is not an exclusive model for predicting individual intentions or behaviors—it can be extended by adding predictors that significantly explain intention variance. The most prevalent theoretical model used to explain the factors influencing purchase intention is the Theory of Planned Behavior. As a result, this research study employs the TPB framework.

Prior studies have utilized the TPB framework to analyze consumers' willingness to buy eco-friendly items, but have overlooked the influence of environmental awareness and knowledge. These elements are essential in influencing the choices made when buying environmentally-friendly products (Paul et al., 2016; Yadav & Pathak, 2017). Gilg et al. (2005) stated that research on green consumption is still in its early stages and there is a requirement for more data on the impact of environmental awareness on green consumption.

Concern for the environment is a clear indicator of certain eco-friendly actions, which are frequently mirrored in consumers' opinions on these behaviors (Ajzen & Fishbein, 1977; Weigel & Weigel, 1978). Alternatively, knowledge about the environment offers broad ideas and insights into the interaction between products and the natural world, potentially fostering sustainable progress.

2. LITERATURE REVIEW

2.1. Consumer Behavior

Mothersbaugh & Hawkins (2016) state that the consumer behavior field focuses on how individuals, groups, and organizations make choices and engage in processes related to acquiring, using, and discarding products, services, experiences, or ideas. These processes influence both consumers and society as a whole. Referring to Schiffman et al. (2010), consumer behavior involves the actions taken by individuals in utilizing, assessing, and utilizing goods or services with the aim of meeting their particular requirements.

2.2. Purchase Intention of Eco-Friendly Products

Purchase intention is the inclination of a buyer toward their chosen brand (Armstrong & Kotler, 2003). It also represents a form of decision-making that explores the reasons behind a consumer’s decision to buy a

particular brand (Shah et al., 2012). Intention can also be defined as the willingness to use and continuously use a product, along with the associated factors (Venkatesh et al., 2012). There are four ways to measure purchase intention: planning, budgeting, consideration, and purchase inclination (Diallo, 2012).

2.3. Attitude

According to Ajzen (2005), attitude is an opinion or a tendency to respond in an evaluative, favorable, or unfavorable manner toward an object, institution, person, or event. What distinguishes attitude from other variables is its evaluative or affective nature (Fishbein & Ajzen, 1975). Ajzen (2005) further explained that an individual's beliefs about the outcomes of their actions shape their attitudes towards those actions, which is referred to as behavioral beliefs.

2.4. Theory of Planned Behavior (TPB)

Ajzen introduced the Theory of Planned Behavior (TPB) to address the shortcomings of the previous theory, the Theory of Reasoned Action, which focused only on explaining behaviors within one's control. In the TPB, Ajzen (1991) included a new element called perceived behavioral control. This element was meant to cover both situations where behavior is under one's control and situations where it is not, by including perceived behavioral control as a separate factor that influences behavioral intent. As described by Ajzen (1991), perceived behavioral control is how easy or challenging it is perceived to be to perform a certain behavior.

2.5. Subjective Norms

Subjective norms, according to Ajzen (1991), can be described as the pressure felt from society to either engage or not engage in a certain behavior. Additionally, subjective norms encompass the impact of important individuals whose viewpoints influence one's choices (Park, 2000). Persons are more likely to have an intention to either execute or avoid a behavior if they perceive that significant persons in their life approve or criticize of it (Conner & Armitage, 1998).

2.6. Perceived Behavioral Control

According to Azjen (2002), perceived behavioral control is an individual's assessment of how easy or difficult it is to do a specific activity. It represents the individual's opinion of whether they have the requisite means and opportunity to engage in the activity (Ajzen, 2005; Conner & Armitage, 1988). Ajzen (1991) emphasized that this control perception is a key factor in determining behavioral intention.

2.7. Environmental Concern

Referring to Crosby et al. (1981), having a deep care for the environment can be described as environmental concern. Environmental research is built upon this fundamental principle of valuing and safeguarding the natural world (Hines et al., 1987) and is an important factor in consumers' decision-making processes (Diamantopoulos et al., 2003). Consumers who prioritize the environment are more inclined to make eco-conscious purchasing decisions.

2.8. Environmental Knowledge

According to Lee (2011), environmental knowledge refers to a basic understanding of what individuals can do to help protect the environment. Chan & Lau (2000) define it as the knowledge individuals possess about environmental issues. As environmental issues become more prominent, environmental knowledge can influence environmental attitudes and purchasing behaviors (Scott & Vigar-Ellis, 2014).

2.9. Hypothesis Development

H1: Attitude toward green product purchase positively influences green purchase intention

H2: Subjective norm positively influences green purchase intention

H3: Perceived behavioral control positively influences green purchase intention

H4: Environmental concern is positively related to green purchase intention

H5: Environmental concern is positively related to attitude toward green product purchase

H6: Environmental concern is positively related to subjective norm

H7: Environmental concern is positively related to perceived behavioral control

H8: Environmental knowledge is positively related to green purchase intention

H9: Environmental knowledge is positively related to attitude toward green product purchase

H10: Environmental knowledge is positively related to subjective norm

H11: Environmental knowledge is positively related to perceived behavioral control

2.10. Research Model

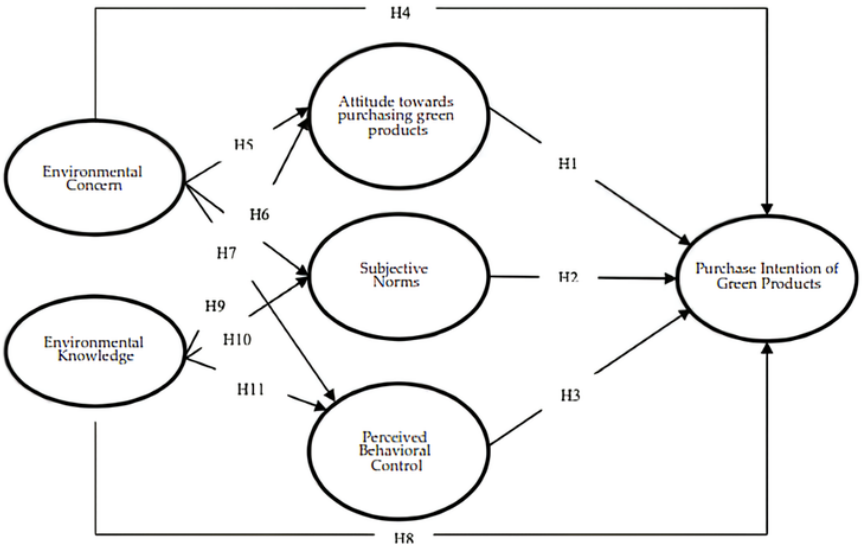

Figure 1. Research Model

3. RESEARCH METHODS

3.1. Research Design

This study uses a quantitative research design. According to Cooper & Schindler (2014), the quantitative method in social research is commonly used to measure behavior, knowledge, opinions, and attitudes of consumers. The aim of this approach is to predict, structure, and explain a theory. Quantitative data, which are numerical in nature, are generally collected through structured research questions to allow analysis using statistical methods (Sekaran & Bougie, 2016).

3.2. Data Collection Method

This research adopts a quantitative research design using primary data, which will be processed according to the research objectives. Primary data refers to information obtained directly to find solutions to the issues under investigation (Sekaran & Bougie, 2016). It is data collected from original sources through surveys, interviews, focus groups, observations, and questionnaires (Sekaran & Bougie, 2016).

3.3. Population

The population refers to the total group consisting of individuals, events, or other things that hold the necessary knowledge for the researcher to answer the study questions (Schindler, 2019). Cooper and Schindler (2014) also define population as the total set of elements that the researcher aims to draw conclusions about in a study.

3.4. Sample

Due to the large size of the population, it is not feasible for the researcher to study the entire population because of limited resources, time, and workforce. Therefore, this study selects a sample to represent the characteristics of the population. According to Cooper and Schindler (2014), a sample is a subset of the population selected carefully through specific procedures, which is expected to represent the population. The

basic idea of sampling is to select certain elements from the population so that the researcher can make inferences about the entire population (Cooper & Schindler, 2014).

3.5. Research Instrument Testing

This study uses a questionnaire that was pre-tested to ensure its suitability as a research tool. The instrument was tested before being distributed to respondents. According to Sekaran and Bougie (2016), testing research instruments is important to ensure that the questionnaire items are understandable by respondents, thus avoiding ambiguity and measurement errors. The item testing aims to confirm that each questionnaire item accurately measures each variable to enhance the research quality. According to Cooper and Schindler (2014), the characteristics of a good measurement tool are reflected in its validity and reliability, including its ease of use in practice. To evaluate the research instrument, this study uses an external model assessment, which measures the model's correctness and consistency. According to Abdillah et al. (2019), the algorithm process allows for the acquisition of various aspects of the measurement model, including convergent validity, discriminant validity, composite reliability, and Cronbach's alpha.

3.6. Validity Test

According to Cooper and Schindler (2014) the validity test is a test used to measure the extent of the accuracy of each measurement item in measuring a variable. According to Sekaran and Bougie (2016) the validity test is carried out in order to find out how well an instrument used can measure the concept of a study. A research tool is considered reliable when the questions/ statements in the survey accurately represent the data being studied. The structural model testing results conducted with the assistance of Smart-PLS software revealed 19 indicators with factor loading values above 0.7, ranging from 0.777 to 0.947 as shown in Table 1.

Table 1. Factor Loading

	ATT	SN	PBC	EC	EK	PI	Description
ATT1	0.856						Valid
ATT2	0.777						Valid
ATT3	0.875						Valid
SN1		0.868					Valid
SN2		0.825					Valid
SN3		0.815					Valid
PBC1			0.947				Valid
PBC2			0.813				Valid
PBC3			0.867				Valid
PBC4			0.945				Valid
ECI1				0.856			Valid
ECI2				0.874			Valid
ECI3				0.872			Valid
EK1					0.841		Valid
EK2					0.787		Valid
EK3					0.811		Valid
PI1						0.880	Valid
PI2						0.853	Valid
PI#						0.870	Valid

ATT = Attitude toward purchasing AC Inverter products, SN = Subjective norms regarding the purchase of AC Inverter, PBC = Perceived behavioral control over purchasing AC Inverter, EK = Environmental Knowledge, EC = Environmental Concern, PI = Purchase Intention for AC Inverter products

3.7. Reliability Test

According to Sekaran and Bougie (2016), reliability indicates how unbiased or error-free a measurement is over time across diverse objects in the instrument. The reliability test is used to determine the consistency and stability of the instruments used in the study. Consistency can indicate how well each item used can measure concepts in a study. Based on structural model testing conducted using Smart-PLS software assistance with a total of 19 indicators that have Cronbachs's Alpha and Composite Reliability values greater than 0.6 which can be seen in Table 2 as follows:

Table 2. Cronbach's Alpha and Composite Reliability Values

Variable	Cronbach's Alpha	Composite Reliability	Description
Environmental Concern (EC)	0.835	0.901	Reliable
Environmental Knowledge (EK)	0.742	0.851	Reliable
Attitude toward purchasing green products (ATT)	0.789	0.875	Reliable
Subjective Norms (SN)	0.786	0.878	Reliable
Perceived Behavioral Control (PBC)	0.916	0.941	Reliable
Purchase Intention of Green Products (PI)	0.837	0.901	Reliable

After conducting a reliability test, it was found that every variable had a Cronbach's Alpha value exceeding 0.6 and a Composite Reliability value exceeding 0.7. Thus, all 19 indicators utilized in the study passed the reliability test, indicating their suitability for accurately measuring variables.

4. RESULTS AND DISCUSSION

4.1. Summary of Main Findings

This study shows the research findings based on the data gathered. The researcher analyzed data based on the issue statement and hypotheses. A total of 235 samples were obtained, but only 216 samples were eligible for further analysis. This was because 19 samples did not meet the respondent criteria required in this study or were incomplete in answering the research questions. The researcher distributed the questionnaires via real-time chatting applications such as Instagram, WhatsApp, and Twitter, using the support of Google Forms. Data were collected from mid-September to mid-October 2021. The number of respondents in this survey satisfies the minimal criterion for statistical data processing with SmartPLS software.

4.2. Structural Model Analysis and Hypothesis Testing

Table 3. Structural Model and Hypotheses Testing

	Path Coefficient	T Statistic	P Values
ATT → PI	0,299	3.349	0,001
SN → PI	0,813	2,395	0,017
PBC → PI	0,152	1,468	0,143
EC → PI	0,151	1,658	0,098
EC → ATT	0,450	4,883	0,000
EC → SN	0,315	4,259	0,000
EC → PBC	0,309	3,911	0,000
EK → PI	0,127	1,475	0,141
EK → ATT	0,160	2,125	0,031
EK → SN	0,205	2,483	0,013
EK → PBC	0,356	4,822	0,000

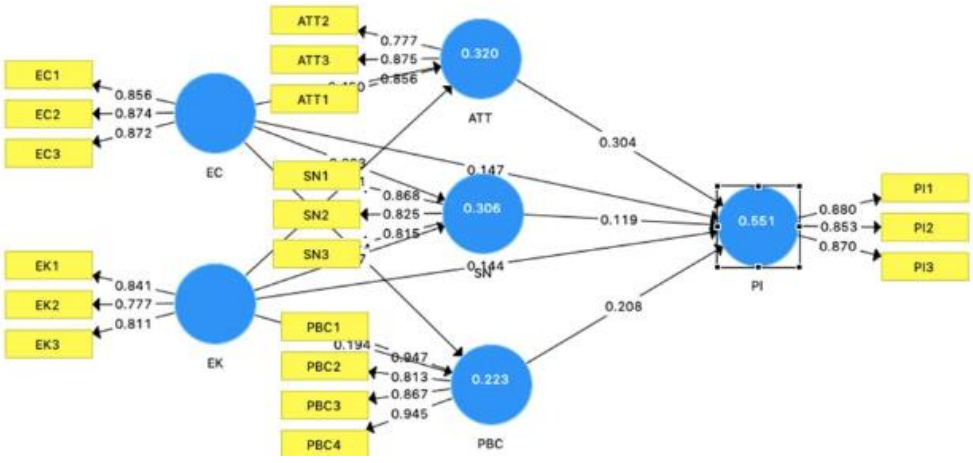

Figure 2. Structural Model and Hypotheses Testing

Next, hypothesis testing was conducted using the t-statistic benchmark, which is then compared to the t-value in the table with df = (N-12) and a significance level of 0.05 (2-tailed test), which is 1.96. A detailed analysis of the results of the structural model and hypothesis testing based on Table 3 and Figure 2 is as follows:

4.2.1. Hypothesis 1

H1: Attitude toward purchasing environmentally friendly products has a positive effect on purchase intention of Inverter AC products

The path coefficient value for the first hypothesis is 0.299 > 0.1, indicating a positive effect. An increase in attitude toward purchasing environmentally friendly products affects the increase in purchase intention for Inverter AC products. The t-statistic value of 3.349 > 1.96 shows a statistically significant impact with a p-value of 0.001 < 0.05, confirming the first hypothesis.

4.2.2. Hypothesis 2

H2: Subjective norms have a positive effect on purchase intention of Inverter AC products

The path coefficient for the second hypothesis is 0.183 > 0.1, indicating a positive effect. An increase in subjective norms affects the increase in purchase intention for Inverter AC products. The t-statistic value is 2.395 > 1.96, indicating a statistically significant impact (p-value = 0.017 < 0.05). Thus, the second hypothesis is supported.

4.2.3. Hypothesis 3

H3: Perceived behavioral control has a positive effect on purchase intention of Inverter AC products

The path coefficient of perceived behavioral control on purchase intention is 0.152, and the t-statistic value is 1.468, which is smaller than the t-table value of 1.96. This suggests that, while the impact is positive, it is statistically insignificant. The p-value is higher than 0.05, at 0.098. Therefore, the third hypothesis is not supported.

4.2.4. Hypothesis 4

H4: Environmental concern affects the intention to purchase green products

The path coefficient of environmental concern on the desire to acquire Inverter AC items is 0.151, with a t-statistic value of 1.658, which is less than 1.96, suggesting a positive but not significant impact. The p-value is 0.143, which is more than 0.05, therefore the fourth hypothesis is not supported.

4.2.5. Hypothesis 5

H5: Environmental concern positively affects attitude toward purchasing Inverter AC products

The path coefficient for the fifth hypothesis is 0.450 > 0.1, indicating a positive effect. An increase in environmental concern influences the increase in attitude toward purchasing Inverter AC products. The t-statistic value is 4.883 > 1.96, indicating a significant effect with a p-value of 0.000 < 0.05. Therefore, the fifth hypothesis is supported.

4.2.6. Hypothesis 6

H6: Environmental concern positively affects subjective norms

The path coefficient is 0.315 > 0.1, showing a positive effect. Increased environmental concern leads to an increase in subjective norms. The t-statistic is 4.259 > 1.96, indicating a significant effect with a p-value of 0.000 < 0.05. Therefore, the sixth hypothesis is supported.

4.2.7. Hypothesis 7

H7: Environmental concern positively affects perceived behavioral control

The path coefficient is 0.309 > 0.1, indicating a positive effect. An increase in environmental concern positively affects perceived behavioral control. The t-statistic value is 3.911 > 1.96, which shows the effect is significant with a p-value of 0.000 < 0.05. Thus, the seventh hypothesis is supported.

4.2.8. Hypothesis 8

H8: Environmental knowledge positively affects the intention to purchase green products

The path coefficient is 0.127 with a t-statistic of 1.475, which is lower than the t-table value of 1.96. This means the effect is positive but not significant. The p-value is 0.141 > 0.05. Therefore, the eighth hypothesis is not supported.

4.2.9. Hypothesis 9

H9: Environmental knowledge positively affects attitude toward purchasing Inverter AC products

The path coefficient is 0.160 > 0.1, indicating a positive effect. An increase in environmental knowledge affects the increase in attitude toward purchasing Inverter AC products. The t-statistic is 2.125 > 1.96, indicating a significant effect with a p-value of 0.031 < 0.05. Thus, the ninth hypothesis is supported.

4.2.10. Hypothesis 10

H10: Environmental knowledge positively affects subjective norms

The path coefficient is 0.205 > 0.1, indicating a positive effect. An increase in environmental knowledge affects an increase in subjective norms for Inverter AC purchases. The t-statistic is 2.483 > 1.96, showing a significant effect with a p-value of 0.013 < 0.05. Therefore, the tenth hypothesis is supported.

4.2.11. Hypothesis 11

H11: Environmental knowledge positively affects perceived behavioral control

The path coefficient is 0.356 > 0.1, indicating a positive effect. An increase in environmental knowledge leads to an increase in perceived behavioral control. The t-statistic value is 4.822 > 1.96, indicating a significant effect with a p-value of 0.000 < 0.05. Therefore, the eleventh hypothesis is supported.

4.3. Discussion

4.3.1. Hypothesis 1

Hypothesis one investigates the impact of attitude toward purchasing environmentally friendly items on purchase intention for inverter AC devices. The data show that attitude toward purchasing Inverter AC items has a favorable impact on intention to buy. This result aligns with previous research by Maichum et al. (2016), which found that the more positive the attitude toward environmentally friendly product purchases, the higher the consumer's intention to buy such products.

The majority of respondents in this study were female (58.3%). According to studies by Davidson & Freudenburg (1996); Liere & Dunlap (1980); Mohai & Bryant (1992), women tend to have more positive attitudes toward environmental issues. Furthermore, Haytko & Matulich (2008) found that female consumers also exhibit more environmentally responsible behavior than male consumers. Thus, it can be concluded that most respondents make consumption choices by considering the value or environmental benefits of the products.

This study confirms differences in perspectives explaining why women collectively demonstrate better environmental attitudes than men. Agrawal (2005) attributes these differences to biological, historical, and cultural factors. In line with Tafsir et al. (2016), strong purchase intentions for green products are influenced by a positive attitude toward green purchasing behavior, based on consumers' belief in the value of green product purchases.

4.3.2. Hypothesis 2

Hypothesis two investigates how personal opinions influence the chance of purchasing Inverter AC goods. According to the data, personal views have a beneficial impact on the choice to acquire Inverter AC goods. This outcome aligns with the research of Maichum et al. (2016), who highlighted the impact of personal opinions on the intention to purchase eco-friendly items.

According to data from hoftstade-insight.com (2021), Indonesia has a low score (14) on individualism, indicating it is a highly collectivist country. Collectivist societies value strong social frameworks where individuals are expected to adhere to societal values and group norms. According to Kau and Jung (2004),

individuals in collectivist cultures are more influenced by others' opinions. Thus, in the context of Inverter AC purchases, Indonesian consumers are likely to seek opinions and be influenced by groups they consider important.

4.3.3. Hypothesis 3

Hypothesis three investigates the impact of perceived behavioral control on purchase intentions for inverter AC goods. The data analysis shows that hypothesis three is not supported. This contradicts the findings of Maichum et al. (2016), who identified perceived behavioral control as the second-best predictor after attitude in determining the purchase of green products.

In this study, perceived behavioral control did not significantly affect the intention to purchase Inverter AC products. This may be due to the respondents' middle-income spending level, whereas Inverter AC products are relatively expensive. Table 3 shows that most respondents have a monthly expenditure of IDR 3,000,001–5,000,000, classified as middle class according to the World Bank. Mahenc (2008) states that green products tend to be more expensive due to lower pollution impacts and higher production costs.

Inverter ACs are significantly more expensive than non-inverter ACs, with a price difference of 59–69% (Growth For Knowledge, 2012). Therefore, the unsupported hypothesis may be due to the respondents' income levels. This aligns with the concept that perceived behavioral control focuses on the individual's ability to manage their desire to purchase, constrained by high product prices.

Perceived behavioral control combines beliefs and perceived strength to perform an action (Shin & Hancer, 2016). In this study, the respondents' middle-class spending and the high cost of Inverter ACs lowered their perceived ability and confidence to make such purchases. Joshi & Rahman (2015) also highlight price as a situational factor influencing green product purchase decisions. Limited economic resources are a barrier for consumers wanting to buy green products (Connell, 2010).

Specifically, the relatively high price is a major obstacle for Indonesian consumers in choosing green products (Nielsen, 2017). Middle-income consumers tend to purchase more affordable products (Gajjar, 2013), which lowers the intention to buy the more expensive Inverter ACs. This implies that purchasing power is a key factor in such decisions, explaining the lack of significant effect of perceived behavioral control in this study.

4.3.4. Hypothesis 4

Hypothesis four investigates the impact of environmental concerns on the purchasing intention of inverter AC devices. The study indicates that hypothesis four is not supported. This suggests that environmental concern is not a direct predictor of propensity to purchase Inverter AC goods. This differs from the findings of Maichum et al. (2016), who identified environmental concern as a predictor of green purchase intention.

According to previous studies, environmental concern is defined as an individual's understanding of environmental issues and their willingness to address them (Dunlap & Jones, 2002). Best (2010) found that this willingness does not guarantee a higher level of concern, as individual reactions are influenced by perceived urgency and importance.

This study found that the level of concern was not high enough to influence purchase decisions. It relates to the consumer's awareness and willingness to contribute to solving environmental problems. Previous research also found that urgency plays a role in influencing green product purchase decisions (Rahab, 2017). Therefore, according to this study, environmental concerns are not viewed as urgent enough to influence purchasing behavior, implying that environmental concern is not a direct predictor of green purchase intention.

4.3.5. Hypothesis 5

Hypothesis five investigates the impact of environmental concerns on attitudes toward purchasing Inverter AC products. The data indicate that environmental concern has a favorable impact on attitudes. This lends credence to the notion that more environmental concern results in more positive sentiments toward green goods purchasing. This is consistent with Maichum et al. (2016), who found a positive link between environmental concern and green attitudes.

However, although attitude influences purchase intention, environmental concern does not directly influence or mediate the link between attitude and intention. In this research, 58.3% of respondents were female, and 64.8% had completed undergraduate education. Suciarto et al. (2015) found that educated women are more aware of environmental issues and consider actions to mitigate them. This study confirms that environmental concern shapes positive attitudes toward green product purchases, in line with Hansla et al. (2008), who found that high concern correlates with a preference for environmentally friendly products over non-green ones.

4.3.6. Hypothesis 6

Hypothesis six investigates the impact of environmental concerns on subjective norms for Inverter AC purchasing. The study demonstrates a positive association between environmental concern and subjective norms, which is consistent with Paul et al. (2016) finding that environmental concern positively effects perceived social pressure.

This hypothesis is supported by the collectivist cultural characteristics of the respondents. Hofstede-insights.com (2021) identifies Indonesia as a low-individualism country, indicating strong collectivism. Table 3 shows a high environmental concern score (mean = 4.66). This supports earlier findings that subjective norms are more influential in collectivist societies (C. Lee & Wan, 2010).

Maichum et al. (2016) found that individuals with high environmental concern receive stronger social support, which significantly affects green purchasing decisions. In this study, respondents with high environmental concern showed awareness of the importance of using green products, influenced by social circles such as family, friends, and reference groups.

4.3.7. Hypothesis 7

Hypothesis seven tests the influence of environmental concern on perceived behavioral control in the purchase of Inverter AC products. This research suggests that being environmentally conscious can have a beneficial impact on how much control we believe we have over our behavior. These results align with a study conducted by Maichum in 2016, which also found a positive relationship between environmental concern and perceived behavioral control.

Referring to Dirgantara (2013), perceived behavioral control is an individual's view about the availability of opportunities and resources to engage in a specific behavior. Furthermore, higher levels of environmental concern correlate with a greater desire to buy ecologically friendly items. A high level of environmental awareness drives customers to inquire about the availability of such items.

Based on the respondent characteristics, 58.3 percent of respondents are female. Mohai and Stern (1992) in their study found that women have a higher level of concern about environmental issues compared to men. Consumers that are concerned about the environment are more likely to seek out eco-friendly items (Paul et al., 2016). It may be inferred that environmental concern influences the establishment of customers' perceived behavioral control when choosing environmentally friendly items.

4.3.8. Hypothesis 8

Hypothesis eight examines the effect of environmental knowledge on purchase intention for Inverter AC products. According to the data analysis, hypothesis eight is not supported, indicating that environmental knowledge is not a predictor of the desire to buy Inverter AC goods. These findings are similar with a recent study by Ahmad & Thyagaraj (2015), which concluded that environmental knowledge fails to stimulate the intention to purchase green products.

According to Table 3, most respondents in this study fall within the 25–31-year age range. Furthermore, Katadata.com (2020) defines this age group as prioritizing purchase decisions based on price, quality, and functionality. This confirms the rejection of hypothesis eight, where purchase intention is not formed based on the level of environmental knowledge. Moreover, purchase intention can be measured using four indicators: planning, budgeting, consideration, and purchasing tendency (Diallo, 2012). In addition, Environment-indonesia.com states that the market share for environmentally friendly products is very low (3 percent). This is due to the limited information about eco-friendly products provided by marketers.

Information about the advantages of green products may include energy savings, efficiency in reducing environmental damage, and economic benefits. In this study, environmental knowledge refers to consumers' understanding of environmental issues and problems. Although the respondents were thought to have a high degree of environmental awareness, the data indicate that it has little affect on their desire to buy ecologically friendly items. These findings are consistent with those of Maichum et al. (2016), who found that environmental awareness had little effect on green product purchase intention.

4.3.9. Hypothesis 9

Hypothesis nine examines the effect of environmental knowledge on attitudes toward purchasing Inverter AC products. Based on the data analysis, hypothesis nine is supported and shows a positive relationship between the two variables. This finding is consistent with the study by Maichum et al. (2016), which stated that knowledge has a positive impact on the formation of attitudes toward green products. In addition, Tanner & Wölfing Kast (2003) stated that an individual's knowledge of environmental issues contributes to the development of a positive attitude toward purchasing green products.

According to respondent characteristics, 68.98 percent of respondents are in the 25–31 age range. This age group can be categorized as Millennials (Katadata.com, 2021). Meanwhile, Unair News (2021) describes this group as digital natives due to their high exposure to the internet. This is triggered by the fact that Millennials grew up in the digital era and are influenced by various media (Moran, 2016). Furthermore, previous studies state that social media has increased the availability of information about environmental friendliness to consumers (Lyon & Montgomery, 2013). This exposure to information plays an important role in shaping attitudes toward pro-environmental behavior.

4.3.10. Hypothesis 10

Hypothesis ten examines the influence of environmental knowledge on subjective norms. This study finds a positive effect of environmental knowledge on subjective norms. This conclusion is consistent with prior study by Maichum et al. (2016), which found that environmental awareness improves subjective standards for green items. Based on data research, environmental information influences subjective standards. Furthermore, subjective norms then influence consumer purchasing decisions toward green products.

The majority of respondents in this study are within the 25–31 age group or Millennials. Meanwhile, subjective norms affect an individual's decision to perform or not perform a behavior under consideration (Jogiyanto, 2007). Furthermore, Majoo.id (2020) states that Millennials tend to trust and value the opinions of reference groups in purchasing decisions. This confirms that the higher the level of environmental knowledge an individual possesses, the greater the social pressure they experience. This finding is supported by Maichum et al. (2016), who stated that high environmental knowledge leads individuals to present themselves as more environmentally aware, which in turn increases the social pressure to make environmentally responsible purchasing decisions.

4.3.11. Hypothesis 11

Hypothesis eleven studies the impact of contextual information on perceived behavioral control. This study found that environmental awareness had a favorable impact on perceived behavioral control. The findings are comparable with those of Maichum et al. (2016), who discovered that environmental awareness improves perceived behavioral control over green product purchases.

Environmental knowledge refers to an individual's understanding of environmental facts and their impacts (Wang & Hazen, 2016). This includes understanding green products and their ability to combat environmental damage. The respondents in this study fall within the 25–31 age range, with the majority having attained a bachelor's degree. Referring to Chan (2001), this age and education group tends to have better environmental knowledge.

According to Bradley et al. (1999), knowledge can increase individuals' confidence in their ability to control a situation, thereby increasing perceived behavioral control. Based on the respondent data, it can be said that they have an understanding of eco-labels on products, the processes involved, and the environmental impacts of green products. This understanding indicates that the better a person's environmental knowledge, the greater the perceived control they feel in purchasing decisions.

5. CONCLUSIONS

After reviewing the results and previous discourse, various inferences can be made. The perspective towards buying Inverter AC units has a notable and favorable impact on the intent to make a purchase. The reason for this is because most participants in the research are females, who typically display a heightened sense of duty and a positive stance on environmental matters, as seen in earlier studies. Additionally, personal beliefs have a notable impact on the inclination to buy Inverter AC units. This is due to the high level of collectivism among respondents, where individuals tend to seek opinions from significant others before making purchasing decisions, including for Inverter AC products.

On the other hand, perceived behavioral control does not have a significant effect on purchase intention. This can be explained by the respondents' average spending level, which falls within the middle-income class, limiting their purchasing power and affecting their confidence and perceived ability to buy the product. Environmental worries don't have a direct impact on people's decision to buy Inverter AC products. People are more inclined to make purchases when they have a favorable attitude towards the product, rather than just being motivated by environmental concerns.

However, environmental concern has a positive influence on attitudes toward purchasing Inverter AC products. This is due to the high educational background (bachelor's degree or above) of most respondents, which contributes to their heightened awareness and concern for environmental issues, subsequently fostering a favorable outlook on eco-friendly items. Environmental concern also influences subjective norms. In the Indonesian context, where collectivism and environmental concern are both high, individuals are more likely to be influenced by their social environment to choose sustainable products such as Inverter ACs. Furthermore, environmental concern also affects perceived behavioral control. Female respondents, who make up the majority in this study, show high concern for environmental issues and are more likely to allocate resources to purchase eco-friendly products.

Environmental knowledge does not significantly affect purchase intention for Inverter AC products, primarily due to the limited availability of accessible information about such environmentally friendly products. Even if individuals possess high environmental knowledge, a lack of specific product information can hinder their purchasing intention. Conversely, environmental knowledge positively affects attitudes toward purchasing Inverter AC products. This is particularly influenced by the respondents' generational background—Millennials—who are heavily exposed to information through social media. This exposure enhances their knowledge and fosters positive attitudes toward eco-friendly purchases. Environmental knowledge also affects subjective norms, as Millennials tend to value reviews and opinions from reference groups, family, and friends when making consumption decisions. Lastly, environmental knowledge influences perceived behavioral control, supported by the respondents' high education level, which enables a better understanding of environmental issues and a stronger sense of capability in making sustainable purchasing decisions.

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