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FACTORS INFLUENCING THE INTENTION TO PURCHASE ENVIRONMENTALLY FRIENDLY PRODUCTS MADE FROM COFFEE GROUNDS AMONG YOUNG PEOPLE IN VIETNAM

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ABSTRACT

To study the factors influencing the intention to purchase environmentally friendly products made from coffee grounds among young people in Vietnam, the research team utilized a combination of qualitative and quantitative methods. This study is based on data analysis from a survey of 378 young individuals in Vietnam, of which 302 expressed an intention to purchase environmentally friendly products made from coffee grounds. The survey data were analyzed to identify influencing factors. The research team used SMARTPLS software to process the collected data. The results, with a 95% confidence level, show that the variable "Environmental Concern" (CE) influences the variable "Attitude toward Environmentally Friendly Products Made from Coffee Grounds" (AT) with an effect size of 0.727. The variables "Attitude toward Environmentally Friendly Products Made from Coffee Grounds" (AT), "Subjective Norm" (SS), "Perceived Behavioral Control" (PBC), and "Environmental Concern" (CE) affect the variable "Intention to Purchase Environmentally Friendly Products Made from Coffee Grounds among young people in Vietnam" with effect sizes of 0.177, 0.363, 0.159, and 0.231, respectively. With the findings, the research team provides discussions aimed at raising young people's awareness and consciousness of consuming environmentally friendly products in general and products made from coffee grounds specifically.

KEYWORDS: - Influencing factors, purchase intention, coffee grounds products, environmentally friendly, youngsters, Vietnam.

1. RAISING THE PROBLEM

The state of pollutions is becoming increasingly more severe, and adjusting our consumption habits by opting for eco-friendly products can make a significant impact. Products made from coffee grounds are not only innovative and creative but also representhuman's care and responsibility towards our globe. From items such as cups, ballpoint pens, and eating utensils, coffee grounds' ability to transform a common waste material into sustainable products is evident. By using these products and promoting their benefits, we contribute to environmental conservation and help ensure a cleaner, healthier future for generations to come.

In this study, the research team employs desk research methodology to examine theoretical issues related to consumer behavior, consumer purchase intentions, characteristics of eco-friendly products, eco-friendly products made from coffee grounds, and the traits of young people (Generation Z). Additionally, the team reviews the Theory of Reasoned Action (TRA), the Theory of Planned Behavior (TPB), and relevant studies' literature to construct a research model and identify factors influencing the purchase intentions of Vietnamese youth regarding eco-friendly products made from coffee grounds. The team uses SMARTPLS software to analyze the survey data collected and determine the impact of each factor on the purchase intentions of Vietnamese youth towards these eco-friendly products. Furthermore, based on the research findings, the team will offer recommendations and discussions aimed at increasing young people's awareness and consciousness of consuming eco-friendly products in general and those made from coffee grounds in particular.

2. THEORETICAL BASIS AND RESEARCH OVERVIEW

2.1. Definitions

2.1.1 Consumer behavior

Consumer behavior encompasses the actions and decisions individuals or households make when selecting, purchasing, using, and disposing of products or services (Bhat, 2021). This field integrates insights from multiple scientific fields, including psychology, biology, chemistry, and economics. Psychological principles are used to understand how personal motives, perceptions, and attitudes influence purchasing decisions. Additionally, biological factors such as physiological needs and sensory experiences also play a role in impacting consumer behavior. Economic theories help to explicate how consumers allocate limited resources among competing needs, andguide businesses in pricing strategies and product positioning (Radu, 2023).

Consumer behavior encompasses both psychological and physical activities undertaken by consumers when searching, evaluating, purchasing, as well as using products and services. In the marketplace, consumers exchange their scarce resources (including money, time, and effort) for valuable items. Research into consumer behavior helps companies identify customer needs, preferences, and motives behind purchasing decisions, allowing them to develop effective marketing strategies that enhance customer satisfaction and ensure long-term revenue stability (online manipal editorial team, 2022).

For businesses, understanding consumer behavior is essential for building successful marketing strategies and offering products and services that align with customer needs and wants. By

analyzing consumer behavior data, marketers can anticipate trends, forecast demand, and make wise decisions regarding product development, pricing, promotion, and distribution (Radu, 2023).
Consumer behavior generally depends on the type of product being purchased. Therefore, for higher-priced items, customers often conduct more thorough research due to the greater perceived risk. In contrast, when buying lower-cost items, consumer behavior tends to be less deliberate (Henderson, 2023).

2.1.2. Consumers' purchase intention

The journey a consumer takes from discovering a brand online to purchasing a product or service is both intricate and complicated. At every stage of this process, identifying and understanding the target consumer group is essential (Montserrat, 2020).

Purchase intention reflects a customer's readiness to buy a specific product or use a particular service. It is influenced by a variety of external and internal factors and serves as a measure of the consumer's attitude toward making a purchase (MBA Skool Team, 2021).By unleashing the power of purchase intention, companies can gain a better understanding of customer desires and shopping habits. With this information, businesses can design targeted advertising campaigns and marketing messages to boost sales and strengthen customer loyalty (Bhasin, 2023).

Purchase intentions can be tracked through various indicators, including demographic information, purchase history, and the contents consumed by the buyer (Indeed, 2022). The true value of purchase intention data lies in its ability to disclose the underlying motivations behind consumer actions. For example, extensive research into a product or service typically signals strong purchase intent. This data is more than just a series of random online activities; it represents a refined set of behaviors that marketers and sales teams can analyze to anticipate purchasing decisions and understand customer needs more deeply (Allen, 2024).

2.1.3.Eco-friendly products

According to Merriam-Webster, "eco-friendly" is defined as "not environmentally harmful".In terms of products, this means that every stage-from production to packaging-must be environmentally safe (Abdelrahman, 2020). Eco-friendly products are designed with the goal of minimizing environmental impact. They are intended to do no harm to the air, land, water, and wildlife, and encompass items we frequently use or practices we adopt to enhance environmental quality. Such products are often described as biodegradable, recyclable, natural, organic, non-toxic, green, or sustainable (Bolt, 2023).

Typically, products earn an eco-friendly designation based on several factors, including the materials used, the manufacturing processes, packaging, distribution, and end-use. The Federal Trade Commission (FTC) provides detailed guidelines through its Green Guides, which help companies comply with eco-friendly standards and inform consumers about the criteria for such claims (Webb, 2021). According to the FTC Green Guides, for a product to be accurately labeled as "eco-friendly", its packaging must clearly explain its environmental benefits. Without this clarity, a product's actual environmental impact could potentially be negative. The guides also detail various

certifications and seals that products can obtain to support their eco-friendly claims (Abdelrahman, 2020).

2.1.4. Generation Z

This study will focus on Generation Z, the group of individuals born between 1990 and 2010. In the coming 30 years, Generation Z is expected to profoundly influence global trends and values (Marinier, 2023).

Generation Z's dedication to sustainability is reflected in their heightened awareness of climate change and their conscientious consumption choices. They are particularly captivated by the sustainable clothing and products, making eco-friendliness a fundamental part of their lifestyle (Shadia, 2023). Emerging as a highly sustainability-oriented generation, many members of Generation Z prefer brands that are environmentally friendly and are willing to pay 10% more for sustainable products. According to a 2020 study, 66% of Generation Z is willing to pay a premium for sustainable or eco-friendly products, and 73% are ready to spend more on ethically sourced goods (Shaw, 2023).

A survey by Amnesty International (2019), involving 10,000 young people, identified climate change as the most critical issue facing the world today (Ulster University, 2022). As the first generation to grow up with climate change as a defining issue, Generation Z is deeply committed to environmental concerns and aligns their spending with their values. Indeed, three out of four Generation Z consumers place greater importance on sustainability than on brand reputation when making purchasing decisions (Marinier, 2023).

2.2. Eco-friendly products made from coffee grounds

Coffee grounds, once considered mere waste, are now recognized for their diverse potential in various applications. Rich in nutrients like nitrogen, coffee grounds make an excellent supplement to compost or as direct fertilizer for gardens. Beyond agricultural uses, innovators are discovering ways to recycle coffee grounds into an array of products. For instance, coffee grounds can be used to producing bio fuels, natural odor absorbers, and eco-friendly non-woven fabrics. Their gritty texture also makes them ideal for exfoliating products in the cosmetics industry. The growing awareness of coffee grounds' valuable properties has initiated a significant shift, turning what was once waste into a versatile and environmentally beneficial resource (Melo, 2024).

One of the most outstanding features of coffee ground products is their complete biodegradability. Typically, these items decompose within 6 to 12 months, leaving behind beneficial inorganic substances that enrich the soil and support plant growth (Le, 2022).

Despite being made from recycled materials, products made from coffee grounds maintain high quality, sustainable PP plastic properties that are impact-resistant and heat-resistant. These bio plastic products not only preserve the desirable traits of traditional items but also bring the distinctive benefits of bio plastics (Huynh, 2022).

Health and safety are paramount for consumers purchasing coffee ground products. These items do not consist of harmful chemicals, dyes, and preservatives, and are made entirely from natural and eco-friendly materials. Coffee ground products also offer the pleasant aroma of coffee, creating nature-connected experience which allows users to be mentally comfortable and relaxed. Their distinguishing brown color adds a touch of simplicity and modern elegance (Ha, 2023).

Despite still being relatively new in the market, coffee ground products have attracted considerable interest and approval from consumers. They help reduce plastic waste and offer more choices for those seeking safe, environmentally friendly options.

One of the popular eco-friendly products made from coffee grounds is durable straws that do not break or dissolve in water and are fully biodegradable as well as able to turn into compost that benefits the soil. Coffee ground cutlery sets - comprising knives, spoons, and forks – also serve as sustainable alternatives to disposable plastic utensils and are highly valued for their practicality. Apart from that, to go cups made from coffee grounds are also well-know in the market. These cups, featuring both cups and lids, are convenient for takeaway and reusable, making them a unique gift choice. Other notable items include coffee ground pens, trash bags, biodegradable non-woven fabrics, and masks, all of which contribute to a more sustainable marketplace (Huynh, 2022).

2.3. Behavioral theory

The Theory of Reasoned Action (TRA), formulated by Fishbein and Ajzen in 1975, examines consumer behavior by focusing on the intentions behind their actions and determines consumers' behavioral tendencies. TRA posits that behavioral intentions are shaped by two primary factors: attitudes towards the behavior and subjective norms, which reflect the influence of others on one's attitudes. This model aims to predict and explain the tendency to perform a behavior based on the individual's attitude toward the behavior itself, rather than their attitudes toward the product or service involved.

The Theory of Planned Behavior (TPB) is a more developed and advanced version of the TRA model. TPB, developed by Ajzen in 1991, is commonly used to predict specific behaviors of random individuals, such as purchasing decisions. The two primary factors influencing this decision are personal attitudes and subjective norms. Personal attitudes are measured by trusts and evaluations concerning the outcomes of the behavior. Subjective norms refer to the awareness of influential individuals regarding whether the person should or should not perform a particular behavior. TPB also introduces a third factor: perceived behavioral control. This refers to the individual's perception of the ease or difficulty of performing the behavior, which is related to the availability of necessary resources, knowledge, and opportunities for implementation.

2.4. Research overview

Several empirical studies have pointed ọut factors influencing Vietnamese consumers' intentions to purchase green products. For instance, the study by Nguyen Thi Thanh Ngoc and Nguyen Thi Bich Ngoc (2023) examines the impact of social media on Generation Z's intention to buy eco-friendly products. Based on data collected from 300 Generation Z individuals who are knowledgeable about eco-friendly products, the study utilizes the Theory of Reasoned Action and Theory of Planned

Behavior, with data analyzed by SPSS and AMOS software. The results indicate that social media enhances consumers' care about environment, which in turn fosters positive attitudes and strongly promotes the intention to purchase eco-friendly products. Similarly, social media significantly affects subjective norms, thus shaping the intention to buy eco-friendly products. In another study, Cai Trinh Minh Quoc, Hoang Trong Hung, Pham Le Hoang Linh, and Le Viet Dan Ha (2020) explored factors influencing the intention and behavior of using eco-friendly bags among consumers at supermarkets in Hue City. Their research identified four factors: "Attitude towards eco-friendly bags", "Personal ethical norms", "Expectations for a better future for the next generation", and "Green marketing programs at supermarkets". These factors were found to indirectly influence the behavior of using eco-friendly bags among consumers in Hue City. Nguyen Duc Cam Tu (2022) study examined factors affecting Vietnamese consumers' intention to buy green products, specifically bamboo tooth brushes. The study employed a quantitative research method with analysis through AMOS, which is suitable for a small sample size. The findings revealed that most hypotheses regarding the relationship between functional value (GPVF), conditional value (GPVC), emotional value (GPVE), social value (GPVS) and perceived green value (GPV) with attitudes toward bamboo toothbrushes (AGP) were accepted. Additionally, the study highlighted the influence of attitudes toward bamboo toothbrushes (AGP), subjective norms (SN), and perceived behavioral control (PBC) on the intention to purchase bamboo toothbrushes among Vietnamese consumers (GPI). The research also found that environmental perception (PEK) affects attitudes toward bamboo toothbrushes (AGP) and the intention to buy bamboo toothbrushes (GPI).The study by Ho Thi Hoai Trinh, Than Thi Bich Quyen, and Nguyen Thi Bich Ngoc (2023) also identified factors affecting the intention to purchase green products according to the Theory of Planned Behavior and the Theory of Reasoned Action. The study emphasized that knowledge about green products and social influence positively impacts the intention to purchase green products, with attitude serving as a mediating factor.

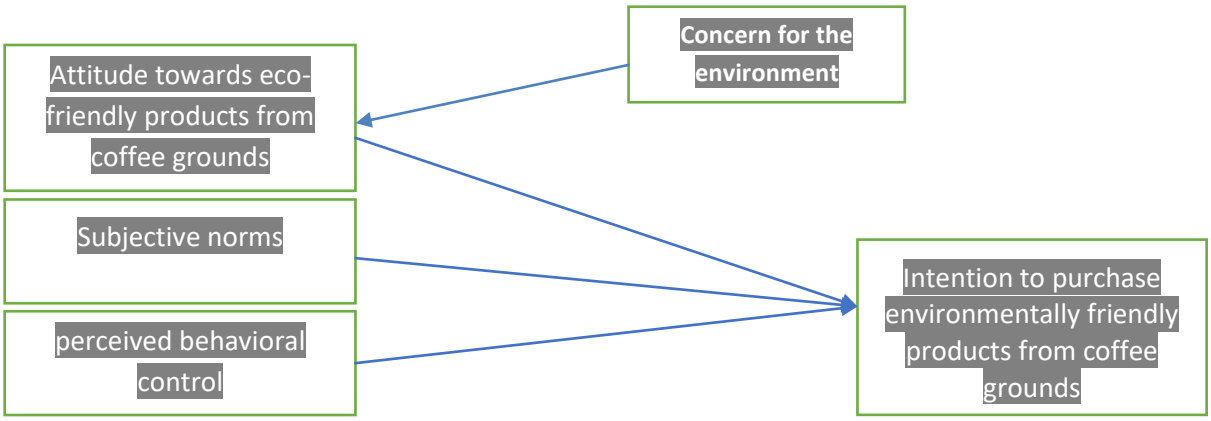
Duong Thi Hoai Nhung, Nguyen Thi Thu Uyen, and Duong Huy Thanh (2022) identified five factors affecting the intention to purchase green products: (1) Attitude towards buying green products, (2) Social influence, (3) Concern for the environment, (4) Perceived effectiveness, and (5) Ecological labels. The findings indicated that four factors positively impact consumers' intention to buy green products: Social influence, Ecological labels, Perceived effectiveness, and Attitude towards buying green products. Among these, social influence had the most significant effect, as consumers are more likely to desire green products when they see their family, friends, colleagues, and media promoting or using these comodities. However, Concern for the environment did not significantly impact the intention to buy green products, attributed to two main reasons: the perception that environmental issues are too large for an individual to address, and the low availability of green products' information. LeDuc Thuan and Phan Quoc Tan (2023) investigated the factors determining the intention to purchase green products among consumers. Their study proposed a model with five factors: Environmental awareness, Subjective norms, Behavioral control, Attitude, and Happiness. The results showed that four factors significantly affect young consumers' intention to buy green products, with Behavioral control being excluded from the model and Environmental awareness having the most substantial impact.

Although there is considerable research on the intention to consume green products, most studies either address green products in general or focus on specific products (e.g., bamboo toothbrushes) with relatively few publications. Therefore, to fill this research gap, this paper investigates the factors influencing the intention to purchase eco-friendly products made from coffee grounds; thereby, proposes several solutions to promote the intention to buy green products in general, and eco-friendly products made from coffee grounds in particular.

3. RESEARCH MODELS, HYPOTHESES AND SCALES

Research models:

Figure 1. Proposed research model



Source: Research team proposal

Research Hypotheses:

- H1. Attitude towards eco-friendly products made from coffee grounds has a positive correlation with the intention to purchase these products
- H2. Subjective norms have a positive correlation with the intention to purchase eco-friendly products made from coffee grounds.
- H3. Perceived behavioral control has a positive correlation with the intention to purchase eco-friendly products made from coffee grounds.
- H4. Environmental concern has a positive correlation with the attitude towards eco-friendly products.
- H5. Environmental concern has a positive correlation with the intention to purchase eco-friendly products made from coffee grounds.

Research variables and scales:

Table 1. Variables and scales of factors in the model

STT	Symbols	Observed variables	References
I	**AT**	**Attitude towards eco-friendly products made from coffee grounds**	McCarty & Shrum (1994); Ngoc. N.T.T, Ngoc, N.T.B (2023)
1	AT1	I am interested in eco-friendly products from coffee grounds.	
2	AT2	I feel that buying eco-friendly products made	

		from coffee grounds has many benefits.	
3	AT3	I feel buying eco-friendly products from coffee grounds satisfies my passion.	
4	AT4	I feel that buying eco-friendly products from coffee grounds is a popular trend among young people today.	
5	AT5	I feel that buying eco-friendly products from coffee grounds is something young people should experience.	
II	**SS**	**Subjective norms**	
6	SS1	Friends and people around me advised me to buy environmentally friendly products from coffee grounds.	Armitage & Conner (1999); Ngoc. N.T.T, Ngoc, N.T.B (2023)
7	SS2	People who are important to me approve of my decision to buy eco-friendly products made from coffee grounds.	
8	SS3	My interactions with people influence my environmentally friendly products purchase.	
9	SS4	I buy eco-friendly products from coffee grounds because my friends and relatives around me intend to/have been consuming the products.	
III	**PBC**	**Perceived behavioral control**	
10	PBC1	I am able to buy eco-friendly products from coffee grounds.	Goldsmith &et al (2000), Gunawan & Huarng (2015), Pop, Saplasan & Alt (2020)
11	PBC2	I have the financial constraints to buy eco-friendly products from coffee grounds.	
12	PBC3	I have enough time to research and buy eco-friendly products from coffee grounds.	
13	PBC4	I am willing to spend time and money to buy environmentally friendly products from coffee grounds.	
VI	**CE**	**Environmental concern**	
14	CE1	Buying products made from coffee grounds because they are produced in an environmentally friendly way	Pop; Saplasan & Alt (2020); Ngoc. N.T.T, Ngoc, N.T.B (2023)
15	CE2	To survive, humans must maintain a balanced relationship with nature.	
16	CE3	When I consume, I focus on environmentally friendly products.	
17	CE4	That green brands are protecting the ecosystem fits my ethical values	
VI	**PI**	**Intention to purchase eco-friendly products**	

		made from coffee grounds.	
18	PI1	I intend to buy eco-friendly products from coffee grounds in the near future.	Maichum & et al (2016); Kumar & Pandey (2023); Ngoc. N.T.T, Ngoc, N.T.B (2023)
19	PI2	I would be more interested in buying eco-friendly products from coffee grounds.	
20	PI3	I am willing to introduce friends and relatives to buy environmentally friendly products from coffee grounds.	

4. RESEARCH METHODS

4.1. Data Collection Method

Based on the theoretical framework and a review of studies on the factors influencing the intention to purchase eco-friendly products made from coffee grounds among Vietnamese young people, the research model includes the following factors: Attitude towards eco-friendly products made from coffee grounds (AT); Subjective Norms (SN); Perceived Behavioral Control (PBC); Environmental Concern (EC) affecting the "Intention to Purchase Eco-Friendly Products Made from Coffee Grounds Among Vietnamese Youth" (PI).

The survey questionnaire was developed using a 5-point Likert scale, with the following response options:

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

A quantitative research method was employed to collect opinions from young people (born between 1990 and 2010) living and working in Vietnam. After constructing the survey, the research team conducted a pilot test with 10 young individuals who frequently purchase eco-friendly products made from coffee grounds. Preliminary survey's results indicated that the responses were consistent with the factors included in the model.

Due to limitations in time and resources for the survey, the author employed a convenience sampling method. The minimum sample size required was determined based on the 10 times rule proposed by Hair et al. (2016) for PLS (Partial Least Squares). This rule is as follows:

- Method 1. The minimum sample size should be 10 times the number of observed variables in the structural model with the most observed variables.
- Method 2. The minimum sample size should be 10 times the number of paths leading into the construct with the most incoming paths.

For the factors and observed variables in this study, using Method 1, the minimum sample size is 5*10 = 50.Using Method 2, the minimum sample size is4*10 = 40. The survey targeted young individuals who intend to purchase eco-friendly products made from coffee grounds. Given the

objective of collecting a abundant number of samples to ensure the stability of the effects and based on the capability to gather samples, the research team decided to distribute the questionnaire to more than 300 participant. The questionnaire was distributed to the survey participants online via a link (https://docs.google.com/forms/d/e/1FAIpQLScPsdZayOr-9tcK0TJ-qIL5MCn8IRQT0bXCSiNgzjYLX1B4wA/view form). A total of 378 answers were collected, of which 302 valid responses were from young individuals (born between 1990 and 2010) who expressed an intention to purchase eco-friendly products made from coffee grounds (ensuring a sample size greater than 50) were included in the factor analysis.

4.2. Data processing method

SMARTPLS software is used to test hypotheses and evaluate the impact level of factors.

Step 1: Evaluate the measurement model

The measurement model is evaluated by considering the contribution of observed variables (outer loadings), the reliability of the scale (Cronbach's Alpha), convergence (Convergence), and discriminant validity (Discriminant Validity).

Step 2: Evaluate the structural model

When the measurement model meets the requirements, proceed to evaluate the structural model through the impact relationship, path coefficient, overall determination coefficient R square, effect size coefficient f square.

Additionally, in order to assess the impact of each factor, the team determines the range value and the average value for each factorand identifies which response threshold the average score falls into.

Range value = (Maximum - Minimum) / n = (5-1)/5 = 0.8
Evaluation thresholds based on the average score value:
+ 1.00 - 1.80: Strongly Disagree
+ 1.81 - 2.60: Disagree
+ 2.61 - 3.40: Neutral
+ 3.41 - 4.20: Agree
+ 4.21 - 5.00: Strongly Agree

5. RESEARCH RESULTS

5.1. Description of survey participants

Table2.Descriptive statistics of survey participants

Gender	**Number of people**	**Percentage (%)**	**Know about environmentally friendly products from coffee grounds**	**Number of people**	**Percentage(%)**
Male	154	40.7	Yes	304	80.4
Female	224	59.3	No	74	19.6
Total	*378*	*100,0*	*Total*	*378*	*100*

Education level	Number of people	Percentage (%)	Age	Number of people	Percentage (%)
High school	97	25.7	1990-1995	84	22.2
Undergraduate	104	27.5	1996-2000	92	24.3
Postgraduate	56	14.8	2001-2005	104	27.5
Employed	121	32	2006-2010	84	22.2
Total	*378*	*100*	*Total*	*378*	*100*

Source: Survey results

Regarding the ***education level*** of the survey participants. Out of 378 respondents, 97 are at the high school level (26%); 104 are at the undergraduate level (28%); 56 are at the postgraduate level (15%), and 121 are employed (32%)

Regarding the ***gender*** of the survey participants. Out of 378 respondents, 224 are female (59%); 154 are male (41%).

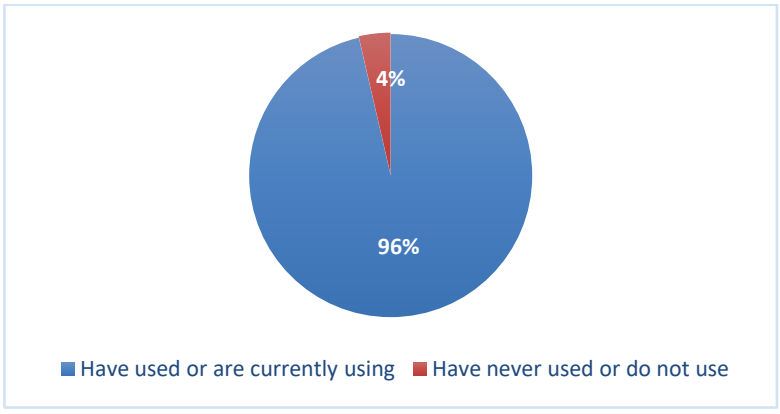
Regarding the ***age*** of the survey participants. Out of 378 respondents, 84 are born in 1990–1995 (22%); 92 are born in 1996–2000 (24%); 104 are born in 2001–2005 (28%); and 84 are born in 2006–2010 (22%).

Regarding ***knowledge of environmentally friendly products made from coffee grounds***. Out of 378 respondents, 304 are aware of such products (80%), and 74 are not aware of them (20%). This indicates that the survey participants are generally interested in products made from coffee grounds.

5.2. Consumption Trends of Environmentally Friendly Coffee Ground Products Among Vietnamese Youth

Chart 1. Percentage of Survey Participants Using Environmentally Friendly Coffee Ground Products

(For those who are aware of the products)

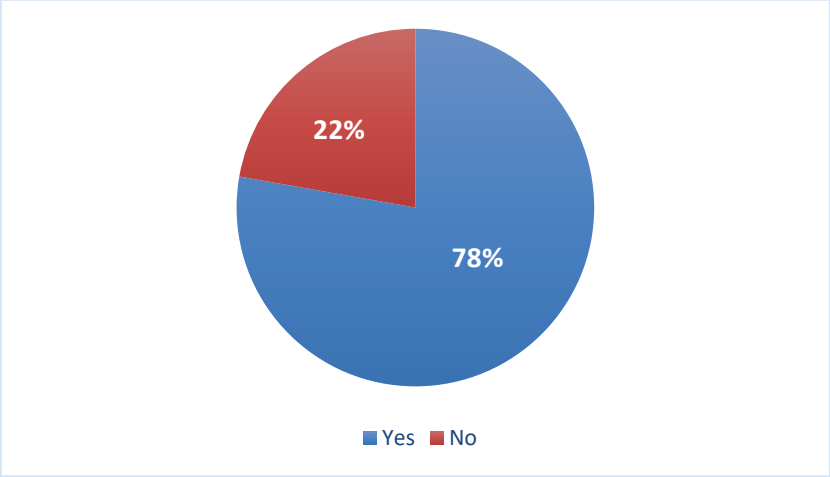


Source: Survey Results

Out of the 304 respondents who are aware of environmentally friendly coffee ground products, 295 have used or are currently using these products (97%), while 9 respondents have never used or do not use these products (3%).

Chart 2. Percentage of Survey Participants Intending to Use Environmentally Friendly Coffee Ground Products in the Future

(For those who have never used the products)

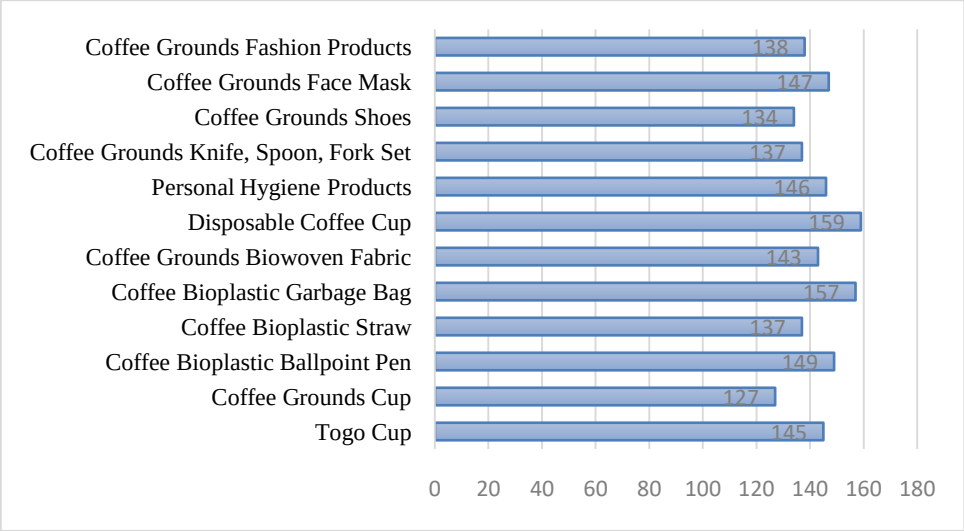


Source: Survey Results

Of the 9 respondents who have never used or do not use the products, 7 (78%) intend to use environmentally friendly coffee ground products in the future, while 2 (22%) do not intend to use these products.

Chart 3. Environmentally Friendly Coffee Ground Products That Are Commonly Used

(For those who have used the products)

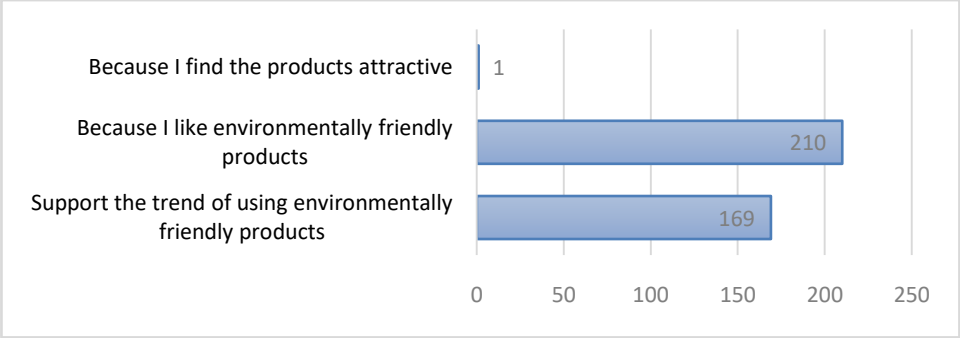


Source: Survey Results

Out of the 295 respondents who have used or are currently using the products, 138 use fashion items made from coffee grounds (47%); 147 use face masks (50%); 134 use shoes (45%); 137 use cutlery sets (46%); 146 use personal hygiene products (50%); 159 use single-use coffee ground

plastic cups (54%); 143 use coffee ground biotextiles (49%); 157 use biodegradable trash bags (53%); 137 use biodegradable straws (46%); 149 use biodegradable coffee pens (51%); 127 use coffee ground cups (43%); and 145 use to-go cups (49%). It can be seen that the most commonly used product among the survey participants is the single-use coffee ground plastic cup.

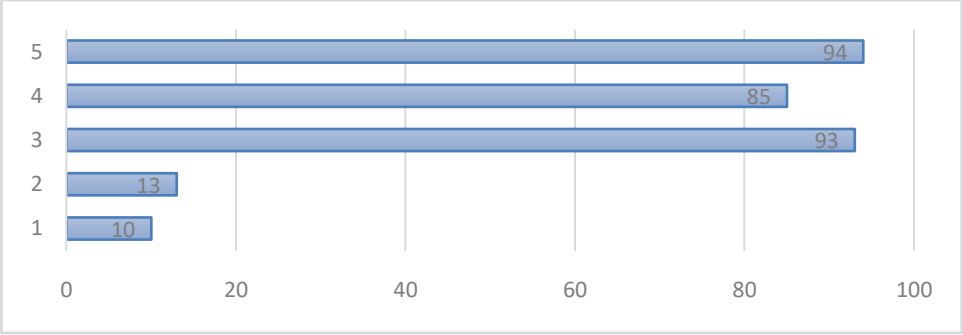
Chart 4. Reasons for Choosing Environmentally Friendly Coffee Ground Products



Source: Survey Results

Out of the 295 respondents who have used or are currently using the products, 210 use them because they like environmentally friendly products (71%); 169 use them to support the trend of using environmentally friendly products (57%); and 1 uses them because they find the products attractive (0.3%). It can be observed that the primary reason survey participants use environmentally friendly coffee ground products is because they like environmentally friendly products

Chart 5. Frequency of Using Environmentally Friendly Coffee Ground Products



Source: Survey Results

Out of the 295 respondents who have used or are currently using the products, 94 rate their usage frequency at level 5 (most frequent, 32%); 85 rate their frequency at level 4 (frequent, 29%); 93 have an average usage frequency (32%); 13 use them infrequently (4%); and 10 rate their use of environmentally friendly coffee ground products at level 1 (least frequent). This indicates that the majority of survey participants rate their usage frequency of environmentally friendly coffee ground products as most frequent.

5.3. Results of Testing the Influence of Factors on the Purchase Intention of Environmentally Friendly Coffee Ground Products among Vietnamese Youth

5.3.1. Evaluation Results of the Quality of Observed Variables in the Measurement Model

Testing the quality of observed variables

The quality of observed variables is assessed through outer loadings. In the initial data run, the scale AT4 had an outer loading coefficient less than 0.7, so the AT4 scale was removed from the model. The research team then ran the data again, and the quality of the observed variables affecting the purchase intention of environmentally friendly coffee ground products is presented in Table 3.

Table3. Outer Loadings Coefficients of Factors Affecting the Purchase Intention of Environmentally Friendly Coffee Ground Products

	AT	CE	PBC	PI	SS
AT2	0.746				
AT3	0.719				
AT5	0.750				
CE1		0.717			
CE2		0.716			
CE3		0.757			
CE4		0.725			
PBC1			0.742		
PBC2			0.730		
PBC3			0.729		
PBC4			0.770		
PI1				0.797	
PI2				0.764	
PI3				0.819	
SS1					0.769
SS2					0.733
SS3					0.786
SS4					0.772
AT1	0.759				

Source: Research team's test results

From the results of Table 3, the outer loadings coefficients for all the correlation coefficients of the variables affecting the purchase intention of environmentally friendly coffee ground products (all > 0.7) (Hair et al., 2016) suggest that the observed variables are significant.

Reliability Testing of the Measurement Scale

The reliability of the measurement scale for the factors affecting the purchase intention of environmentally friendly coffee ground products is assessed using SMARTPLS through two main indicators: Cronbach's Alpha and Composite Reliability (CR).

Table4. Cronbach's Alpha and Composite Reliability (CR) of Factors Affecting the Purchase Intention of Environmentally Friendly Coffee Ground Products

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
AT	0.731	0.733	0.832	0.553
CE	0.706	0.706	0.819	0.531
PBC	0.729	0.730	0.831	0.552
PI	0.707	0.710	0.836	0.630
SS	0.764	0.764	0.849	0.585

Source: Research team's test results

According to Table 4, after analyzing reliability using Cronbach's Alpha, all scales score > 0.7 (DeVellis, 2012) and do not violate any rules requiring variable removal, so no variables were removed and the scales are considered reliable.

The Composite Reliability (CR) for all observed variables is also > 0.7 (Bagozzi & Yi, 1988) (Table 4). Therefore, the measurement scales are reliable, analytically meaningful, and are used in subsequent factor analysis.

Convergent Validity

According to the data analysis results in Table 4, the Average Variance Extracted (AVE) for all variables is > 0.5 (Hock & Ringle, 2010), indicating that the model meets the conditions for convergence.

Discriminant Validity

The results in Table 5 regarding the Fornell-Larcker criterion for the model studying factors affecting the intention to purchase environmentally friendly coffee ground products demonstrate discriminant validity, as all square root AVE values on the diagonal are higher than the values off-diagonal. Therefore, in terms of discriminant validity, both the cross-loadings and the Fornell-Larcker criteria meet the conditions.

Table5. Fornell-Larcker Criterion for the Model Studying Factors Affecting the Purchase Intention of Environmentally Friendly Coffee Ground Products

	AT	CE	PBC	PI	SS
AT	0.744				
CE	0.727	0.729			
PBC	0.715	0.722	0.743		
PI	0.697	0.701	0.694	0.794	
SS	0.656	0.623	0.665	0.729	0.765

Source: Research team's test results

Effect Sizef²

The effect size **f²**represents the degree of impact of a construct (factor) when it is removed from the model.The**f²**values correspond to 0.02, 0.15, and 0.35, indicating small, medium, and large effects, respectively (Cohen, 1988). If the effect size is < 0.02, it is considered to have no impact.

Table6. Summary of f² Values

	AT	CE	PBC	PI	SS
AT				0.034	
CE	1.122			0.060	
PBC				0.027	
PI					
SS				0.187	

Source: Research team's test results

In this model, as shown in Table 6:

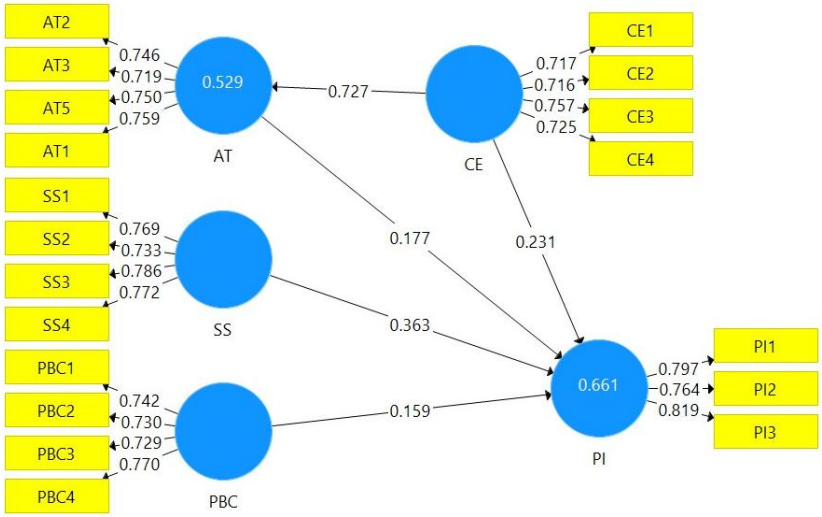
Impact on AT (Attitude): The f² value for the CE (Consumer Engagement) variable is 1.122 (f² > 0.35), indicating a large impact of CE on AT.

Impact on PI (Purchase Intention): The f² values for the variables CE, AT, and PBC (Perceived Behavioral Control) are 0.060, 0.034, and 0.027, respectively, showing that the impact of these variables on PI is small (0.02 < f² < 0.15). The f² value for the SS (Social Support) variable is 0.187, indicating a medium impact on PI (0.15 < f² < 0.35).

5.3.2. Evaluation of Impact Levels Using the Structural Model Assessment of Impact Relationships

The relationships and impact levels of the factors affecting the intention to purchase environmentally friendly coffee ground products on SMARTPLS are illustrated in Figure 2.

Figure2. Factors Affecting the Intention to Purchase Environmentally Friendly Coffee Ground Products"



Source: "Results of the SMARTPLS Testing by the Research Team

The results of the Bootstrap analysis assessing the impact relationships are shown in Table 7.

Impact on the AT (Attitude) Variable: The variable 'Concern for the Environment' (CE) affects the variable 'Attitude Toward Environmentally Friendly Coffee Ground Products' (AT) with a path coefficient of 0.727 and a P-value < 0.05, indicating that the CE factor is statistically significant in reflecting its relationship with AT *(Hypothesis H4 is accepted).*

Impact on the PI (Purchase Intention) Variable: The variables "Attitude Toward Environmentally Friendly Coffee Ground Products" (AT) with a path coefficient of 0.177; "Subjective Norm" (SS) with a path coefficient of 0.363; "Perceived Behavioral Control" (PBC) with a path coefficient of 0.159; and "Concern for the Environment" (CE) with a path coefficient of 0.231, all have P-values < 0.05, indicating that these factors are statistically significant in reflecting their positive impact on the intention to purchase environmentally friendly coffee ground products *(Hypotheses H1, H2, H3, and H5 are accepted).*

Table7. Path Coefficients of the Structural Model

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
AT -> PI	0.177	0.179	0.059	3.010	0.003
CE -> AT	0.727	0.726	0.043	16.959	0.000
CE -> PI	0.231	0.226	0.057	4.071	0.000
PBC -> PI	0.159	0.163	0.055	2.868	0.004
SS -> PI	0.363	0.363	0.045	7.994	0.000

Source: Results of the SMARTPLS Testing by the Research Team

The results in Table 7 show that with a 95% confidence level, the regression equations can be expressed as follows:

AT = 0.727*CE

PI=00.177*AT+0.231*CE+0.159*PBC+0.363*SS

Evaluation of the Overall Coefficient of Determination (R^2)

The results of the PLS Algorithm analysis for the R^2 value reflect the extent to which the independent variables explain the dependent variable. The R^2 value measures the overall coefficient of determination (R-square value), which is an indicator of how well the model fits the data (model's explanatory power). According to Hair et al. (2010), R-square values are suggested at levels of 0.75, 0.50, or 0.25.

Table 8. Coefficient of Determination (R^2) for the Independent Variables Explaining the Dependent Variable

	R Square	R Square Adjusted
AT	0.529	0.527
PI	0.661	0.656

Source: Research team's test results

The results from Table 8 show:

For the AT (Attitude) Variable: R^2 is 0.529 and the adjusted R^2 is 0.527. Thus, the CE variable in the model explains 52.9% of the variance in the AT variable.

For the PI (Purchase Intention) Variable: R^2 is 0.661 and the adjusted R^2 is 0.656. Thus, the independent variables AT, SS, PBC, and CE explain 66.1% of the variance in the PI variable.

Evaluation of the Standardized Root Mean Square Residual (SRMR) Index

The Standardized Root Mean Square Residual (SRMR) index indicates the goodness of fit of the research model. According to Hu & Bentler (1999), a model is generally considered to be appropriate if the SRMR value is less than 0.08 or 0.1.

Table9. Standardized Root Mean Square Residual (SRMR) Index

	Saturated Model	Estimated Model
SRMR	0.069	0.083

Source: Research team's test results

According to the SRMR results in Table 9 of the research model, the Saturated Model has an SRMR of 0.069, which is less than 0.08; the Estimated Model has an SRMR of 0.083, which is less than 0.1. Thus, this model is suitable for data analysis.

6. DISCUSSION

The research results indicate, with 95% confidence, that there are four factors influencing the "Purchase Intention for Environmentally Friendly Coffee Ground Products" (PI). Among these, the variable "Concern for the Environment" (CE) impacts the variable "Attitude Towards Environmentally Friendly Coffee Ground Products" (AT) with a path coefficient of 0.727, indicating that a 1-unit increase in environmental concern leads to a 0.727-unit increase in attitude towards environmentally friendly coffee ground products. Thus, concern for the environment has both a direct impact and an indirect impact through the variable "Attitude Towards Environmentally Friendly Coffee Ground Products" (AT) on the purchase intention of environmentally friendly coffee ground products. The factor "Attitude Towards Environmentally Friendly Coffee Ground Products" (AT) positively affects the "Purchase Intention for Environmentally Friendly Coffee Ground Products" (PI) with a path coefficient of 0.177, showing that a 1-unit increase in attitude about environmentally friendly coffee ground products results in a 0.177-unit increase in purchase intention. The "Subjective Norm" (SS) factor has the strongest impact on the "Purchase Intention for Environmentally Friendly Coffee Ground Products" (PI) with a path coefficient of 0.363, indicating that a 1-unit increase in subjective norm leads to a 0.363-unit increase in purchase intention. Next is the factor "Concern for the Environment" (CE), which positively influences purchase intention with a path coefficient of 0.231, meaning a 1-unit increase in environmental concern among youth will raise purchase intention by 0.231 units. Finally, the "Perceived Behavioral Control" (PBC) factor has the lowest impact (0.159) on the purchase

intention for environmentally friendly coffee ground products, suggesting that a 1-unit increase in perceived behavioral control will increase the purchase intention for environmentally friendly coffee ground products by 0.159 units.

Based on the collected results, the research team provides several discussions aimed at enhancing awareness and promoting the consumption of environmentally friendly products in general, and specifically environmentally friendly coffee ground products, among young people:

The subjective norm factor has the strongest impact on the intention to purchase environmentally friendly coffee ground products. This indicates that surrounding individuals play a crucial role in influencing one's purchase intention these products. The reason is that today's youth, primarily Gen Z, tend to follow trends and are easily influenced by the consumption behaviors of those around them, especially friends and family members. Therefore, to strengthen the intention and behavior of consuming environmentally friendly coffee ground products, manufacturing companies should collaborate with brands, KOLs (Key Opinion Leaders), and KOCs (Key Opinion Consumers) through affiliate marketing to deeply impact the Gen Z consumer segment. Selecting influencers to promote products related to green consumption, especially environmentally friendly coffee ground products, will encourage young people to trust and use these products, and a variety of green and environmentally friendly products in general, more in the future.

Concern for the environment not only has a direct impact on the intention to purchase environmentally friendly coffee ground products but also serves as an intermediary factor affecting the attitude towards these products. Therefore, to promote the consumption of environmentally friendly coffee ground products among young people, it is crucial to focus on the factor of "Concern for the Environment." To strengthen purchase intention, manufacturers need to influence young people in two stages combined with independent attempts on their attitude towards environmentally friendly coffee ground products. Firstly, companies should have social and humanitarian programs highlighting the importance of environmental concern and young people's awareness of the environment. Companies can collaborate with influencers and educational institutions to promote activities such as "The Origins of Biodegradable Products," "How Biodegradable Products Differ from Plastic Products," etc., through visually striking posters and videos. This will attract young people with a certain level of environmental concern, which will in turn impact their ***"Attitude Towards Environmentally Friendly Coffee Ground Products".*** When concern is sufficiently high, it will positively influence their attitude towards the products and thus enhance their intention to purchase environmentally friendly coffee ground products.

Perceived behavioral control also plays a positive role in influencing the purchase intention of environmentally friendly coffee ground products among Vietnamese youth. Therefore, manufacturers should thoroughly understand and research the conditions of consumers, especially young people, regarding their financial capacity and potential, to categorize customers. This way, they can offer product lines suitable for each young person and their respective groups. When young people have sufficient resources and the ability to purchase products that match their needs and capacities, they will be more inclined to buy environmentally friendly coffee ground products

in the future. Thus, this will boost the purchase intention for environmentally friendly coffee ground products as well as environmentally friendly products in general among young people.

7. CONCLUSION

The study identifies the factors influencing the intention of Vietnamese youth to purchase environmentally friendly coffee ground products. Through the survey results, the data analyzed using both qualitative and quantitative research methods, the research team determined the factors affecting and their impact on the intention to buy environmentally friendly coffee ground products among Vietnamese youth. The findings align with previous empirical research. Additionally, the paper contributes by offering discussions and recommendations to enhance the purchaseintention and consumption of environmentally friendly coffee ground products specifically, and green products in general, aiming to improve environmental quality and promote green and sustainable development.

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