

The Impact of Pro-environmental Beliefs and Personal Norms on Green Cosmetics Purchase Intention: A Study of Gen Z in Vietnam

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Abstract

Health consciousness and environmental issues have been concerned greatly in recent years. In the cosmetics industry, these considerations initiated a tendency for Generation Z (Gen Z) to purchase green cosmetics instead of chemical cosmetics. This paper summarizes several theoretical foundations to build hypotheses and framework examining factors affecting Gen Z's purchasing intention towards green cosmetics. Based on Value - Belief - Norm Theory (Stern, 2000), this research focuses on exploring the influence of psychological factors on green purchasing intentions (GPI). In addition, this study investigates the mediating effects of pro-environmental belief and personal norms on the relationship between the value orientations and the green purchasing intention. Finally, researchers will analyse data collected from people of different gender, ages and their monthly spending on cosmetics. A total of 655 valid responses were gathered through online and offline surveys using convenient sampling techniques. The authors evaluate the reliability (Cronbach's Alpha) and validity (EFA) by using SPSS 25 software, and test the study hypotheses by using SmartPLS 3.7 technique. The findings reveal that hedonic ($\beta=0.290$) and egoistic value orientation ($\beta=0.237$) indirectly affect GPI while personal norm exerts significant influence on GPI directly ($\beta=0.419$). The findings of the study have important implications for formulating appropriate governmental public policies and developing better marketing strategies for green cosmetics brands to approach customers.

Key-words: Value Orientations, Theory of Value-Belief-Norm (VBN), Green Cosmetics, Generation Z/ Gen Z.

JEL: M10, M30, M31.

JEL Classifications: M1, M21, G30.

1. Introduction

That Vietnamese consumers have had a tendency to purchase "green" products in recent years has been proven by 49% of consumers who are interested in products using sustainable sourcing. While 73.5% of consumers cared about environmental issues, 84.5% of consumers preferred organic products. Hence, green cosmetics are being developed with an aim to reduce negative impacts on the environment. "Green cosmetics" are defined as cosmetic products that use natural ingredients produced from natural or renewable raw materials and do not harm the environment. Besides, green cosmetics do not pose a danger to human or animal health. The fundamental requirement in cosmetics production, distribution and consumption processes is pro-environment. Lin et al. (2018) states that using green cosmetics has gradually become a lifestyle that demonstrates responsibility for self-care as well as environmental protection. Therefore, green cosmetics not only bring health values positively to consumers but also contribute to reduce environmental pollution. For that reason, it is necessary to have specific studies on green cosmetics purchasing intention to promote the ecologically consumption behavior.

In the scientific history of green consumer behavior intention, various theoretical models have been applied to explain human intention like Theory of Reasoned Action (Fishbein and Ajzen, 1975), Theory of Planned behavior (Ajzen, 1991), and Theory of Value - Belief – Norm (VBN Theory) (Stern, 2000). In Vietnam, there is a shortage of studies focusing on exploring green consumer psychology, especially in terms of Gen Z - the key buyers in the future. This problem resulted in obstacles for cosmetics brands to launch effective integrated marketing campaigns targeting Gen Z to persuade them to purchase green products. Meanwhile, VBN Theory has been frequently applied to study green behavior globally in many fields such as: electricity protection, green cosmetics, organic food, ecotourism, etc (van der Werff and Steg, 2014). It also demonstrates a causal relationship between an individual value and purchasing intention through personal beliefs and norms (Stern, 2000). Hence, this study focused on exploring Gen Z's green purchase intention under factors in VBN model.

Another aim of this study is examining a new factor in the VBN model: hedonic value orientation (HVO). HVO has only emerged in recent studies, however, it is proven to exert the strongest impact on pro-environment belief (PEB) and green purchasing intention (van der Werff and Steg, 2016; Jaini et al., 2019). Hence, HVO will be situated in this research model.

2. Literature Review & Hypothesis Development

2.1. Theory of Value - Belief - Norm (VBN Theory)

VBN theory is the development of two complementary theoretical approaches which are Basic Human Values Theory (Schwartz, 1992) and Norm Activation Model Theory (NAM Theory) (Schwartz, 1977). Basic Human Values Theory considers individual attitudes and behavior as an expression of “enduring, trans-situational beliefs about desired end states of social interaction” (Landon et al., 2018). Values and beliefs are linked indissolubly. Values are concepts of beliefs and demonstrate attitudes about a particular object, as well as an individual's relationship to that object (Schwartz, 1992). Meanwhile, NAM Theory examined three determinants of environmental protections including: awareness of consequences (AC beliefs), ascription of responsibility (AR beliefs) and personal norms (PN). From the two theories mentioned above, Stern (2000) completed the Value - Belief - Norm Theory (VBN) that demonstrates the causal relationship between personal values and behavioral intention through two mediation factors: pro-environment belief (PEB) and personal norms (PN). The VBN model has been principally applied for studying environmental behaviors, especially on climate change (Nilsson et al., 2004), green cosmetics (Jaini et al., 2019), smart energy systems (van der Werff and Steg, 2016). And Anh, P.T et al (2019) mentioned that sustainable consumption choices are positively influenced from three factors include: (i) sustainable purchase choices, (ii) sufficient and frugal consumption and (iii) awareness and action to protect environment. Zhang and Zhou (2019) also stated consumers had uncertain attitudes towards buying natural cosmetics, which had no obvious impact on the purchasing behavior; the perceived social pressures from family, relatives, groups, etc. had a clear positive impact on the purchasing behavior; online purchasing, recommendation from others, and sustainable lifestyle facilitated the purchasing behavior; high price, inconvenient purchasing location, lack of knowledge, non-harmonized certifications, etc. led to the inconsistency between consumers' purchasing intention and actual purchasing behavior.

2.2. Hypotheses Development

Value Orientation is conceptualized as important standards that serve as principles in people's lives (Stern, 2000). These value orientations are considered to be the decisive factors in shaping personal beliefs and norms.

Altruistic Value Orientation (AVO) has been concluded by previous scholars as a predictor of human environmental intentions (Stern, 2000; Steg et al., 2014). For instance, a person with high altruistic value orientation will make purchasing decisions dependent on community and pro-environmental benefits rather than personal benefits (De Groot et al., 2007). Jaini et al., (2019) also confirmed that altruistic value orientation (AVO) positively affects pro-environmental beliefs (PEB) among Malaysian consumers. However, Stern (2000) and Schultz (2005) indicated that there is no relationship between these two variables in their study. The reason for the inconsistency is between these studies' results is the difference in research subjects. Hence, the authors decided to situate the altruistic value orientation into the assumption of the research model to re-examine it with Generation Z consumers in Vietnam:

H1: Altruistic Value Orientation (AVO) influences positively on Pro-Environmental Beliefs (PEB)

Hedonic Value Orientation (HVO) represents the comfort, and happiness gained from experiencing the service (Venkatesh and Davis, 2000). Most previous studies have shown that HVO has a negative relationship with pro-environmental beliefs (De Groot et al., 2008; Jakovcevic and Steg, 2013). This describes that people with a strong hedonic value orientation will have low confidence in environmental protection. However, there exists evidence that HVO can be considered as a highlighted factor which has a significant impact on environmental beliefs rather than remaining values (Hiratsuka et al, 2018; Jaini et al., 2019). Thus, the following hypothesis is proposed:

H2: Hedonic Value Orientation (HVO) Influences Positively on Pro-Environmental Beliefs (PEB)

Egoistic Value Orientation (EVO) implies how an individual attaches great importance to their personal resources. The study of Lockie et al. (2004) showed that EVO promotes organic food consumption. Conversely, Maria and Plakoyiannaki, (2011) and Pop et al., (2020) reported that no significant impact between EVO and PEB in the context of natural cosmetics. Considering this contradiction, the authors have decided to orient the Egoistic values in the context of current research, which can formally propose the following hypothesis:

H3: Egoistic Value Orientation (EVO) Influences Positively on Pro-Environmental Beliefs (PEB)

Pro-environmental beliefs (PEB) refer the general belief relating to the natural environment that individuals hold, including 2 aspects: (1) Awareness of consequences (AC) - perceptions of the threats to themselves and others when the environment is polluted; (2) Ascription of responsibility (AR) - perceptions of their influences on environment and their mitigation of environmental pollution

abilities. Based on VBN theory, AC and AR are found to act as significant antecedents of personal norm (Stern, 2000). As argued by Fishbein and Ajzen (1977), people with high pro-environmental beliefs will expose strong personal norms. Thus, this relationship can be formally presented as following:

H4: Pro-environmental Beliefs (PEB) Influence Positively on Personal Norms (PN)

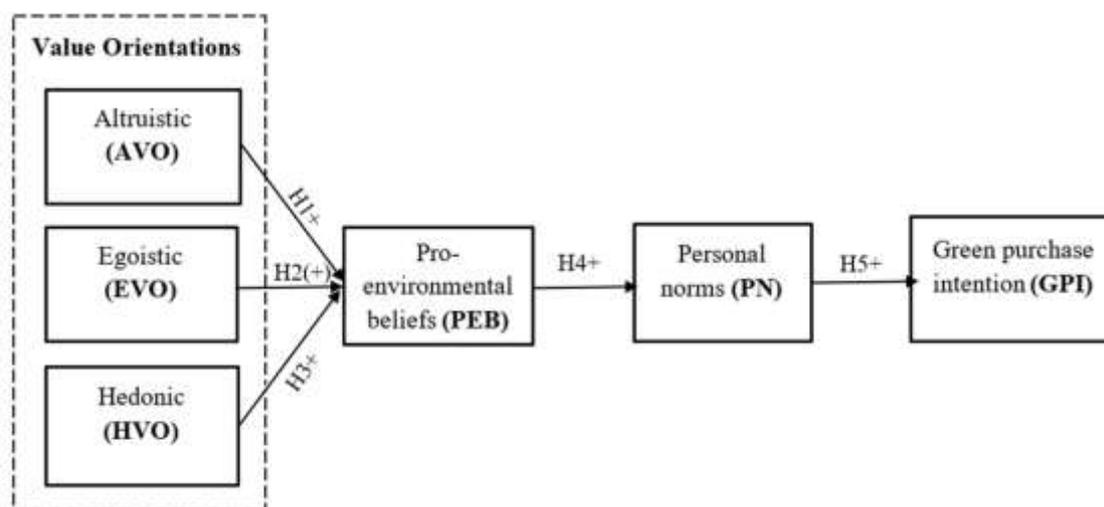
Personal norm (PN) is a sense of the obligation to take actions for the environment, relating to a "moral obligation to perform or to restrain specific actions" (Schwartz, 1977). Personal norms are associated with feelings of pride, while non-compliance with personal norms is associated with feelings of guilt and anxiety. According to Huijts (2013), personal norms are the most important factor in explaining pro-environmental behavioral intention.

Green purchasing intention (GPI) is conceptualized as the willingness and preference of green products to conventional ones in the consumer consideration process (Rashid, 2009). In this study, GPI is construed as "consumers' willingness to buy green cosmetics products".

H5: Personal Norms (PN) Influence Positively on Green Purchasing Intention (GPI)

In previous studies, researchers have explored the differences in green consumer intention based on their identity characteristics such as income (Prud'homme and Raymond, 2013), gender (Çabuk et al, 2008; Irawan and Darmayanti, 2012), and age (Syrek and Gul, 2017). In addition, the research model examines consumer intention under control variables: (1) Monthly cosmetics spending, (2) Gender and (3) Age. From the above hypotheses associated with Gen Z and Vietnamese context, the authors propose the following conceptual framework to test these relationships:

Figure 1 - Conceptual Framework



3. Methodology

3.1. Sample and Data Collection

The study explores the impact of value and time orientations on green cosmetics purchase intention. A conceptual model (Figure 1) was built to test the proposed hypotheses. Based on empirical investigation, this study uses a quantitative method, in which questionnaires were used as instruments to collect the data from respondents. The data collection was implemented in January/2021 in Hanoi, Ho Chi Minh City, and Danang using a convenience sampling technique on both offline and online platforms. The number of observed variables in this study is 28, thus, the size of the sample should be at least $10 \times 28 = 280$ respondents (Hair et al., 2014). In fact, there are **655 valid answers** collected.

As result, the number of female respondents accounts for 74,8%, approximately three times higher than male (23,7%). Regarding the respondents' age, the majority are in the 18-22 age group (66,6%). With respect to the consumers' spending for cosmetics, the most common answer (84%) is less than 1.000.000 VNĐ per month. In addition, Gen Z's purchase channel: traditional shopping channels (showrooms/ dealers) and modern channels (social networks/ e-commerce platforms) are just slightly different, with nearly the same ratio - 50,4% and 51.6% respectively. Moreover, gen Z's product awareness is increased through: social networks (82.3%), recommendation from friends/ acquaintances (43.3%), e-books/ magazines (23.1 %), traditional books/ newspapers/ magazines (7.8%).

3.2. Measurement

The study has a total of 6 latent variables with 28 observed variables inherited and developed from the scales tested by previous authors. AVO was measured via three items adapted from Izagirre-Olaizola (2015); HVO was measured via four items adapted from Ghazali et al (2017), Jaini et al. (2019), Joireman et al. (2001); EVO was measured via five items adapted from Joireman et al. (2001). PEB was measured via three items adapted from Han et al. (2010), PN was measured via eight items adapted from Onwezen et al. (2013). GPI was measured via five items adapted from Chen (2014). A five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) was used. Additionally, some questions with nominal scale to investigate information about demographics, monthly spending on cosmetics and product consumption habits.

The collected data was analyzed in the following order: (1) indicating scale reliability by Cronbach's Alpha test, (2) discovering the factor structure by Exploratory factor analysis, (3) testing the relationships developed in this research by partial least squares-structural equation modeling (PLS-SEM), (4) comparing the difference in intentions to buy green cosmetics under the influence of control variables by ANOVA test and T-test. SmartPLS (version 3.7) and SPSS (version 25) are applied in this study. Because of adapting established scales, all scales have reliability measurement with Cronbach's alpha above 0.7, except AVO. A validity test by exploratory factor analysis (EFA) gave the result that all factor loadings are above 0.5. Hence, AVO was removed from the model because of reliability conditions. HVO, EVO, FTP, PEB, PN, and GPI will be further analyzed under Partial Least Squares Structural Equation Modeling (PLS-SEM) with the help of SmartPLS 3.7 software.

4. Research Findings & Discussion

The Partial Least Squares method was performed to analyze the data according to the two-stage analytical procedure proposed by Anderson and Gerbing (1988). At the first stage, measurement model will be evaluated convergence validity and discriminant validity. Secondly, structural model assessment will test the hypotheses. Besides, it performed the bootstrapping test to evaluate the significance level of the load system external and the path coefficient and the blindfolding test to evaluate the accuracy level of the forecast.

4.1. Measurement Model Assessment

The measurement model was evaluated to assess the composite reliability (C.R.) and average variance extracted (AVE). All factors have warranted C.R. requirement (above 0.7 - according to Hair et al., 2014), ranging from 0.88 (EVO) to 0.92 (PN). Furthermore, all the AVE values in these scales were exceeded 0.6, which means that all latent variables are on average able to explain more than half of the variance of its indicators (Fornell and Larcker, 1981). Table 1 shows the discriminant validity that compares AVE values. All square roots of the AVE (on the diagonal in bold) were greater than correlations between constructs (on the corresponding row and column), hence discriminant validity was achieved Fornell and Lacker's criteria. Overall, the measurement model achieved an adequate and satisfactory reliability and validity.

Table 1 - Discriminant Validity

	EVO	GPI	HVO	PEB	PN
EVO	0.786				
GPI	0.401	0.804			
HVO	0.495	0.541	0.795		
PEB	0.381	0.319	0.407	0.834	
PN	0.439	0.419	0.495	0.742	0.755

Note: The diagonals (in bold) represent the square root of AVE.

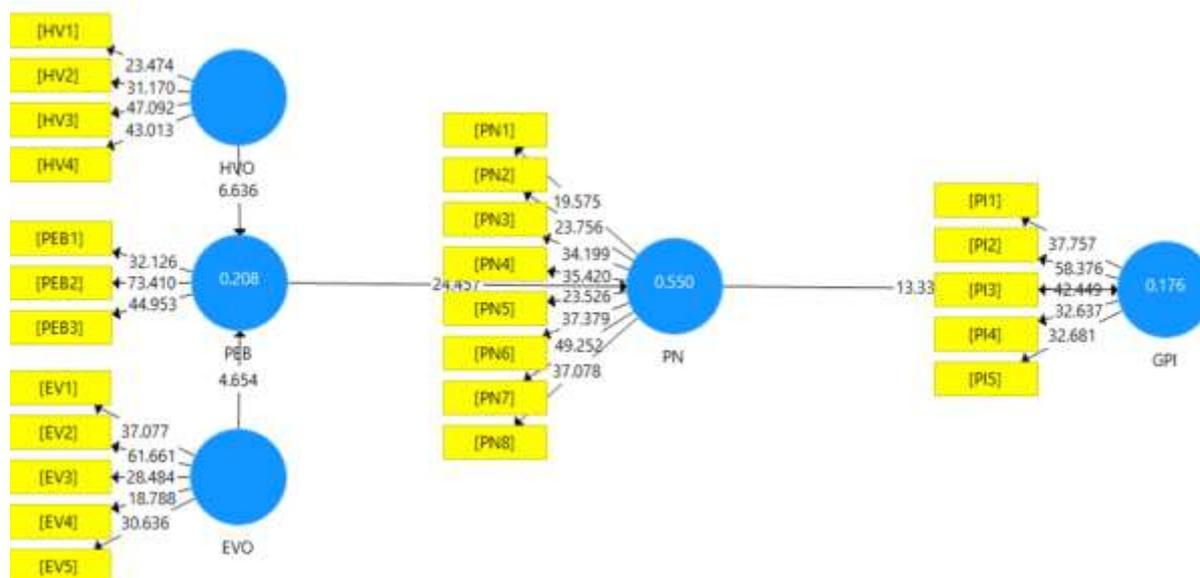
Correlations of the latent constructs are shown in the lower half of the matrix.

Shared variances are reported in the upper half of the matrix.

4.2. Structural Model Assessment

The results of the SEM model are presented in Figure 2, showing that the model has Chi-squared statistical value of 1518,037 with p-value = 0.000 <0.005. However, according to Hu and Bentler (1999), the model is considered consistent with the actual data if the SRMR value is less than 0.1. Thus, with the value of SRMR = 0.069 <0.100, the research model is concluded suitable with the research context in Vietnam.

Figure 2 - Result of Research Structural Model



By analyzing factors impacting Pro-environmental belief (PEB), egoistic value orientation (EVO) and hedonic value orientation (HVO) are explained around 20.8% of the variance in PEB (P-value = 0,000 < 0.01). The R-square value of Personal norm (PN) above 0.55 (P-value = 0,000

<0.01) illustrated a substantial model explained by EVO, HVO, and PEB. Model Green cosmetics purchase intention (GPI) indicates EVO, HVO, PEB, and PN explained about 17.6% of the variance in GPI (P-value = 0,000 < 0.01).

Through endogenous construct assessment, Cohen (1988) suggested effect size (f^2) to evaluate the importance impact of independent latent variables on the dependent latent variable. Effective size (f^2) is 0.02, 0.15, and 0.35 represent small, medium, and large effects, respectively. Result shows that the effect size of PEB to PN is $1.22 > 0.35$, thus, its relationship has a large effect size. All the other relationships have small effect sizes ($0.02 \leq f^2 < 0.15$). However, it should be noted that low effect size in this study does not mean that those relationships are not practically important. Small effect size is extremely common in psychological research (Milfont et al., 2012). In a meta-analytical review of hundreds of social psychological studies, Richard et al. (2003) indicated that average effect size in social science is 0.021.

By caring out-of-sample prediction assessment, predictive efficiency (q^2) was used under Cohen (1988) requirement. Predictive efficiency (q^2) is 0.02, 0.15, and 0.35 represent small, medium, and large efficiency. The predictive efficiency value of $q^2_{HV \rightarrow PEB}$, $q^2_{EV \rightarrow PEB}$, $q^2_{FTP \rightarrow GPI}$, $q^2_{PN \rightarrow GPI}$ are above 0.02. Noticeably, PEB has a high predictive power to explain PN with $q^2_{PEB \rightarrow PN} = 0.443 > 0.35$.

4.3. Bootstrapping Testing

A bootstrapping method (5,000 resamples with 655 respondents) was used to test the accuracy of the sample in explaining the population. The less different between the initial model estimate and the mean from the bootstrapping method are, the more reliable the model estimates are concluded (Schumacker and Lomax, 2004).

Table 2 - Results of Bootstrapping Structural Model Assessment

	β (standardized)	Standard deviation	t-value	P-value
HVO -> PEB	0.290	0.044	6.636	0.000
EVO -> PEB	0.237	0.051	4.654	0.000
PEB -> PN	0.742	0.03	24.457	0.000
PN -> GPI	0.419	0.031	13.330	0.000

The result from 5,000 resamples indicates that the original model estimate is significant with bootstrapping result because all path coefficients in table 2 are within the 95% confidence interval (t-value > 2.56 and P-value = 0,000). The results in the bootstrapping method do not differ from the initial model estimate. Therefore, the estimates in this model can be concluded to be reliable.

4.4. Hypotheses Testing & Discussion

One out of five hypotheses have been rejected (H1) because Cronbach's alpha coefficient is lower than 0.7. Results of hypotheses 2-7 estimating correlations presented all factors affecting the purchase intention at statistical significance (P-value) of 1%.

Table 3 - Hypotheses Testing Outputs

Correlation	β (standardized)	t-value	P-value	Hypotheses
AVO -> PEB	H1 (Rejected-Cronbach's alpha <0.7)			
HVO -> PEB	0.290	6.636	0.000	H2 (Supported)
EVO -> PEB	0.237	4.654	0.000	H3 (Supported)
PEB -> PN	0.742	24.457	0.000	H4 (Supported)
PN -> GPI	0.419	13.330	0.000	H5 (Supported)

Hypothesis 2 (H2) determined that Hedonic value orientation (HVO) has a positive impact on Pro-environmental beliefs (PEB) with a correlation coefficient value is 0.290 and P-value is 0.000. This relationship is also consistent with previous research of Ghazali et al. (2017) and Jaini et al. (2019). As result, HVO is proposed as the new observed variable for VBN theory. In other words, Gen Z is especially interested in the real experiences when using green cosmetics apart from ethical values.

Hypothesis 3 (H3) indicated that Egoistic value orientation (EVO) has a positive impact on the Pro-environmental beliefs (PEB). However, its standardized correlation is relatively low with $\beta = 0.237$. The above result is consistent with results of previous studies of Maria and Plakoyiannaki (2011), Pop et al., (2020). In other words, Gen Z consumers put a lot of attention on their own health and benefits when experiencing green cosmetics.

Hypothesis 4 (H4), Pro-environmental beliefs (PEB) have significant positive impact on Personal Norm (PN) with a correlation coefficient value is 0.742 and P-value is 0.000. This result is supported by VBN Theory of Stern (2000) and strengthened by other previous studies in the same green cosmetics industry such as Anderson (2012) and Kim et al., (2015). Hence, Gen Z consumers tend to form beliefs about environmental protection behaviors higher, the more they tend to develop intention to consume green cosmetics.

Hypothesis 5 (H5), Personal norm (PN) has positive impact on Green cosmetic purchase intention with correlation coefficient value is 0.264 and P-value is 0.000. This accordant with findings from VBN Theory of Stern (2000). This relationship has been positively proven in European

and Asian countries such as Japan, Taiwan (Chen, 2014; Janini, 2019). Thus, it is concluded that the Personal norm is the basic and important factor to form the Green cosmetic purchase intention.

4.5. Testing Differences in Green Cosmetics Purchase Intentions by Characteristics

Monthly Cosmetic Spending

ANOVA in-depth analysis is applied to distinction in green cosmetic purchase intentions by monthly spending on cosmetics among Gen Z. To qualify for the ANOVA analysis, the variance between value groups must be consistent as well as satisfy the equality of population variance through the Levene-test. The monthly expenditure variable has a homogeneous variance between value groups by the Levene, Sig test. = 0.996 > 0.5, thus, the variable of monthly expenditure qualifies for the ANOVA analysis.

Table 4 - The Result of ANOVA Analysis by Monthly Spending

	Sum of squares	df	Mean squares	F	Sig.
Between groups	21.499	4	5.375	9.170	.000
Within groups	380.959	650	.586		
Total	402.458	654			

The results in Table 4 indicated that the monthly cosmetic spending variable has statistical significance for Sig. = 0.00 < 0.05. In other words, there is a difference between the groups that spend monthly on cosmetics and their intentions to purchase green cosmetics.

Gender

Independent Samples T-Test method is used to define the differences in purchase intention among Male and Female. The analytical results of Levene test showed the coefficient Sig. > 0.05 which is not statistically significant. Hence, it could be concluded that there is not an existing difference between the two genders in intent to purchase green cosmetics.

Table 5 - The Results of T-Test by Gender Differences

	Levene's test		T-test			
	F	Sig.	t	df	Sig. (2-tailed)	Std Error Difference
Equal variable assumed	2.594	.108	-2.349	643	.019	-.16987
Equal variable not assumed			-2.43	275.25	.015	-.16987

The above results are contrary to the study of Çabuk et al (2008), Matić and Puh (2016) that found a difference between male and female in green consumption behavior. On the other hand, the result in this study is consistent with previous studies of Irawan and Darmayanti (2012), Tejpal (2016) concluded that there is no relationship between gender and green buying behavior. However, all previous studies have not been surveyed on Generation Z. Thus, the results of this study contributed to the research gaps on the differences in purchase intent between the genders among Generation Z.

Age Groups

The results of testing the variance of total (Levene-test) are shown the coefficient Sig 0.768 > 0.05. Thus, the variance between the age groups is equal, so it is eligible to analyze the difference by the ANOVA test.

Table 6 - The Result of ANOVA Analysis by Age Groups

	Sum of squares	df	Mean squares	F	Sig.
Between groups	10.507	2	5.253	8.716	.000
Within groups	391.781	650	.603		
Total	402.288	652			

Sig. ANOVA test of 0.000 < 0.05 in Table 6 indicates that there is a difference in green cosmetics purchase intention between age groups.

5. Conclusion & Implications

The thesis statement with three purposes: (1) examine the relationship between VBN factors and GPI, (2) pose a new factor in VBN model, and (3) assess the mediate effect of PEB and PN in the relationship between values and green purchase intention. In particular, the research has proposed a new variable “Hedonic Value Orientation” in the VBN model. Additionally, the authors explored the impact level of antecedent variables: Hedonic and Egoistic value orientation, beliefs, personal norms on green purchasing intention. Moreover, the mediating effect of pro-environmental beliefs and personal norms on the relationship between values and the purchase intention has been verified.

Based on the research findings, the government should improve regulatory quality and implement environmental regulation to increase corporate awareness of a pollution problem; update and consolidate legal provisions on "green criteria" to strictly punish wrongdoings from enterprises; implementing consumer education programs on sustainable consumption.

In the view of enterprises, they should pursue "green" values, invest in enhancing product quality, optimizing production processes, and improving customer experience through product and marketing programs. In addition, cosmetics companies should invest in both traditional and modern purchasing channels to distribute products to generation Z consumers. Particularly, they should focus on developing product lines for both men and women, expanding markets to reach this segmentation include people who spend from over 500,000 VND/ month for cosmetics. Although the 14-22 age group rarely buys green cosmetics due to financial constraints, it is necessary to nurture and orient this group practice green consumption in the near future.

Not only do enterprises invest more money in researching and developing green cosmetics, but they also need to differentiate customer experience. Gen Z in this research has been demonstrated that they always consider hedonic values. Therefore, marketing campaigns can emphasize "self-identity" and "self-loving" as a key message. Gen Z may feel that they are respected and self-loved while using those products. To conclude, the most effective marketing way for firms to target Gen Z is approaching them by emotional features instead of mental and physical features.

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