A study of consumer behavior and willingness to pay towards cosmetic products of generation Z in Hochiminh city

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Abstract. The global cosmetics industry is experiencing robust growth and Generation Z (Gen Z) is a potential customer source of this market. This research examines customers' intentions to purchase cosmetic goods of Gen Z in Hochiminh city using perceived value factors as the antecedents of attitude in the model. A cross-sectional study, applying a convenient sampling method, was conducted to collect data from Gen Z people in January 2023. There were no specific cosmetics products included in the study. Descriptive analysis and Partial Least Square (PLS) method of Structural Equation Modeling (SEM) with SmartPLS 4.0.8.7 software were used to analyze the research data. The PLS-SEM analysis of 723 responses showed that attitudes toward purchasing cosmetic products are significantly positively impacted by perceived environmental value. A more positive attitude would result from increased brand credibility and product understanding of cosmetics. There was no evidence to support the impact of other perceived values (specifically, health, safety, social, spiritual, and ethical) on attitudes toward consumer behavior. Attitude was important in predicting willingness to pay (both direct and indirect). This study helps industry professionals to advance the qualities of cosmetic products by increasing and improving environmental value, product knowledge, and brand credibility. The eco-friendly pattern of production and marketing strategies focusing on product ingredients, manufacturing processes, and quality standards are necessary to enhance brand credibility and product understanding, align with consumer preferences and achieve greater success in the market.
Keywords: Consumer behavior, cosmetic products, generation Z, Hochiminh city, willingness to pay.

1 Introduction

Humans are more and more increasingly interested in aesthetic factors, always striving for perfection to express themselves as well as adapt to modern society [1-3]. Therefore, cosmetics were invented and quickly became an essential need of every person [4]. According to the Food and Drug Administration (FDA) of the United States, "a cosmetic is a substance intended to be applied to the human body for cleansing, beautifying, enhancing attractiveness, or changing appearance" (pure soap excluded) [5].

The cosmetics industry is a thriving global market. The cosmetics industry brought in $532 billion in total revenues in 2019, up 5.5% from the prediction in sales in 2018 [6]. Asia Pacific had the largest market share in terms of cosmetics in 2019, accounting for about 41% of the worldwide market. The leading and most influential countries in Asia are such as Japan, China and South Korea.

Vietnam is quickly catching up to the major markets in the region for cosmetics and beauty products. Vietnamese cosmetics generated $94.9 million in total revenue in 2018. Through 2019-2023, the market is anticipated to rise by an average of 6.1% per year [7]. A poll conducted in 2020 found that the majority of customers in the nation possessed lipsticks, with about 30% of Vietnamese women wearing makeup daily. Female customers utilized face care goods like face masks and face cleansers the most, and they made up the largest skincare category in terms of sales in the nation. Compare with nearby nations in the area like Singapore and Thailand. Vietnam is a developing country with potential for growth that is astounding [8].

Vietnamese customers like utilizing items from different Asian sources, including such as Japan, China and South Korea. The East Asian country has also been Vietnam's biggest cosmetics import partner, with imports valued at over $263 million in 2021. Local companies haven't yet captured a sizable portion of the market for these items because of the intense competition and strong consumer demand for multinational names. The sales of beauty goods are still growing thanks to consumer demand that is on the rise and major marketing efforts by cosmetics firms. This is strikingly and conspicuously

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apparent in major cities like Hanoi, Ho Chi Minh City, and Da Nang where the number of high-class consumers is rising [7].

The current youth generation is referred to as Generation Z (Gen Z) by numerous demographic researchers. The Pew Research Center refers to those who were born between 1997 and 2012 as Gen Z. They were born and reared in a rapidly evolving, technologically sophisticated society. Their lives have been significantly impacted by the fact that they are the first generation to have grown up using the internet and social media [9]. Gen Z has grown up in the era of social media and is highly connected online. Platforms like Instagram, TikTok, and YouTube have become influential spaces for beauty content. Gen Z's exposure to beauty influencers and online tutorials has led to increased interest and experimentation with cosmetics [10]. Gen Z is known to pay more attention to their appearance through routine skin care, so most of their spending is used to shop for cosmetic products [11]. Therefore, the increasing number of cosmetic marketers had started to target this generation. It was mentioned that Generation Z has $43 billion in spending power while also influencing an additional $600 billion of family spending. Their influence comes from new media, virtual friends and technology's power [12]. They account for 33% of the world population, and 21% of the population of Vietnam [13]. It is shown that Gen Z in Vietnam are potential customers of cosmetic brands.

In such a new and promising market, understanding the consumer behavior is the key for cosmetic companies to succeed in maintaining their brands. Consumer behavior refers to how individuals or groups select, obtain, utilize, and discard goods, services, concepts, or experiences in order to satiate their wants and requirements [14]. This means that the buying process not only begins with the purchase of the product, but even before the product is delivered. The buyer initiates the purchasing process, which then leads to the search for readily available substitutes with corresponding benefits and drawbacks. After that, the decision-making process for the purchase will start. A crucial component is post-purchase behavior, which informs marketers of the success or failure of the product. As a result, marketers will need to thoroughly investigate consumer demands and comprehend a variety of consumer needs [15]. In light of the fact that cosmetic products are typically perceived as promoting healthy and sustainable lifestyles, there are five consumer-perceived values related to health, safety, social values, hedonism, and the environment that can influence the attitude to purchase cosmetic products [16-18].

Together with desire to buy, willingness to pay is analyzed to determine whether customers are compelled to pay more for a good or service, in this case, natural and organic cosmetics. specific brand engines. The highest sum of money a consumer is ready to pay for a good or service is known as their "willingness to pay" (WTP). It is a typical indicator used in pricing research studies that enables companies to determine the best rates for their goods and services in order to draw in customers and increase revenues. The study's objective was to investigate the variables affecting Generation Z consumers' preferences for and willingness to pay for cosmetic items in Hochiminh City.

2 Materials and Methods

2.1 Study Design

A cross-sectional study was conducted among Gen Z in Hochiminh City in January 2023.

2.2 Study Subjects

Gen Z was the target demographic. This group was chosen on the basis that they are members of the public with discretionary income and are in charge of making decisions regarding the purchases of cosmetics.

The study included people who living in Hochiminh city; being born between 1997 and 2012; being able to read and understand Vietnamese; and not having any cognitive impairment. People refusing to participate in the study; not filling out the survey information completely; and choosing only one answer or playing zigzag were excluded.

The minimal sample size (N) was calculated using a single population proportion formula [19]. The following assumptions have been made: a 0.5 of positive attitudes toward cosmetic behavior (P), a 5% margin of error (d) and a 95% confidence interval ($Z_{\alpha/2}$=1.96).

$$N = \frac{\left(Z_{\frac{\alpha}{2}}\right)^2 \times P(1-P)}{d^2} = \frac{(1.96)^2 \times 0.5(1-0.5)}{0.05^2} = 385$$

The researcher assumed a 10% non-response rate with a total of 423 respondents as the sample size. The researcher employed a stratified simple random probability sampling strategy for this study. The sample was obtained by stratifying Ho Chi Minh City's Gen Z population.

2.3 Survey Instrument

The questionnaire consisted of 70 questions and was broken down into seven main segments. Part 1 gathered personal characteristics such as gender, age, place to live, ethnicity, education category, marital status, occupation, average monthly personal income (million VND), purpose of cosmetic use, commonly used purchase channels, and purchase frequency. Part 2 collected consumer perceived value with 31 questions on the Likert-5 scale used to evaluate "consumer's perceived value" of cosmetic products. Part 3 assembled product knowledge including seven questions on the Likert-5 scale used to evaluate "consumer's product knowledge" of cosmetic products. Part 4 was about brand credibility with six questions on the Likert-5 scale used to evaluate "consumer's brand credibility" of cosmetic products. Part 5 assessed attitude towards consumer behavior with five questions on the Likert-5 scale used to evaluate

"Attitude towards consumer behavior" of cosmetic products. Part 6 focused on consumer purchase intention comprising seven questions on the Likert-5 scale used to evaluate "Consumer purchase intention" of cosmetic products. Part 7 considered willingness to pay including three questions on the Likert-5 scale used to evaluate "Willingness to pay" of cosmetic products. All answers were toward general cosmetic products, not specific.

Details are presented in **Appendix 01.** Each question was answered using a five-point Likert scale ranging from 1= strongly disagree, 2= disagree, 3= neutral, 4= agree, to 5= strongly agree [20]. The translation from English to Vietnamese followed the process recommended by the World Health Organization [21]. A modified Vietnamese version of a questionnaire served as the basis for the creation of a Google form (Google form). Before beginning to answer the major questions, participants must first sign a consent form that is located on the first page of the form. The main section's questions cannot be answered by those who select the "*I do not agree to participate in the study*" option; they will instead be taken to the Google form's final page. The key sections of the questionnaire's Vietnamese translation are represented on the form's subsequent pages.

2.4 Validation

A pilot test was conducted with a sample size of 60 participants to verify the questionnaire. Each person is asked about how they understand each question, explaining how to answer confusing or misleading words. All feedback about the questionnaire were acknowledged and questions were edited in terms of words to make it easier to understand and more suitable to Vietnamese culture.

The indicator loadings were examined in order to assess a reflective measurement model. In order to achieve appropriate item dependability, loadings above 0.708 should be sought after as they demonstrate that the construct accounts for more than 50% of the variation of the indicator [22]. Items such as CPI4, CPI5, CPI6, ENV5, ENV6, ENV7, SOV1, SPV4 were deleted because their outer loading was less than 0.708. All of the outside loadings, which range from 0.708 to 0.913, are shown in **Appendix 02**, demonstrating the accuracy of each measurement indicator.

Cronbach's alpha was calculated for each subscale and the overall score to measure internal consistency reliability. Reliability scores between 0.60 and 0.70 are considered "acceptable" in exploratory research, and reliability values between 0.70 and 0.90 are considered "sufficient to good." Values of 0.95 and above, however, present a problem because they demonstrate that the pieces are redundant and reduce construct validity [23, 24]. Cronbach's Alpha of 11 items is range from 0.864 to 0.915; with 4 items had Cronbach's Alpha value ≥ 0.900 (BCR - 0.908; ETC- 0.900; PKL - 0.913; SPV- 0.915) that are shown in **Appendix 03.** In addition, Composite Reliability value of 11 items range between 0.908 and 0.932; Average Variance Extracted value of 11 items is range from 0.851 to 0.915; and rho_a of 11 items is range from 0.851 to 0.915.

Convergent validity refers to how well a concept converges to take into account the variance of its constituent parts. The statistic used to evaluate the convergent validity of a concept is the average variance extracted (AVE) for all items on each construct. At least 0.50 must be the AVE. Every AVE score was higher than 0.50 (**Appendix 03**) that shows 50% or more of the variance of the construct's component parts.

Discriminant validity was assessed. The heterotrait-monotrait ratio (HTMT) of relationships was put out by Henseler et al. (2015) [25]. The HTMT is defined as the mean value of the item correlations across constructs, also known as the heterotrait-heteromethod correlations, as opposed to the (geometric) mean of the average correlations for the items measuring the same construct (i.e., the monotrait-heteromethod correlations). Problems with discriminant validity exist when HTMT values are high. Henseler et al. (2015) suggested a threshold value of 0.90 or 0.85 [25]. In addition to these recommendations, bootstrapping can be used to determine whether the HTMT value differs considerably from 1.00 or a lower threshold value like 0.85 or 0.90 [25]. As shown in **Appendix 04,** all HTMT between 0.417 and 0.815 demonstrated the study's ability to discriminate across items.

The Variance Inflation Factor (VIF) values were investigated to evaluate common method bias based on a thorough collinearity test of the model to complete the measurement model evaluation (**Appendix 05**). The collinearity among the constructs is not a significant problem in this study, according to the VIF values in this structural model, which was between 1.0 and 3.206. There was no significant multicollinearity that needed to be corrected.

2.5 Statistical Analysis

All collected data were entered into Microsoft Excel 2016 and analyzed using the Statistical Package for the Social Sciences (SPSS) version 20.0. Frequency and percentage were included in the descriptive analysis utilized in this study. The study was carried out using the Partial Least Square (PLS) method of Structural Equation Modeling (SEM), as the technique is appropriate for theoretical causal models [22]. Because standard regression does not distinguish between direct effect and indirect effect when assessing mediation relationships, PLS-SEM is notable for organizing the mediation effects using several indicators concurrently [26]. The duality between the academic research explanation and prediction for managerial consequences is resolved by the causal-predictive technique of PLS-SEM because the current investigation may lack a thorough foundation of established theories and proofs [22]. The study used SmartPLS software version 4.0.8.7 to analyze PLS-SEM.

To evaluate the structural model, it was proposed to use the Coefficient of Determination (R^2) Beta and corresponding t-values. The latent variable's R^2 value of 0.75 may be characterized as significant, 0.5 as moderate,

and 0.25 as tiny. Also recommended to be added to the fundamental assessment were predictive relevance (Q^2) and impact size (f^2) [22]. The Q^2 prediction, which is comparable to the evaluation of Q^2 values acquired by the blindfolding process in earlier PLS-SEM value, needs to be assessed via PLS predict in addition to the size of the R^2 values as criteria for predictive accuracy. If the result is greater than 0, the external constructions have predictive value for the endogenous construct being studied [27]. Values of f^2 of 0.02, 0.15, and 0.35, respectively, reflect modest, medium, and substantial impacts of the exogenous latent variables [22]. In order to evaluate the hypothesized associations, the presented hypotheses were then evaluated using the bootstrap sampling method of 5,000 subsamples with and without the control variables.

3 Results

From the entire sample of 723 participants, the respondent profile (**Table 1**) included 55.3% female respondents and 44.7% male respondents. The majority of them were unemployed (82.6%), unmarried (96.1%), and had a low income. Only 26.6% have bought cosmetics less than 1 time/year. The remaining often shopped for beauty products, even more than 4 times/year (23.0%).

As shown in **Table 2**, the structural model explained 58.6 % of the variance in Attitude Toward Consumer Behavior (ATCB) and about 43% of the variance in Consumer Purchase Intention (CPI) and Willingness To Pay (WTP), which can be considered moderate. The Q^2 value was considerably above zero, with 0.574, 0.509,

Table 1. Demographic characteristics

Variables	N (%)	Variables	N (%)
Age		**Marital Status**	
≤22	484 (66.9)	Not Married	695 (96.1)
23-26	239 (33.1)	Married	28 (3.9)
Gender		**Occupation**	
Male	323 (44.7)	Not Working	597 (82.6)
Female	400 (55.3)	Working	126 (17.4)
Location		**Income (million VND per month)**	
Urban	593 (82.0)	No income	252 (34.9)
Rural	130 (18.0)	Under 4.5	257 (35.5)
Ethnicity		≥ 4.5	214 (29.6)
Kinh	696 (96.3)	**Purchase Frequency (time(s)/year)**	
Other	27 (3.7)	< 1	192 (26.6)
Education Level		1 - 3	263 (36.4)
High school or below	93 (12.9)	3 - 4	102 (14.1)
University	615 (85.1)	> 4	166 (23.0)
Postgraduate	15 (2.1)		

Table 2. Results of R^2 and Q^2

	R^2 adjusted	Q^2 predict	Interpretation
ATTITUDE TOWARD CONSUMER BEHAVIOR	0.586	0.574	Moderate
CONSUMER PURCHASE INTENTION	0.430	0.509	Moderate
WILLINGNESS TO PAY	0.422	0.321	Moderate

Table 3. Result of Effect Size

	f^2	Interpretation		f^2	Interpretation
ATCB → CPI	0.757	Large	HEV → ATCB	0.005	-
ATCB → WTP	0.039	Small	PKL → ATCB	0.068	Small
BCR → ATCB	0.156	Medium	SAV → ATCB	0.004	-
CPI → WTP	0.251	Medium	SOV → ATCB	0.001	-
ENV → ATCB	0.013	-	SPV → ATCB	0.001	-
ETC → ATCB	0	-			

ATCB Attitude Toward Consumer Behavior; BCR Brand Credibility; CPI Consumer Purchase Intention; ENV Environmental Value; ETC Ethical Concern; HEV Health Value; PKL Product Knowledge; SAV Safe Value; SOV Social Value; SPV Spiritual Value; WTP Willingness To Pay.

0.321 for ATCB, CPI and WTP, respectively, thus supporting the model's predictive relevance of ATCB, CPI and WTP.

Table 3 depicts the values of f^2 and its interpretation. It can be observed that one relationship has large effect size, two relationships have medium and two-relationships of small effect sizes, other relationships in that table were less than 0.02 indicate that there is no effect.

Figure 1 displays the PLS-SEM analysis outcome of the final structural model with control variables. All control variables were included in the model because they were, in some cases, statistically significant. As displayed in **Figure 1** and summarized in **Table 4**, the results indicated that hypotheses H5, H7, H8, H9a, H9b, H10 were accepted at $p < 0.05$ and $p < 0.001$. Meanwhile, H1, H2, H3, H4, H6 were not supported. Control variables also showed significant effect.

The results in **Table 5** shows that CPI positively and significantly mediated the relationship between ATCB (H11: $\beta = 0.327$, $p < 0.001$) and WTP, as both direct and indirect effects were also positive and significant, there was a complementary partial mediation. Additionally, CPI mediated the relationship between Gender ($\beta = 0.111$, $p < 0.001$), marital status (MAT) ($\beta = -0.207$, $p < 0.05$) and purchase frequency (PUF) ($\beta = 0.066$, $p < 0.001$) and WTP, when the direct effect was not significant whereas the indirect effect was significant this indicates an indirect-only mediation or only the indirect effect via the mediator exists. Therefore, Gender → CPI → WTP, MAT → CPI → WTP and PUF → CPI → WTP were fully mediation. Otherwise, CPI negatively and significantly mediated the relationship between place to live (PTL) ($\beta = -0.082$, $p < 0.05$) and WTP as direct effects are significantly positive and indirect effects are significantly negative, there was a competitive partial mediation.

Following the testing for mediation, the strength of the mediator can be further explained through the total effect (**Table 6**). The increased effect of ATCB, which in turn increases the effect on WTP can be explained via the partial mediation of CPI (H9b: $\beta = 0.516$, $p < 0.001$). In the contrary, although Gender, MAT, place to live (PTL) and PUF had significantly indirect effect to WTP mediated by CPI, the non-significant direct effect and opposite signs between indirect effect and direct effect led to total effect of these paths was not significant. It was an inconsistent mediation (suppression) effect which occurs when direct and indirect effects of similar magnitudes and opposite signs result in a nonzero but nonsignificant overall [28].

4 Discussion

The goal of this research was to see if there was a significant relationship between health value, product knowledge, brand credibility and consumer behavior, attitude toward consumer behavior and consumer purchase intention, attitude toward consumer behavior and willingness to pay, consumer purchase intention and willingness to pay. The function of ethical concern as a moderator in the relationship between perceived value and purchase intention was also investigated. The model was also evaluated, and demographic variables were controlled for. The current study's key results are presented below.

4.1 Demographic characteristics

Because Gen Z (aged 15 to 26) is the primary target population in this study, the majority of them were unemployed, not married, and had a low income. Furthermore, the high purchase frequency demonstrated that Gen Z was interested in cosmetics. grew up during the rapid development and widespread adoption of the Internet, Gen Z's interest in cosmetics has been influenced by the rise of social media platforms like Instagram, YouTube, and TikTok. These platforms have shaped beauty standards and trends, with influencers and content creators promoting cosmetics and skincare products through routines, tutorials, and reviews [29, 30]. This exposure to beauty content is maybe one of the major reasons sparking curiosity and interest in cosmetics among Gen Z.

4.2 Consumer behavior and willingness to pay towards cosmetic products

The findings show that attitude toward consumer behavior was found to have a significant influence on both willingness to pay and consumer purchase intention. This result was also in line with classical attitude-behavior theory [31] and previous studies which claimed that the desire to acquire cosmetics was directly, favorably, and reasonably strongly correlated with one's opinion toward organic products [32, 33]. In addition, the positive impact of attitude toward consumer behavior on willingness to pay was direct and partially mediated by consumer purchase intention. Thereby, hypothesis H11 was also supported. This indicated that attitude is a strong predictor for willingness to pay. Consuming cosmetics was essential and beneficial, so their positive ATCB will encourage them to pay more for cosmetics. Moreover, this study also showed that consumer purchase intention was found to have a significant influence on willingness to pay. This was consistent with study of Barber et al. (2012) showing that once customers had an intention for a certain cosmetic item, their payment will be more willing [34].

By defining the different types of consumers' perceived value on cosmetics based on prior experience, such as environmental value, the study's findings provided theoretical insight into consumer attitudes about cosmetic purchases. As a result, hypothesis H5 was confirmed. The results in this regard were in line with other research from both industrialized and developing nations about personal care products [35, 36]. Customers were worried about the effects of their purchases on the environment [37].

Table 4. Hypotheses testing

Hypothesis path coefficients	Beta	SE	t-value	*p*-value	Result
H1: HEV → ATCB	0.066	0.039	1.717	0.086	Not Supported
H2: SAV → ATCB	0.055	0.036	1.517	0.129	Not Supported
H3: SOV → ATCB	0.030	0.039	0.778	0.436	Not Supported
H4: SPV → ATCB	0.036	0.059	0.614	0.539	Not Supported
H5: ENV → ATCB	0.109	0.046	2.374	0.018*	Supported
H6: ETC → ATCB	-0.015	0.043	0.351	0.725	Not Supported
H7: PKL → ATCB	0.246	0.047	5.278	0*	Supported
H8: BCR → ATCB	0.397	0.050	7.905	0**	Supported
H9a: ATCB → CPI	0.618	0.030	20.843	0**	Supported
H9b: ATCB → WTP	0.189	0.046	4.106	0**	Supported
H10: CPI → WTP	0.529	0.046	11.457	0**	Supported
AGE → CPI	0.010	0.031	0.311	0.756	Not Supported
AGE → WTP	-0.048	0.035	1.399	0.162	Not Supported
EDU → CPI	0.045	0.029	1.561	0.119	Not Supported
EDU → WTP	0.002	0.028	0.057	0.954	Not Supported
ETH → CPI	0.240	0.170	1.409	0.159	Not Supported
ETH → WTP	0.086	0.212	0.404	0.686	Not Supported
Gender → CPI	0.210	0.057	3.694	0*	Supported
Gender → WTP	-0.071	0.061	1.154	0.248	Not Supported
INC → CPI	-0.056	0.036	1.531	0.126	Not Supported
INC → WTP	0.101	0.038	2.679	0.007*	Supported
MAT → CPI	-0.392	0.174	2.259	0.024*	Supported
MAT → WTP	0.133	0.129	1.026	0.305	Not Supported
OCP → CPI	0.167	0.105	1.596	0.110	Not Supported
OCP → WTP	0.002	0.101	0.016	0.987	Not Supported
PTL → CPI	-0.155	0.064	2.424	0.015*	Supported
PTL → WTP	0.211	0.066	3.203	0.001*	Supported
PUF → CPI	0.125	0.030	4.206	0**	Supported
PUF → WTP	-0.012	0.034	0.360	0.719	Not Supported

*** p<0.001; * p<0.05.*
ATCB Attitude Toward Consumer Behavior; BCR Brand Credibility; CPI Consumer Purchase Intention; EDU Education Level; ENV Environmental Value; ETC Ethical Concern; ETH Ethnicity; HEV Health Value; INC Income; MAT Marital Status; OCP Occupation; PKL Product Knowledge; PTL Place To Live; PUF Purchase Frequency; SAV Safe Value; SOV Social Value; SPV Spiritual Value; WTP Willingness To Pay

Other types of consumers' perceived value such as health value, ethical value, safe value, social value, spiritual value did not show any significant effect in predicting attitude in this study. In contrast, recent studies' constructs have a significant positive effect on consumer attitude [33, 38].

For health value, these consumers did not associate cosmetics as being healthy. Also noteworthy is the fact that the health awareness measurement items tended to lean more toward food and exercise. As a result, it was possible that the construct did not correctly reflect the participants' health value regarding the use of cosmetics. Surprisingly, safe value, spiritual value, ethical value did not show any significant effect in predicting attitude in this study. This could be due to cosmetics having a low degree of visibility as compared to clothing and/or foods.

Meanwhile, social value did not have a significant on attitude that was consistent with study of Ghazali et al., (2017) and Suphasomboon and Vassanadumrongdee (2022) [33, 38]. People had various skin types, responses to product components, and preferences for certain requirements, hence Ghazali et al. (2017) claimed that personal considerations rather than reference groups influenced product selections more (such as whitening products). The findings of this study thus implied that these individual aspects are taken into account in addition to societal impacts [33]. The results of this study, however, were at odds with those of a previous study, which discovered that social factors had a favorable effect on consumers' humanitarian intentions as well as their propensity to buy green cosmetics goods [39]. They concluded that reliable and convincing information on

social media can increase customers' environmental awareness and green cosmetic purchase choices. Contrarily, consumers who placed a high value on individual gained over societal standards have lower inclinations to purchase cosmetics [40].

Table 5. Indirect effect (mediation)

Indirect Effect	Beta	SE	t-value	*p*-value	2.5 % CI	97.5 % CI	Meditation
H11: ATCB → CPI → WTP	0.327	0.032	10.309	0**	0.265	0.389	Partial [a]
AGE → CPI → WTP	0.005	0.016	0.310	0.757	-0.028	0.036	No
EDU → CPI → WTP	0.024	0.015	1.531	0.126	-0.005	0.056	No
ETH → CPI → WTP	0.127	0.091	1.394	0.164	-0.045	0.309	No
Gender → CPI → WTP	0.111	0.033	3.411	0.001*	0.049	0.180	Fully
INC → CPI → WTP	-0.029	0.020	1.505	0.132	-0.069	0.008	No
MAT → CPI → WTP	-0.207	0.094	2.217	0.027*	-0.398	-0.031	Fully
OCP → CPI → WTP	0.088	0.056	1.568	0.117	-0.012	0.212	No
PTL → CPI → WTP	-0.082	0.035	2.376	0.018*	-0.151	-0.016	Partial [b]
PUF → CPI → WTP	0.066	0.017	3.876	0**	0.036	0.103	Fully

*** p<0.001; * p<0.05*
[a] Complementary; [b] Competitive
ATCB Attitude Toward Consumer Behavior; BCR Brand Credibility; CPI Consumer Purchase Intention; EDU Education Level; ENV Environmental Value; ETC Ethical Concern; ETH Ethnicity; HEV Health Value; INC Income; MAT Marital Status; OCP Occupation; PKL Product Knowledge; PTL Place To Live; PUF Purchase Frequency; SAV Safe Value; SOV Social Value; SPV Spiritual Value; WTP Willingness To Pay

This study also incorporated product knowledge and brand credibility into the model, which demonstrated favorably influence attitude toward consumer behavior in addition to the six types of perceived values. Brand credibility was the most important factor in predicting attitude toward customer behavior, these results were consistent with those of Paul and Bhakar (2017) who conducted research in other contexts [41]. The findings clearly showed that when a company had high credibility, consumers had a positive attitude toward it. For product knowledge, these findings were consistent with those obtained by (Wang et al., 2019); (Nurhayati & Hendar, 2019); & (Sriminarti & Nora, 2018) in other settings [42-44]. The results clearly demonstrated that consumer awareness of cosmetic products was formed by knowledge of cosmetic products, and that awareness, in the long run, promotes cosmetic purchase intention.

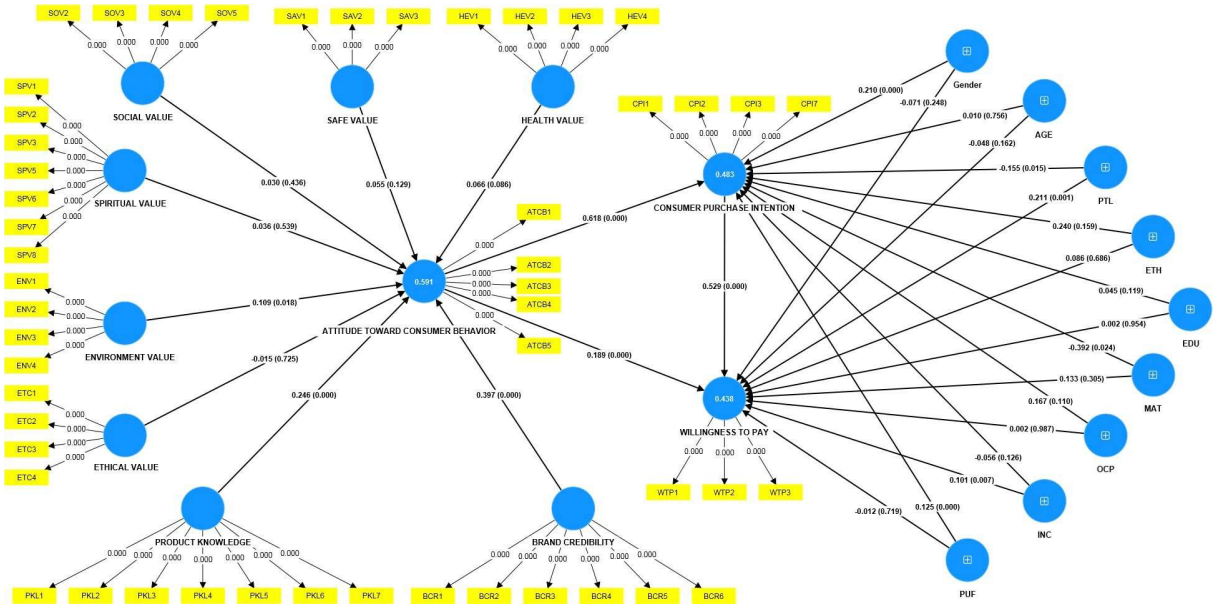

Fig. 1. PLS-SEM model result (with control variables)

Table 6. Total effects

Total effect	**Beta**	**SE**	**t-value**	***p*-value**
H1: HEV → ATCB	0.066	0.039	1.717	0.086
H2: SAV → ATCB	0.055	0.036	1.517	0.129
H3: SOV → ATCB	0.030	0.039	0.778	0.436
H4: SPV → ATCB	0.036	0.059	0.614	0.539
H5: ENV → ATCB	0.109	0.046	2.374	0.018*
H6: ETC → ATCB	-0.015	0.043	0.351	0.725
H7: PKL → ATCB	0.246	0.047	5.278	0**
H8: BCR → ATCB	0.397	0.050	7.905	0**
H9a: ATCB → CPI	0.618	0.030	20.843	0**
H9b: ATCB → WTP	0.516	0.037	13.956	0**
H10: CPI → WTP	0.529	0.046	11.457	0**
AGE → CPI	0.010	0.031	0.311	0.756
AGE → WTP	-0.043	0.038	1.137	0.256
EDU → CPI	0.045	0.029	1.561	0.119
EDU → WTP	0.025	0.033	0.770	0.441
ETH → CPI	0.240	0.170	1.409	0.159
ETH → WTP	0.212	0.230	0.924	0.356
Gender → CPI	0.210	0.057	3.694	0**
Gender → WTP	0.040	0.068	0.586	0.558
INC → CPI	-0.056	0.036	1.531	0.126
INC → WTP	0.071	0.040	1.766	0.077
MAT → CPI	-0.392	0.174	2.259	0.024*
MAT → WTP	-0.075	0.179	0.418	0.676
OCP → CPI	0.167	0.105	1.596	0.110
OCP → WTP	0.090	0.120	0.746	0.456
PTL → CPI	-0.155	0.064	2.424	0.015*
PTL → WTP	0.128	0.074	1.736	0.083
PUF → CPI	0.125	0.030	4.206	0**
PUF → WTP	0.053	0.038	1.395	0.163

*** p<0.001; * p<0.05*

ATCB Attitude Toward Consumer Behavior; BCR Brand Credibility; CPI Consumer Purchase Intention; EDU Education Level; ENV Environmental Value; ETC Ethical Concern; ETH Ethnicity; HEV Health Value; INC Income; MAT Marital Status; OCP Occupation; PKL Product Knowledge; PTL Place To Live; PUF Purchase Frequency; SAV Safe Value; SOV Social Value; SPV Spiritual Value; WTP Willingness To Pay.

4.3 Limitations and recommendations

This research had several limitations. As the majority of users of cosmetic items lived mostly in metropolitan areas, this study focused on data gathered from Ho Chi Minh City in Vietnam. Nonetheless, it is advised that future studies gather responses from a larger swath of the nation. Furthermore, to test the model's ability to predict consumer behavior, additional variables like customer satisfaction and loyalty could be added. To enhance consumer appeal, prioritize eco-friendly practices and communicate sustainability efforts clearly. Increasing brand credibility and better product understanding contribute to more positive consumer attitudes. To capitalize on this, cosmetic brands should focus on transparent communication about product ingredients, manufacturing processes, and quality standards. Strengthening brand credibility through certifications and clear messaging can foster trust and enhance positive consumer attitudes. These strategies not only align with consumer values and foster favorable attitudes but also influence their willingness to invest financially. Consumer behavior and willingness to pay are dynamic and can evolve over time. Businesses should consistently monitor consumer preferences and conduct further research to stay updated on changing trends and preferences. Future research may also take into account deterrents like accessibility and cost and skepticism toward claims about cosmetics.

5 Conclusion

The study verified that attitude was the most significant component in predicting intention to purchase. Attitude and desire to acquire cosmetic products had both a favorable direct and indirect influence on willingness to pay. Brand reputation took precedence over product understanding and environmental value in influencing the attitude toward purchasing cosmetics. It is important for industry professionals to understand consumer purchasing habits. By understanding and addressing these influencing factors, it is crucial for the sector to build a reputable cosmetic brand for customers, to communicate intelligibly and honestly about the advantages of their cosmetic products, and to guarantee the veracity of their cosmetic products' environmental claims while meeting the demands and needs of their target market.

Supplemental Material

Supplementary data associated with this article can be found in the online version at https://s.pro.vn/qkFM

Conflict of Interest

There is no conflict of interest to declare.

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Authors Contribution

All authors contributed to the study conception and design. Material preparation, data collection and analysis were performed by HTTB, TVQ, VNN, THDN. All authors commented on all draughts of the manuscript. All authors read and approved the final version for submission.

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