# Vietnamese People's Attitude and Intention to Buy Eco-Friendly Products: Insights into Evidence

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## Abstract

The study aimed to examine the attitude and intention to buy eco-friendly manufactured goods of Vietnamese people in a context of Vietnam. Quantitative research method with the tool of questionnaire was delivereddirectly and sent via social networks to a number of participants. The Statistical Package for the Social Sciences version 22 was employed to analyze the gained data.The results showed that Vietnamese people had environmental awareness and were willing to purchase eco-friendly products. Five major factorsthat positively and significantly affecting Vietnamese consumers' attitudes towardseco-friendly purchase intention were environmental concern, personal norms, satisfaction, word of mouth, willing to pay. Environmental concern, among those, was the key factor that controls Vietnamese customers' purchasing intention,whichmay be the basis for the insights into Vietnamese buyers' viewpoint and behavior towards green manufactured goods and green marketing.The research results contribute to showing the consumption habits of Vietnamese customers, thereby helping manufacturers of environmentally friendly products to access this market more easily and effectively.

*Keywords: Eco-friendly product, green marketing, purchase intention, consumption habits, Vietnam.*

## Introduction

In recent years, consumers have begun showing care for the environment and preferring eco-friendly products and services (Nimse et al., 2007). Such concerns and awareness about the environment have created eco-friendly consumption called 'green consumerism'(Moisander, 2007). Moreover, understanding the consumers' attitudes towards green products is pivotal for marketers. In the past, several studies on consumer purchase intention and behavior towards a wide range of green products have been done in the context of developed countries (Ha & Janda, 2012; Kalafatis et al., 1999; Kun-Shan & Yi-Man, 2011). However, very few studies (Biswas & Roy, 2015; Khare, 2015) have focused on consumer reactions to eco-friendly products in the context of Vietnam as a developing country.

According to Ajzen & Fishbein (1977), a product as a bundle of attributes and consumers' preference for these attributes may be diverse. Regarding eco-friendly products, such product attributes should

include a significant achievement in reducing the environmental impact and being recyclable, biodegradable, ozone-friendly, renewable, reusable, etc.(Morris et al., 1995). In other words, eco-friendly products are products that do not harm the environment whether produced, used or disposed of. Therefore, the consumption of these products allows a significant reduction in environmental pollution. Companies, in recent years, have been trying to meet consumers' growing environmental concerns with the introduction of a wide range of green products (Kangun et al., 1991). Currently, business organizations have understood that meeting necessary requirements is not sufficient, they must create their own competitive advantage in the market and that it is the only way to maintain their market in the future. Moreover, because consumers are more socially aware, companies must serve and satisfy their customers' unique desires and needs in a relaxed state as a guarantee for the long run of their business.

Vietnam is a vital market in Southeast Asia with a population of 96 million (General Statistics Office Of Vietnam, 2019). Despite the global trade downturn, Vietnam economy continued to expand by 6.97 % in 2019 (*Bloomberg Markets, 2019*). Rapid population growth and economic development are associated with environmental costs including doubling carbon dioxide, rising sea levels, and the presence of more storms and floods over the last decade (*World Bank, 2019*). The Vietnamese Government and social organizations therefore have made significant efforts to improve environmental awareness through environmental policies, environment management, and education. In addition, manufacturers and retailers of eco-friendly products have strengthened their green purchasing strategy. As a result, Vietnamese people generally show concerns about the environment (Nguyen et al., 2018). However, they also show the lack of opportunities and ability to practice sustainable consumption (de Koning et al., 2016).

This current study aims to investigate potential factors that help Vietnamese consumers to be aware of eco-friendly products and willing to pay more for them. The results of this study will enable the design of effective marketing programs and marketing campaigns aimed at creating favorable conditions for Vietnamese consumers to buy environmentally friendly products.

## Literature Review

*The Theory of Reasoned Action (TRA)*

The Theory of Reasoned Action (TRA), developed by Fishbein and Ajzen (Ajzen & Fishbein, 1975; Fishbein & Ajzen, 1980), addresses the impact of cognitive components, such as attitude, social norms, and intentionson behaviors. According to this theory, an individual'sattitude towards a certain behavior and norms representing their perceptions of other people's views on that behavior will determine their purchase intentions, which may lead to behavioral performance. Aperson's attitude to an action towards an actis decided by that person's beliefs about that behavior. In addition, a person follows a subjective standard for an action defined by that person and his or her belief in that attitude (a person's subjective norm towards a behavior is determined by that person's beliefs about that attitude)(Ajzen & Fishbein, 1975). Researchers using the TRA as a behavioral intention framework should be able to predict the performance of any voluntary action unless the intentionshifts betweenassessing andimplementing the behavior. Researchers should also be able to anticipate

whether a behavior will occur. However, a choice among alternative behaviors was not included (Ajzen & Fishbein, 1975).

Therefore, TRA was adopted to identify factorscorrelatingwith Vietnamese customersto buy green products. Six key drivers of attitude towards buying eco-friendly products mentioned in this research include:
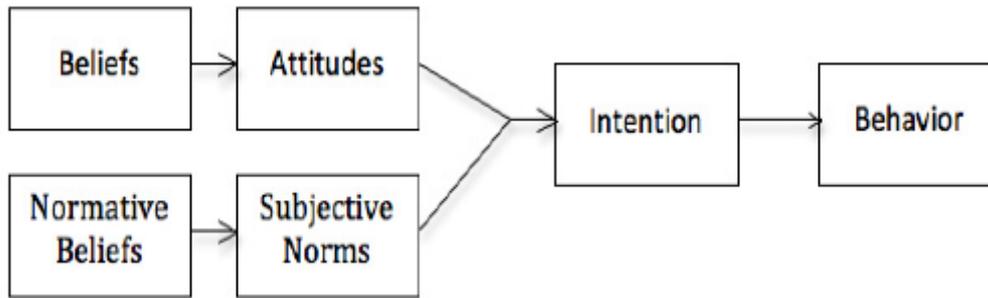


Figure 1: *The Theory of Reasoned Action (TRA)*

***Environmental concern*** is defined as 'strong attitude for protecting the environment' by (Crosby et al., 1990).It can be a good starting point to understand the receptiveness of green movement in a country, examineconsumers' viewson environmental issues and how these views are reflected in their green purchases(Chan and Lau, 2000). Concerns about the environment are fundamental to environmental research (Hines et al., 1987) and it is an important factor in the decision-making processof consumers (Diamantopoulos et al., 2005). Consumerswith a higher level ofinterest in the environment may result in some eco-friendly purchases. High environmental concernslead to more chances of buying eco-friendly products (Kalafatis et al., 1999). However, very few studies have shown that environmental concerns significantly influence consumer's attitudes towards eco-friendly products and services (Hartmann & Apaolaza-Ibáñez, 2012), For example, the findings of Lee et al., (2014) showed a significant positive impact of environmental concern on green purchasing behavior as well as good citizen behavior on the environment.

***Personal norms*** are attached to the self-concept and experienced as a sense of moral obligation to perform a specific behavior (Schwartz & Howard, 1984; Wiidegren, 1998). Behavioraladjustment is controlled by internal rather than external processes (Kallgren et al., 2000) with personal norms at least to some extent stemming from complex reasoning and reflectregardless of social expectations (Thøgersen & Crompton, 2009). It has been shown, as an example, that compliance with personal norms is related to feelings of pride, while non-compliance with personal norms is related to guilt (Onwezen et al., 2013). In an environmental context, studies have shown that folks who feel an ethical obligation to guard the environment also are more likely to intend on reducing personal car use (Nordlund & Garvill, 2003), to intend on using public transportation (Bamberg & Möser, 2007) or to get organic food products (Thøgersen & Ölander, 2006).

***Satisfaction***can be linked to product quality. The best quality of a product satisfies consumers (Kotler & Keller, 2009). Quality relates to performance and ultimatelyto customer satisfaction. Then fromthe satisfaction, the customer is more willing to repeat purchases (Zeithaml et al., 1996). In

recent years, consumers are looking for products with high quality and that advocate social and environmental values (Chang & Fong, 2010). Their explanation indicates crucial points such as satisfaction with the quality of green products, the performance of other attributes and satisfaction with the accessibility or availability of the store, decision-making experience, and pre-purchase experience having a positive or negative impact on the consumers in the near future.

***Word of mouth (WOM)*** refers to "an informal, person to person communication between a perceived non-commercial communicator and a receiver concerning a brand, a product, an organization" (Anderson, 1998, p.5). Many researchers argue that the WOM communication process is one of the most powerful forces in the market-place (Mowery et al., 1996) because informal information from WOM communication is thought to have a strong influence on consumers' evaluation of products future purchasing decisions (Richins, 1987). Indeed, eco-friendly products are not the exception of the WOM promotion to target consumers and affect their attitudes towards the purchase of green products. In our study, we also want to test the hypothesis that family and friends may influence consumers in their decisionto buy green products.

***Willing to pay*** is Willingness to pay a price premium (WTP) which is defined as "the excess price a consumer is willing to pay for a brand over comparable products" (Netemeyer et al., 2004,p.?). The reduction of the perceived purchase risk may be a benefit for which a consumer is willing to pay a higher price. Furthermore, Mandese(1991) indicated that "the emerging green market does not necessarily indicate that consumers would attempt to purchase environmentally friendly products for higher prices". Indeed, even green consumers are also quite pricesensitive.

***Attitude*** is "a cognitive process involving positive or negative valences, feelings, or emotions" by the AMA. Base on psychological sense, attitude is explained as a "tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor" (Eagly & Chaiken, 1993, p.1). In terms of the consumer behavior approach, M. Solomon et al.(2012, p.?) defined the attitude as "a lasting, general evaluation of people (including oneself) objects or issues". Attitude is an important part of the study of consumer behavior. Indeed, it was presentedin an entire chapter in Consumer Behavior: A European perspective book(A. A. Solomon et al., 2010, p. 274-307). Many theories have been constructed on attitudes. As the consumption of green product has become a hot topic, many studies have been doneon the attitudes towards green products.

***Intention*** refers to an indication of a person's willingness to perform a behavior. Intention is governed by attitudes, subjective norms, and perceived behavioral control (Kalafatis et al., 1999). According to Ajzen & Fishbein(1975), behavioral intention signifies the extent to which someone is willing to attempt, and the amount of effort the person is planning to exert so as to perform a particular behavior. Certainly, for buying behavior, buying intent is defined as an individual's willingness to buy an item (Raza et al., 2019).In this study, the attitude structure was included in the model. Actual use was measured in terms of the actual reasons theconsumers use or purchase green products.

Basing on the aboverelevant literature, the following hypotheses were proposed:

***H1:*** *Environmental concern among Vietnamese consumers significantly influences their attitude towards buying eco-friendly products.*

*H2: Personal norms among Vietnamese consumers significantly influences their attitude towards buying eco-friendly products.*

*H3: Satisfaction among Vietnamese consumers significantly and positively influences their attitude towards buying eco-friendly products.*

*H4: Word of mouth among Vietnamese consumers significantly and positively influences their attitude towards buying eco-friendly products.*

*H5: Willing to pay among Vietnamese consumers significantly and positively influences their attitude towards buying eco-friendly products.*

*H6: Attitudes among Vietnamese consumers significantly and positively influences on buying eco-friendly products.*

*H7: Eco-friendly products significant and positive relationship exists between the purchase of green products and the actual purchase of eco-friendly Products.*

## Data and Methodology

**Data Collection**

The research is conducted in the Mekong Delta, Vietnam from March 20th, 2020 to August 25th, 2020. A questionnairewith 29 items aiming at investigating/ measuring eight variables is used for data collection. The questionnaire was delivered directly to participants and e-version designed on Google Forms was sent to participants via email and some social networks such as Zalo and Facebook. A totalnumber of 261valid responses gained from bothdirect and online surveyswere used for statistical analysis.

*3.2. Methodology*

The measurement of research issues  was adapted from (Wang & Shiqiang, 2011).A five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) was employed for the questionnaire to considerifVietnamese customers were willing to buy eco-friendly product as well as their attitudes towards it. In other words, a quantitative research method was applied to determine whether the independent variables (i.e. Environment concern, Personal norm, Satisfaction, Word of mouth, Willing to pay) significantly affect dependent variables (attitude to purchase, behavior of eco-friendly products). The data gained from the questionnaire were subjected to the statistical package for the social sciences (SPSS 22) for processing and analyzingin terms of frequencies, mean, standard deviation, skew, and kurtosis. Regarding this, data were analyzed using multiple correlation analysis to relate the importance of all experimental variables. In the prediction of dependent variables, the advantage of the multiple regressions may be a better prediction from multiple predictors (Sekaran & Bougie, 2016). Besides, multiple regressions can avoid counting on one predictor and may avoid non-optimal combinations of predictors. The research employs factor analysis (EFA) to evaluate the influence of levels of the determinants on consumers' attitudes to green product purchase intention of Vietnamese customers. SPSS statistics are also chosen fordata analysis in this study.

Based on the TRA, the following theoretical model is suggested: Dependent variable: Attitude (AT) and purchase intention (PI). Independent variables: Environment concern (EC), Personal norm (PN), Satisfaction (SA), Word of mouth (WOM), and Willing to pay (WTP)

**Results and discussion**

**Demographic profile of respondents**

From the results of 261 respondents, the number of survey responses from women was higher than men with 57.1% of the former (149 respondents) and 42.9% of the latter (112 respondents, see Table 1). Most of the respondents belong to the age group 25-34(account for 41%) and the remaining 26,8% were 35-44. The majority of respondents are employees (account for 75.1%) whileunemployed people account for a small proportion of 3.1%; and the rest are students (17.2%)and retirees (4.6%). In terms of income, 46.4% of the participants have middleincomeand the remaining 53.7% are low income whilehigh income is only 0,4%. (See Table 1)

**Table 1.** Demographic details of the respondents

|  | Frequency | Percentage |
|---|---|---|
| **Gender** | | |
| Male | 112 | 42.9% |
| Female | 149 | 57.1% |
| **Age (year old)** | | |
| 18-24 | 57 | 21.8% |
| 25-34 | 107 | 41.0% |
| 35-44 | 70 | 26.8% |
| 45-54 | 18 | 6.9% |
| $\geq 55$ | 9 | 3.4% |
| **Status** | | |
| The Employed | 196 | 75.1% |
| The unemployed | 8 | 3.1% |
| Students | 45 | 17.2% |
| Retirees | 12 | 4.6% |
| **Income** | | |
| Yes | 208 | 79.7% |
| No | 53 | 20.3% |
| **Income level** | | |
| Low-income | 139 | 53.3% |
| Middle-income | 121 | 46.4% |
| High-income | 1 | 0.4% |

Source: Computed by the Author.

**The overall personal experience of Vietnamese consumers on eco-friendly products**

The results show that the percentage of consumers who bought eco-friendly products once a week or more frequently than less than once a month is quite similar, with 55% and 45%, respectively. In

both cases, women boughtsignificantly more green products than men with 29.12% compared to 26.43% and 27.58% compared to 16.87%. This means that women are more interested in green products than their counterparts(See Table 2).

**Table2:** Frequencyof buying eco-friendly products in the last 3 months

| | **Gender** | Buy eco-friendly product | |
| --- | --- | --- | --- |
| | | Frequency | Percent |
| Once a week or more often | Male | 69 | 26.43% |
| | Female | 76 | 29.12% |
| Less than once a month | Male | 44 | 16.87% |
| | Female | 72 | 27.58% |
| Total | | 261 | 100 |

Source: Computed by the Author.

**Table 3:** Purchasing of eco-friendly productsin the last 3 months of Male

**Male = 112**

| | **Food** | | **Health care/cosmetic products** | | Cleaning products | | Other household products (e.g: bulbs etc) | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | Frequency | Percent | Frequency | Percent | Frequency | Percent | Frequency | Percent |
| The less purchased | 9 | 8% | 8 | 7% | 9 | 8% | 12 | 11% |
| Tend to purchased | 30 | 27% | 29 | 26% | 26 | 23% | 33 | 30% |
| Neutral purchased | 37 | 33% | 23 | 21% | 34 | 31% | 33 | 29% |
| Purchased | 25 | 22% | 28 | 25% | 25 | 22% | 27 | 24% |
| The most purchased | 11 | 10% | 24 | 21% | 18 | 16% | 7 | 6% |
| Total | **112** | **100** | **112** | **100** | **112** | **100** | **112** | **100** |

**Table 4:** Purchasing of eco-friendly productsin the last 3 months of Female

**Female = 149**

| | Food | | Health care/cosmetic products | | Cleaning products | | Other household products (e.g: bulbs etc) | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | Frequency | Percent | Frequency | Percent | Frequency | Percent | Frequency | Percent |
| The less purchased | 22 | 15% | 10 | 7% | 9 | 6% | 23 | 15% |
| Tend to | 38 | 25% | 24 | 16% | 25 | 17% | 26 | 18% |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| purchased | | | | | | | | |
| Neutral purchased | 31 | 21% | 40 | 27% | 53 | 36% | 37 | 25% |
| Purchased | 41 | 28% | 40 | 27% | 35 | 23% | 40 | 27% |
| The most purchased | 17 | 11% | 35 | 23% | 27 | 18% | 23 | 15% |
| Total | **149** | **100** | **149** | **100** | **149** | **100** | **149** | **100** |

Two above tables 3 and 4 show detailedinformationaboutthe frequency of buying eco-friendly products from two genders in this study. Both men andwomen were alike about the frequency of buying eco-friendly products of various types such as food, health care/cosmetic products, cleansing products, and other household products. Of the fouritems, both sexes at the level of tend to purchase or neutral purchase with the percentage from 26% to 36%, which is the highest ratio for all goods identified by gender. Similarly, the lowest rate of consumption of health care/cosmetic products and cleansing productsaccounted for 7% to 8% of the lowest buying level in both men and women, while that percentage on food was 8% at the lowest buying levelfor men and 11% at the highest buying level for women ; and that percentage on other household products accounted for 6% at most bought for men and 15% at least and bought the most for women.

**Measurement model: Reliability and Validity**

Initially, Confirmatory Factor Analysis (CFA) was applied on the theoretical framework with an aim to checkthe validity of the information. From the initial CFA findings, it was identified that value of CFA fit indices represented an adequate model fit ($\chi2$= 661.080, $\chi2$/df= 2.009, GFI=.858, TLI=.912, CFI=.924, IFI=.924, RMSEA= 0.062). To measure the internal consistency among items, Cronbach's Alpha was used. In social psychological research, a value above 0.7 is acceptable (Hair et al., 1998). The study shows adequate reliability, as value ranges from 0.685 to 0.912. Construct reliability was measured using composite reliability. The value ranges from 0.757 to 0.967, which shows that all value exceed the recommended level of 0.6 and above(Bagozzi & Yi, 1988). Furthermore, convergent validity and discriminant validity were also assessed. Convergent validity was measured using load factor, the average variance was extracted. The value of thefactor loading of all items were above the recommended level of 0.6 (ranges from .0.601 to 0.837) as suggested by Chin et al. (1997). The value of average variance extracted (AVE) was close to 0.5 and higher (Fornell & Larcker, 1981). Table 5 provides the value of reliability and validity.

**Table5:** Measurement Model: Reliability and Validity

| Contructs | Factor loading | SMC | Cronbach's α | CR | AVE |
|---|---|---|---|---|---|
| *Attitude (AT)* | | | | | |
| AT1 | 0.685 | 0.639 | | | |
| AT2 | 0.753 | 0.586 | 0.835 | 0.813 | 0.595 |
| AT3 | 0.865 | 0.347 | | | |
| *Environmental Concern (EC)* | | | | | |
| EC1 | 0.715 | 0.488 | | | |

| | | | | | |
|---|---|---|---|---|---|
| EC2 | 0.707 | 0.474 | 0.788 | 0.824 | 0.593 |
| EC3 | 0.787 | 0.274 | | | |
| EC4 | 0.726 | 0.395 | | | |
| **_WTP_** | | | | | |
| WTP1 | 0.841 | 0.651 | | | |
| WTP2 | 0.871 | 0.606 | 0.894 | 0.884 | 0.718 |
| WTP3 | 0.830 | 0.663 | | | |
| **_Personal norm (PN)_** | | | | | |
| PN1 | 0.685 | 0.452 | | | |
| PN2 | 0.673 | 0.463 | 0.789 | 0.757 | 0.510 |
| PN2 | 0.780 | 0.324 | | | |
| **_WOM_** | | | | | |
| WOM1 | 0.799 | 0.534 | | | |
| WOM2 | 0.721 | 0.619 | 0.848 | 0.830 | 0.621 |
| WOM3 | 0.839 | 0.457 | | | |
| **_Satisfaction (SA)_** | | | | | |
| SA1 | 0.908 | 0.765 | | | |
| SA2 | 0.912 | 0.758 | 0.938 | 0.935 | 0.828 |
| SA3 | 0.910 | 0.763 | | | |
| **_Eco-friendly Purchase Intention (EfPI)_** | | | | | |
| EfPI1 | 0.697 | 0.435 | | | |
| EfPI2 | 0.690 | 0.442 | 0.790 | 0.760 | 0.514 |
| EfPI3 | 0.762 | 0.354 | | | |
| **_Actual Purchase of Eco-friendly Product (ApEP)_** | | | | | |
| ApEP1 | 0.894 | 0.700 | | | |
| ApEP2 | 0.898 | 0.762 | | | |
| ApEP3 | 0.890 | 0.780 | | | |
| ApEP4 | 0.897 | 0.614 | 0.913 | 0.967 | 0.808 |
| ApEP5 | 0.905 | 0.599 | | | |
| ApEP6 | 0.910 | 0.443 | | | |
| ApEP7 | 0.901 | 0.579 | | | |

Note: One item from attitude (ATT2) and one from environmental concern (EC5) were removed from the analysis due to low factor loadings.*- SMC- Squared Multiple Correlation (squared value of correlation between the constructs), C.R- Composite Reliability, AVE-Average Variance Extracted, AVE calculated as $\Sigma$ SMC/ ($\Sigma$SMC+ $\Sigma$standard measurement error).

Table 6provides the value of discriminant validity. A factor correlation below 0.8 indicates adequate discriminant validity. Furthermore, the square root of AVE of each construct was found higher than its correlation value, which also ensures discriminant validity (Chin, 1998). All in all, the theoretical model represents an adequate validity (convergence and discrimination) and reliability.

**Table6:** Correlations among variables

| | EC | WTP | PN | WOM | SA | EfPI | ApEP | AT |
|---|---|---|---|---|---|---|---|---|
| Environmental Concern (EC) | —— | | | | | | | |
| Willing to Pay (WTP) | -.17** | —— | | | | | | |
| Personal Norm (PN) | .29** | -.14* | —— | | | | | |
| Word of Mouth (WOM) | .17** | -.10 | .49** | —— | | | | |
| Satisfaction (SA) | .36** | -.22** | .20** | .16* | —— | | | |
| Eco-friendly Purchase Intention (EfPI) | .28** | -.15* | .57** | .49** | .25** | —— | | |
| Actual Purchase of Eco-friendly Product (ApEP) | .09 | -.06 | .39** | .28** | .14* | .13 | —— | |
| Attitude (AT) | .48** | -.26** | .47** | .47** | .38** | .54** | .32** | —— |
| Mean | 3.876 | 3. 453 | 3.994 | 4.167 | 4.295 | 4.116 | 3.349 | 4.028 |
| Std. Deviation | 0.744 | 1.122 | 0.771 | 0.767 | 1.059 | 0.766 | 0.982 | 0.823 |

Source: Computed by the Author.

## Exploratory factor analysis (EFA)

Factor analysis is then made for the group of four constructs: attitude, purchase intent, environmental concerns, personal norms, satisfaction, word of mouth, willing to pay, and buy eco-friendly productsand controlled on availability and perceived consumer effectiveness, with extraction method of Principal Axis Factoring and rotation method of Promax. The item named ApEP 2 "I want to preserve the earth" was deleted due to unqualified values. After running 2 times of exploratory factor analysisfor this group and deleting 1 unsatisfactory item, the final resultsare presented below.

**Table 7:**Results of the EFA

| Items | Description | Components | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| **ApEP 5** | If I do not purchase, people will judge me | 0.857 | | | | | | | |
| **ApEP 7** | I was satisfied with most of eco-friendly products I bought | 0.826 | | | | | | | |
| **ApEP 4** | I feel trendy/fashionable when I purchase eco-friendly products | 0.824 | | | | | | | |
| **ApEP 6** | I purchase eco-friendly products on unplanned decision in the supermarket | 0.789 | | | | | | | |
| **ApEP** | I like eco-friendly products | 0.746 | | | | | | | |

| **3** | | | | | |
|---|---|---|---|---|---|
| **ApEP 1** | Buying green products helps me build a good image | 0.718 | | | |
| **ApEP 2** | I want to preserve the earth | Deleted | | | |
| **ApEP 3** | I am always satisfied with my decision when choosing to buy  X | | 0.916 | | |
| **SA1** | I am completely satisfied with X | | 0.912 | | |
| **SA2** | X offers exactly what I expect from a company | | 0.907 | | |
| **WOM 2** | I have recommended  X  to many people | | | 0.873 | |
| **WOM 1** | I would recommend X to my friends | | | 0.855 | |
| **WOM 3** | If my friends were planning to use similarity, I would tell them to use  X | | | 0.714 | |
| **WTP 1** | It is acceptable for me to pay more money for groceries that are packaged in an environmentally friendly way. | | | | 0.902 |
| **WTP 3** | I feel proud to have environmentally friendly packaged products in my house though they are more costly than conventionally packaged products. | | | | 0.900 |
| **WTP 2** | I would be willing to spend more money to buy products that are less harmful to the environment | | | | 0.891 |
| **EC3** | I create a special effect to buy paper and plastic products that make from recycled materials. | | | | 0.802 |
| **EC4** | I have switched products for ecological reasons | | | | 0.774 |
| **EC2** | When I have a choice between two equal products. I buy/purchase the one less harmful to other people and the environment. | | | | 0.703 |

| | | | |
|---|---|---|---|
| **EC1** | Mankind was created to rule over the rest of nature. (Items were reserve scored during analysis) | 0.659 | |
| **AT2** | If I had a choice, I would buy particularproducts that use biodegradable plastic in packaging. | 0.743 | |
| **AT1** | I willbe willing to pay for the products that picked up and recycled for other uses. | 0.700 | |
| **AT3** | I would buy products from a lesser knowncompany if they were biodegradable. | 0.691 | |
| **PN1** | Personal norms | | 0.805 |
| **PN2** | I feel obligated to protect the environment whenever possible | | 0.736 |
| **PN3** | I should do what I can to conserve natural resources | | 0.644 |
| **EfPI3** | I would buy eco-friendly packaging products in the near future | | 0.847 |
| **EfPI2** | I plan to buy eco-friendly packaging products | | 0.662 |
| **EfPI1** | I intend to buy eco-friendly packaging products because they are more environmentally friendly | | 0.590 |

*4.5 Structural model: Good of fit statistic, modeling comparisons and hypotheses testing*

**Table 8:** Criteria for measurement model fit

| Criteria | Requirements | Proposed Theoretical Framework |
|---|---|---|
| **CMIN/df (Chi-square/df)** | $2 \leq CMIND/df \leq 5**; \leq 3*$ | 2.009 |
| **GFI (Good fit index)** | $\geq 0.9**; \geq 0.8*$ | 0.858 |
| **TLI (Tucker & Lewis index)** | $\geq 0.9$ | 0.912 |
| **CFI (Comparative fit index)** | $\geq 0.9$ | 0.924 |

| RMSEA (Root mean square error approximation) | ≤ 0.8 | 0.062 |
|---|---|---|
| **R square** | > 0.5 | 0.518 |

(Source: Wheaton et al (1997); Tabachnick&Fidell (2007); MacCallum, Browne & Sugawara (1996); Bentler&Bonett (1980); Hair et al (1998); Joreskog (1969); Carmines &Mclver (1981); Chin & Todd (1995), Byrne (2001))

After running CFA and checking modification indices to improve Chi-square value by correlating within-factor errors (e6 and e5; e4 and e3; e17 and e18; e17 and e20), the model now is considered suitable fordata collected.Specifically, Chi-square/df = 2.009 (< 3), GFI = 0.858 (> 0.8), TLI = 0.912 (> 0.9), CFI = 0.924 (>0.9) and RMSEA = 0.062 (≤ 0.8). In addition, all the standardized regression weights are greater than 0.5, and all P-value are equal 0.000 (< 0.05). They are all acceptable, which indicates the convergence validity of the measurement model.

**Table 9:**Hypothesis testing

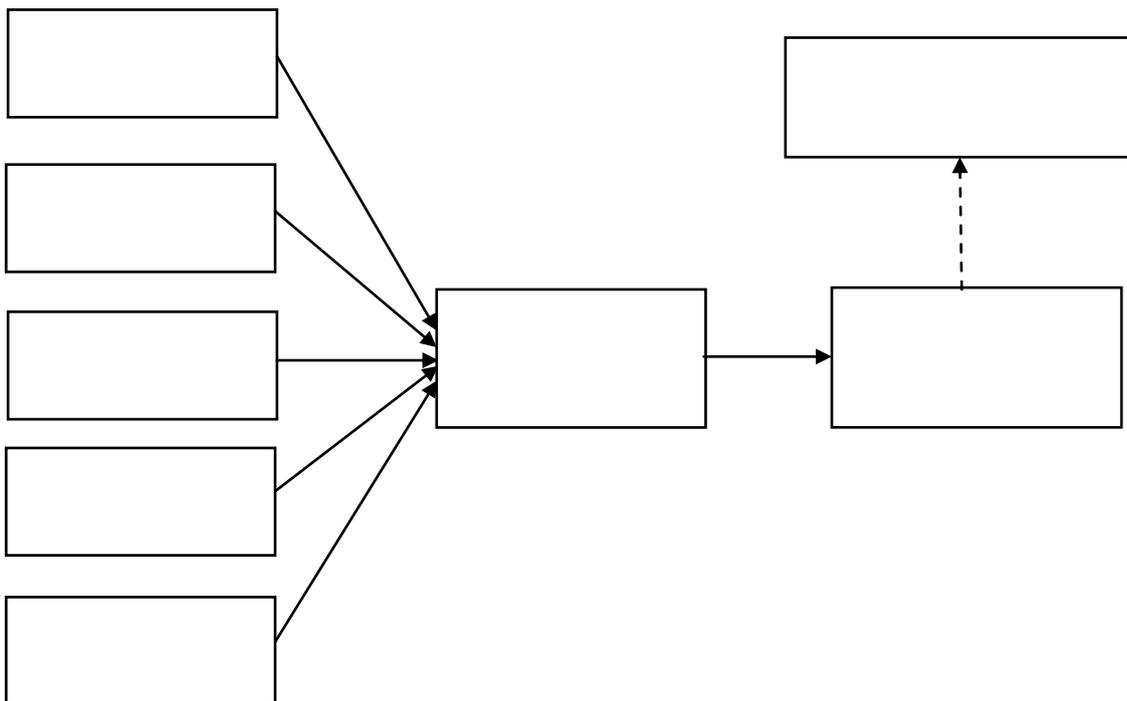| Path description | Hypothesis | Unstandardized Path Estimates | P-value | Results |
|---|---|---|---|---|
| Environmental Concern ⟶ Attitude | $H_1$ | $0.465^{***}$ | 0.000 | Supported |
| Personal Norms⟶ Attitude | $H_2$ | $0.257^{**}$ | 0.002 | Supported |
| Satisfaction ⟶ Attitude | $H_3$ | $0.097^{*}$ | 0.022 | Supported |
| Word of Mouth⟶ Attitude | $H_4$ | $0.298^{***}$ | 0.000 | Supported |
| Willing to Pay⟶ Attitude | $H_5$ | $- 0.115^{**}$ | 0.002 | Supported |
| Attitude ⟶ Eco-friendly Purchase Intention (EFPI) | $H_6$ | $0.565^{***}$ | 0.000 | Supported |
| Eco-friendly Purchase Intention (EFPI)⟶ Actual Purchase of Eco-friendly Product (APEP) | $H_7$ | $0.238^{*}$ | 0.035 | Supported |
| Observations | 261 | | | |
| Anova test (sig.) | 0.000 | | | |
| R-square | 51.8% | | | |

Significant at * P < 0.05; ** P < 0.01; ***P<.001; CMIN=661.080, df= 329; χ2/(df)= 2.009; GFI=0.858;

IFI=0.924; CFI=0.924; RFI=0.839; TLI=0.912; NFI=0.860; RMSEA=0.062.

The Table 9 shows the results regarding the hypotheses given. All variables of the proposed theoretical frameworksuch as Environment concerns (*β= 0.465, p <.001*) and Word of Mouth (*β= 0.298, p <.001*), and Willing to pay (*β= -0.115,p <.01*) significantly related to consumer's attitudes towardsbuying eco-friendly products, which supported the hypotheses H1, H4, and H5, respectively. The additional constructs included in the TRA. Personal Norm (*β= 0.257, p <.01*) and Satisfaction

($\beta= 0.098, p <.05$) also had a significant positive influence on attitude towards the intention to purchase green products, that supported the hypotheses H2 and H3. Moreover, a significant positive influence of Attitude ($\beta= 0.565, p <.001$) and Purchase Intention ($\beta= 0.565, p <.001$) was reported on attitude towards green products which supported the hypothesis H6. Interestingly, the results indicated that the intention to purchase environmentally friendly showed a significant positive effect on the actual purchase of eco-friendly Products ($\beta= 0.238, p <.05$). Therefore, H7 was supported.

The proposed theoretical framework along with the β value is mentioned in Figure 2.



Notes: Significant at * P < 0.05; ** P < 0.01; ***P<.001

*Figure 2:*The relationship between study constructs and consumer's attitudes to intention to purchase eco-friendly products

**Conclusion**

The results suggested that the attitude towards the intention to buy eco-friendly products can be predicted by factors related to the environment, personal norms, satisfaction, word of mouth, as well as consumers' willingness to pay. Environmental concerns had the most significant and positiveinfluence on consumer attitudes and intentions which shows that young people in Vietnam (aged24-34)were interested in the issues related to the environment when buying products like their counterparts in developed countries. The results appear to be valid(Hartmann &Apaolaza-Ibáñez, 2012; Mostafa, 2009)in determining the vital role of environmental concerns in the choice of eco-friendly behavior.

Our findings also showed that the importance of word of mouth had a significant and positive effect on consumers' attitudes and intentions to purchase green products. Indeed, our results showed that WOM was reallyimportant, the respondents in our survey indicated that they pay more attention to the opinions and recommendations from their family members and friends when buying eco-friendly products.Similar toWOM, personal norms also showed a significant influence on consumers' attitudes and intentions when purchasing green products.

Besides, we recognized  the fact that consumers were satisfied with buying eco-friendly products and their satisfaction was positively correlated (even if the Pearson coefficient is a little low, we  accept because  $*P < 0.05$).Yazdanifard& Mercy(2011) showed that points such as green product satisfaction for quality performance have a positive or negative impact on consumers in the near future. Indeed,  researchers have previously stated that today people were looking for quality and products of  environmental values (Chang & Fong, 2010).

We figured outa positive relationship between WTP and attitudes towards green product purchasing intent. It also means that consumers are willing to pay extra/high prices for green products. However, a common beliefwas found amongparticipants regarding their consumption behavior. Itcan be explained that the more consumers are not willing to pay an extra price for a green product, the more they will believe green products are not affordable, and that leads to the unwillingness to pay more.

## Recommendations

It is obvious that the attitude of Vietnamese consumers, driven by their environmental concerns, has an important impact on their environmental purchasing intent. Therefore, manufacturers and marketers should fully grasp to shift the priority of this fact to marketing strategies when launching their products into the researched market. Specifically, apart fromthe Government, manufacturers and marketers, on the one side, should propagandize to target consumers about the serious environmental problems that human beings are facing through various marketing campaigns; and on the other side, can convey the positive effects of using such eco-friendly products on the environment. These propaganda activities will allow building environmental concerns in Vietnam.

On the other hand, since Vietnam has been recognized as a collective society,it is not really surprising to seek out that personal norms have a significantly positive impact on consumer attitudesand intentions of buying eco-friendly products. The Vietnamese government has been trying to encourage people to participate inthe consumption of eco-friendly products. Therefore, manufacturers and marketers of green products can take this advantage of such support or funding for those public government's green campaigns. Through public green campaigns by the government, consumers will easily perceive that practicing on environmental protection is extremely necessary and highly appreciated while manufacturers and marketers expect to see a practical resolution via an actual action like using eco-friendly products.

According to Gürhan-Canli& Maheswaran(2000), people living in collectivist societies consider word of mouth to be acommon regular channel because of  the high contact rates among those people. On this basis, manufacturers and suppliers need to create opportunities for the current consumers to have great experiences with their products and givea positive confirmation on them.

Positive word-of-mouth effects from existing consumers are essentially seen as a condition of the intrigue for purchase intention of other perspective ones.

Finally, although satisfaction effect has the weakest impact on the attitude and intention to buy, it can still have the effect of encouraging consumers who intend to buy eco-friendly products. Besides, willingness to pay is negatively related to the attitude and intention to buy green products. Therefore, managers and marketers should consider this issue to limit negativeimpacts and encourage positive effects.

## Limitations and futureperspectives

In the process of collecting and analyzing data, we encountered a number of difficulties because of the quantity of our sample being likely small (261 respondents). This affects obtaining more relevant data that may create a lack of reliability. Moreover, our sample mainlyincludes young people aged 18-34;soour findings are valuable for this age group but not for people over 34. Additionally, it would be more interesting to have more unemployed and retired people participating in thisstudyin case there are differences between those groups with employed people for example. Furthermore, this study collected data from the residents within a fence delimited by the Mekong delta, our findings and outcomes would bemore diverse with more diverseparticipants.

Hopefully, more in-depth studies on the durable and non-durable eco-friendly products could be paramount with the comparison of conventional products which would assist the managers grasping the views of the consumers on two different product categories. Indeed, making decision from the consumers for different product categories is different enough. In fact, when people are willing to buy a durable product and when they are willing to buy a non-durable product such as clothes or even a car are not the same.

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