

PERSONAL FACTORS AFFECTING INTENTIONS OF SAFE VEGETABLE PURCHASES IN DANANG CITY, VIETNAM

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ARTICLE HISTORY:

Received: 22-Nov-2019
Accepted: 11-Feb-2020
Online Available: 25-Feb-2020

Keywords:

Safe vegetables,
consumer,
intentions,
Danang,
Vietnam

ABSTRACT

This study determined the relationships between personal factors and intentions of safe vegetable purchases in Danang City, Vietnam. The study added two new factors, communication and awareness of responsiveness of supermarkets, which are correlated to purchase intentions of consumers. Consumer behaviours was surveyed in Danang City from April to June 2019, and analysed by a multivariate regression model. The result indicated that the intentions of safe vegetable purchases were associated with several factors such as perception of benefit - environment, perception of quality, subjective norms, awareness of supermarket responsiveness, barriers and habits. Unlike previous studies, this study found that the awareness of supermarket responsiveness and active communication of customers is statistically strongly correlated to safe vegetable purchases in Da Nang City. The findings suggested some implications for policy makers, authorities, and consumers in promoting behaviors of purchasing safe vegetables.

Contribution/ Originality

This study focused on personal factors influencing intentions of safe purchases which relied on the intended behavior theory which was added with two new factors awareness of responsiveness of supermarkets and active communication and information sharing. The findings are important information for consumers and authorities to take suitable actions that helps promoting behaviors of purchasing safe vegetables.

DOI: [10.18488/journal.1005/2020.10.1/1005.1.9.22](https://doi.org/10.18488/journal.1005/2020.10.1/1005.1.9.22)
ISSN (P): 2304-1455/ISSN (E):2224-4433



How to cite Luong Tinh, Doan Gia Dung, Bui Quang Binh and Bui Thi Mai Truc (2020). Personal factors affecting intentions of safe vegetable purchases in Danang City, Vietnam. Asian Journal of Agriculture and Rural Development, 10(1), 9-22.

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1. INTRODUCTION

In recent years, the issue of food-safety in general and safe vegetables in particular has attracted the attention of the whole society on the mass media. In fact, a large number of consumers concern about their health, environment and food safety problems. Consumer behaviors are affected by health awareness, perception of quality, food-safety concerns, brand trust, and prices (Dickieson *et al.*, 2009). However, there are a lot of barriers for safe vegetable consumption such as it is difficult to buy safe vegetables with clear origins, customers have a lack of trust in safe vegetables, and enterprise labels are the only identification method for safe vegetables. In addition, the price difference between safe vegetables and regular vegetables, even though it is not significantly large, is still a barrier. Some people worry that they have to pay a higher price for regular vegetable which is safety-labelled. *Ajzen's theory of Planned Behavior* (1991) was applied to study the relationship between attitudes toward behaviors, subjective norms and behavioral control in various fields such as tourism, mobile commerce, ATM service and consumption; (Ajzen, 1991; Leong *et al.*, 2013; Shamsollahi, 2013; Stanford, 2006; Wee *et al.*, 2014) also stated that this theoretical model could be supplemented with new factors that influence intentions of behaviors as long as the new factors contribute to the explanation for the intention of that behavior. However, there have not been many studies on the application of the Expanded theory of Planned Behavior to explain the factors affecting the consumers' intention of buying safe vegetables in Danang City, Vietnam so far. The results of this study not only helped to explain the subjective causes but also considered these factors as an important basis for local authorities to have appropriate policies aiming at promoting behaviors of safe vegetables consumption.

2. THEORETICAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

2.1. Theoretical framework

Ajzen (1991) stated that attitude, subjective norms and behavioral control were three important factors explaining consumers' intention. Attitude is the degree of positive or negative that an individual evaluates the performance of the behavior. Subjective norms refer to an individual's perception towards the social pressures that govern them to or not to do a certain behavior. Behavioral control reflects how easy or difficult it is to perform the particular behavior. According to Ajzen (1991) behavioral intention includes motivational factors that may have effects on an individual's behavior. These factors indicate the level of an individual's willingness or effort to perform a given behavior.

The intention of buying safe food is the ability and the willingness of the individual to devote his preference to safer food rather than regular food in shopping considerations (Rashid, 2009). In practice, consumers' intentions of safe food purchases are also influenced by their habits and services of supermarkets and stores, as well as the level of their communication and information sharing. Therefore, the theoretical model can be supplemented by incorporating new factors that influence the behavioral intention, provided that the new factors are meaningful in explanation for the intention of that behavior (Ajzen, 1991). Recent studies also showed that the role of communication influenced consumer buying intentions (Thanh, 2017; Yaakop *et al.*, 2013). Rogers (1995) indicated the features of communication were creating and sharing information to understand each other. Therefore, the fact that consumers actively share information among friends, via social network or supermarkets' advertising will have an impact on the intention to purchase goods.

In this study, consumers' intentions of safe vegetable consumption refer to consumers' willingness or effort to buy safer vegetables than regular ones for next shopping. This intention is probably influenced by a range of factors including perceived factors (benefits, risks), subjective norms, ability to control behaviors, expected income, product price and the degree of proactive

communication and sharing of consumer information. The factor “intentions of safe vegetable purchases” were measured by: recommending others to buy safe vegetables, continuing to buy safe vegetables, paying more to buy safe vegetables.

2.2. Hypotheses development

2.2.1. Communication

According to Rogers (1995) the characteristics of communication were creating and sharing information to understand each other. The information element refers to the ability to provide effectively relevant information to consumers, the amount of information that consumers receive from advertising or word of mouth. According to Yaakop *et al.* (2013) social media influenced every stage of consumers' decision-making processes, as well as influenced general opinion and attitude formation. The study by Thanh (2017) found the impact of social media advertising on consumers' buying intentions in Can Tho City, Vietnam. Therefore, the fact that actively sharing information by communicating with friends via social networking sites or sharing advertisements of safe vegetable business will have impacts on the intention of good purchases.

Hypothesis: There is a positive relationship between communication and the intentions of safe vegetable purchases in Da Nang City.

2.2.2. Awareness of quality

People aware that organic foods have higher nutritional values because the reproduction and growth of organic foods like chicken is being done naturally without involving the use of any hormones, and chemicals (Shaharudin *et al.*, 2010) Similarly, Truong *et al.* (2012) also found that consumers valued the quality and nutritional values of safe food in Vietnam. However, the perception of the quality of organic products is not statistically significant in explanation for Malaysian consumers' intentions to buy products (Wee *et al.*, 2014).

Hypothesis: Quality awareness is positively related to the intentions of safe vegetable purchases in Da Nang City.

2.2.3. Health awareness

Health concerns were important reasons for the intentions to buy organic food in Thailand, especially when consumers concerned about residues from synthetic chemicals used in agriculture (Roitner-Schobesberger *et al.*, 2008) Similarly, Janssen (2018) showed that “healthiness and naturalness” had a significant positive impact on organic budget share in Germany. There are literature reviews on the positive role of health-related factors on safe or organic food consumption. (Baker *et al.*, 2004; Botonaki *et al.*, 2006; Lusk and Briggeman, 2009; Van and Verhoef, 2015).

Hypothesis: Health awareness is positively related to the intentions of safe vegetable purchases in Da Nang City.

2.2.4. Safety awareness

Safe food is deemed to be an option for consumers who are concerned about food safety and quality (Kulikowski *et al.*, 2011). According to Krissoff (1998) consumers buy organic products because they are aware of the fact that these are safer, healthier, more environmentally friendly products than conventional alternatives. In fact, food safety has been highlighted as an incentive to purchase organic food. Padel and Foster (2005), Shaharudin *et al.* (2010) and Williams and Hammitt (2001) found that consumers believe organic produce poses less risk to consumers than conventional products.

Hypothesis: Safety awareness is positively related to the intentions of safe vegetable purchases in Da Nang City.

2.2.5. Environmental awareness

Arvola *et al.* (2008) showed that consumers tend to be aware of the positive environmental implications of organic farming, and this perception explains more of their intention to buy organic food of consumers in three countries Italy, Finland, England. Similarly, a study by Aman *et al.* (2012) interviewed 384 consumers of different organic food in Malaysia. Their findings showed that understanding of the environment and concerns about the environment influenced significantly the intentions to buy safe food.

Hypothesis: Environmental awareness is positively related to the intentions of safe vegetable purchases in Da Nang City.

2.2.6. Awareness of enterprise responsiveness

The responsiveness of businesses and supermarkets refers to the distance to the supermarket that saves time, safe and spacious parking of safe food store, convenience in organic food purchases (availability of organic food, food store locations) are found to have impacts on customers' attitudes towards organic foods or actual organic food purchases (Chen, 2007; Li *et al.*, 2007).

Hypothesis: The awareness of supermarket responsiveness is positively related to the intentions of safe vegetable purchases in Da Nang City.

2.2.7. Subjective norms

Subjective norms refer to an individuals' senses of social pressure that governs them to or may not perform certain behaviors (Beedell and Rehman, 2000). Nguyen (2011) also showed that there is a difference in the influence of subjective standards on the intention of buying safe food from consumers in the South and the North of Vietnam. This is explained by the differences between climate and culture, of the two regions at the two ends of Vietnam.

Hypothesis: The subjective norms are positively related to the intentions of safe vegetable purchases in Da Nang City.

2.2.8. Barriers

The unavailability of safe food is the main barrier to the intention to buy safe food in India (Paul and Rana, 2012). Price barrier is considered as a factor preventing people from consuming organic foods in empirical studies (Fotopoulos and Krystallis, 2002; Botonaki *et al.*, 2006).

Hypothesis: Awareness of barriers is negatively associated with the intentions of safe vegetable purchases in Da Nang City.

2.2.9. Habit and experience

Increasing awareness of health, safety and the environment has changed the habit of consumption towards healthier, highly-quality food. In addition, the increase in per capita income of Vietnam over the years has also encouraged people to spend more on safe food. Higuchi *et al.* (2016) and Verbeke and Vackier (2005) also found that in addition to subjective attitudes and standards, the habits and experiences of fish eating in the past are factors that positively influence the intention of fish consumption in the Peruvian city of Lima.

Hypothesis: Habits and experiences are positively related to the intentions of safe vegetable purchases in Da Nang City.

3. RESEARCH METHOD

3.1. Data collection

The data were collected by delivering structured questionnaires to participants from early April to the end of June 2019. The convenience sampling was applied that aimed at achieving large enough sample size to ensure the suitability for a quantitative study. The choice of survey participants relied on criteria such as age, career, gender, and income. The subjects of the survey were consumers at different supermarkets and stores in Da Nang City to ensure the incisivness of the samples.

The measurement model consisted of 43 observed variables, the size of a necessary sample was $n = 215$ (43×5) (Hair, 2006). To achieve the size of proposed sample, 250 questionnaires were given out. There were 250 responses collected, including 40 invalid responses and 210 satisfactory ones. The data were entered and analyzed on SPSS 16 software.

3.2. Data analysis method

All observed variables are measured on the Likert scale with five degrees, from (1) strongly disagree to (5) strongly agree. The collected data were assessed in reliability scale with an internal consistency measurement - Cronbach's Alpha. Any components that do not comply with the reliability requirements would be rejected. Next, the study used Exploratory Factor Analysis (EFA) for the observed variables to explore the structure of components related to consumers' intentions of safe vegetable purchases in Danang City. To analyze EFA, the authors used the method of Principal Component Analysis with Varimax rotation to extract elements with Eigenvalue greater than 1. Finally, linear regression was used to identify the relationship between independent variables and the dependent variable.

4. ANALYSIS RESULTS

4.1. Describe respondent information

To explore and develop the scale, the study conducted interviews and direct surveys with questionnaires from early April to the end of June 2019. Convenience sampling method is aimed at achieving a large enough sample size to ensure the suitability for a quantitative study. As a result, 250 responses were collected, including 40 invalid responses and 210 satisfactory ones. Some descriptive statistics are presented in Table 2. The majority of participants are between 30 and 55 years old (65%). There are 46 respondents are under 30 years old (accounting for 21.9%) compared to 26 people in over 55-year old group (accounting for 12.4%). A large proportion of the sample earns a high school education level (10th - 12th grade) and college or post-college level (52.9% and 21.9% respectively). Percentage of people obtained 9th grade and below was much lower at 23.3%. There are 99 people has an income from 5 million VN Dong to less than 7 million VN Dong (accounting for 47.1%) whereas this figure was 87 people (41.4%) for 3 to less than 5 million VN Dong income group and just 10 correspondents (4.8%) for less than 3 million VN Dong group. The proportion of participants earning high income (above 7 million VN Dong) was pretty low at 14 individuals (accounting for 6.7%). On gender, a large percentage of participants were female (account for 81%) compared to 19% for male.

Table 1: Interpretation of variables in the research model

Gender	Number of observations	Percentage (%)
Male	40	19.0
Female	170	81.0
Age		
Under 30	46	21.9
From 30 - 55	138	65.7
Over 55	26	12.4
Education		
From grade 1 - 5	4	1.9
From grade 6 - 9	24	11.4
From grade 10 - 12	111	52.9
Intermediate	25	11.9
College, undergraduate, graduate	46	21.9
Outcome		
Less than 3 million VND*	10	4.8
From 3 to less than 5 million VND	87	41.4
From 5 to less than 7 million VND	99	47.1
From more than 7 million VND	14	6.7

Source: adapted from consumer survey data in 2019

* 1 USD = 23,151.31 VND

4.2. Reliability scale assessment with Cronbach's Alpha reliability coefficient

The Cronbach's Alpha reliability coefficient is often employed to measure how consistent the items in the scale are and ensure to consist of at least three latent variables for each factor. The study tested each component before conducting factor analysis. A variable with a correlation coefficient - total lower than 0.3 was excluded. The criteria for selecting a scale is equal or higher than 0.6 value of Cronbach's Alpha (Nunnally and Burnstein, 1994). Cronbach's Alpha result revealed there were 3 excluded latent variables (QUA1: I find safe vegetables a good taste; BAR5: I think the place of selling safe vegetables is quite far; INT5: I am going to buy safe vegetables because of environmental benefits).

Table 2: Results of Cronbach's alpha coefficient analysis

Concepts	Cronbach's Alpha
Communication	0.891
Quality awareness	0.866
Safety awareness	0.882
Environmental awareness	0.828
Awareness of enterprises' response	0.789
Subjective norms	0.838
Barries	0.894
Habits	0.839
Intention	0.819

Source: Results based on consumer survey data, 2019

4.3. Exploratory factor analysis (EFA)

The analysis result showed that after removing entrusted variables, the remaining 33 variables were used for EFA twice and extracted into seven groups with the total variance at 70.95%. This figure implied these seven factors explained 70% of the variance in the data with eigenvalue factor values larger than 1. The load factor of all latent variables was greater than 0.5, therefore, all observed variables are important, research concepts reach the convergent values. KMO coefficient is 0.876

(satisfied because it is larger than 0.5) that implied the appropriateness of factor analysis and Bartlett test reached statistical significance (sig. < 0.05).

The second EFA result showed that the observed variables “Communication”, “Quality Awareness”, “Subjective Norms”, “Barriers”, “Habits”, and “Awareness of Enterprises’ Responsiveness” remained with the original elements. However, two latent variables namely ENV1, ENV3 (environmental awareness), three safety awareness latent variables (SAF1, SAF2, SAF3) and three health awareness latent variables HEA1, HEA2, HEA3 were combined into one factor, named as “benefit - environment” (BEN). This proved that although awareness of benefit and awareness of the environment is two theoretical concepts, but they are one concept in practice. Similarly, risk perception and supply-demand perception are two concepts but they can be merged into one factor. The authors measured the values of Cronbach's Alpha to determine the internal consistency of new factors and saw that these seven factors were satisfied in terms of scale reliability.

After running EFA, the research hypotheses were adjusted as follows:

Hypothesis H1: There is a positive relationship between communications with the intentions of safe vegetable purchases in Da Nang City.

Hypothesis H2: Quality awareness is positively related to the intentions of safe vegetable purchases in Da Nang City.

Hypothesis H3: Awareness of environmental benefits is positively related to the intentions of safe vegetable purchases in Da Nang City.

Hypothesis H4: Awareness of supermarket response is positively related to the intentions of safe vegetable purchases in Da Nang City.

Hypothesis H5: The subjective norms are positively related to the intentions of safe vegetable purchases in Da Nang City.

Hypothesis H6: Awareness of barriers is negatively related to the intentions of safe vegetable purchases in Da Nang City.

Hypothesis H7: Habits are positively related to the intentions of safe vegetable purchases in Da Nang City.

Furthermore, exploratory factor analysis for the dependent variable with five latent variables was also conducted. The result indicated KMO coefficient is 0.836 and Barlett coefficient with significance level of 0.000 (satisfied because below 0.5), extracted variance is 70.01% and all latent variables had load factor greater than 0.5. Thus, the factor “the intention of buying safe vegetables” (INT) consisted of five observed variables.

4.4. Linear regression analysis using the least squares OLS method

Before conducting linear regression analysis, the study used Pearson correlation coefficients to quantify the degree of rigidity of linear relationships between variable pairs. The result showed that the seven factors namely COM, QUA, BEN, NOR, BAR, HAB, RES in the model have a linear relationship with the factor “intentions to buy safe vegetables” (INT) at significance level of 1%.

Our regression result of the model affecting consumers’ intention of buying safe vegetables with 7 independent variables was shown at Table 3. The value of F statistic was 65.103 at significant level

of 0.000 (< 0.01) that showed the model was meaningful for explanation the variance in data. The VIF magnification factors only ranged from 1.224 to 1.753 (less than 2) and the Durbin-Watson coefficient was 1.888. This proved that the model has no collinearity and autocorrelation. The standardized residuals based on Histogram and Normal PP Plot obtained the average value that was close to 0 and standard deviation was 0.983 (close to 1), assumption of linear relation (Scatter Plot). The adjusted R^2 coefficient was 0.693 that implied 69% of the variation in the intention of safe vegetable purchases was explained by the independent variables in the research model.

Table 3: Regression results

Model	The coefficient is not standardized		Standardized coefficient	T	Sig.	Multi-collinearity VIF
	B	Standard error	Beta			
Constant	0.800	0.343		2.329	0.021	
COM	0.070	0.032	0.101	2.174	0.031	1.417
QUA	0.148	0.030	0.216	5.015	0	1.224
BEN	0.240	0.034	0.364	7.056	0	1.753
NOR	0.143	0.049	0.128	2.937	0.004	1.248
BAR	-0.178	0.052	-0.166	-3.419	0.001	1.554
HAB	0.175	0.046	0.172	3.839	0	1.327
RES	0.150	0.041	0.159	3.707	0	1.206
Durbin-Watson = 1.888						
Statistic F= 65.139						
Level of significance Sig.F = 0.000						

Source: Results based on consumer survey, 2019

The analysis result showed that the benefit-environment factor ($\beta = 0.364$) has the strongest correlation with the intention of safe vegetable consumption, followed by quality awareness ($\beta = 0.216$), habits ($\beta = 0.172$), barrier awareness ($\beta = -0.166$), Awareness of enterprises' response ($\beta = 0.159$), subjective norms ($\beta = 0.128$) and finally the communication factor ($\beta = 0.101$).

5. DISCUSSION AND IMPLICATIONS

5.1. Discussion

In this study, awareness of benefit - environment was found to be the most important factor explaining the customers' intention to consume safe vegetables in Da Nang city. This result is also consistent with previous research showing that the consumers' perception of the benefits of healthier products than conventional alternatives was one of the most important reasons for a positive attitude towards safe agricultural products (Harper and Makatouni, 2002). Similarly, consumers tend to be aware of the positive environmental significance of organic farming, and this awareness explains consumers' intention to buy organic food in three countries including Italy, Finland, England (Arvola *et al.*, 2008). The result showed that consumers pay much attention to safe food not only for themselves and their families but also for the community. Therefore, it is necessary for supermarkets to emphasize this fact to influence consumers' intention of buying safe vegetables.

The variable of quality awareness is positively related to the consumers' intentions of safe vegetable purchases. The value of beta was 0.216 at significant level which was below 0.05. This figure indicated the more consumers are aware of product quality, the more they intend to buy safe vegetables. This result is also consistent with (Dickieson *et al.*, 2009) findings that showed health concerns, awareness of product quality positively influence the consumers' intention of buying safety products. (Ha and Ha, 2017) indicated that the concern about health and quality of safe vegetables ($\beta = 0.363$) was the factor having the strongest impact on the customers' intention to

buy safe vegetables in Ho Chi Minh city; whereas our study found it has the second largest correlation with dependent variable after the awareness of benefits -environment. This implied consumers need to equip themselves with knowledge of food hygiene and safety, especially women who directly prepare family meals.

Habits were positively related to the consumers' intention of buying safe vegetables. The result with $\beta = 0.172$ and $p < 0.05$ showed that habits is statistically significant for explaining the variance in the consumers' intention of buying safe vegetables. In recent years, along with the process of urbanization, per capita income has significantly increased in Da Nang City (from 41.8 million dong in 2015 to 83.17 million dong in 2018) (The report on the socio-economic situation of Danang City in 2018); thereby people tend to spend more. Especially, consumers who care about their health have also changed their habits of consumption towards good, safe and high-quality foods. This finding was also consistent with (Higuchi *et al.*, 2016) who stated that besides subjective attitudes and standards, fish eating habits in the past have been a positive influence on intentions of fish consumption in Lima, Peru.

Awareness of barriers was meaningful to explain the variation in consumers' intention of buying safe vegetables at significant level of 5%. This is the only factor having a negative correlation with the dependent variable with the value of beta at -0.166. This is also suitable for the fact that consumers who buy safe vegetables today cannot distinguish between safe vegetables and regular vegetables by their senses, and only clue they rely on is labels of enterprises. This finding is similar to those concluded by Botonaki *et al.* (2006) on the role of food quality certification on consumers' food choice. This study showed the fact that customers are skeptical about the reliability of product certification is one of the reasons preventing them from buying organic food. This suggested that the stores and supermarkets in Da Nang City need to focus more on traceability. In addition, the rationale for why consumers are less likely to buy safe food is lack of safe food (Paul and Rana, 2012). In fact, while farmers have to take care of finding customers for their products by themselves, supermarkets struggle to find supplies. Thereby, it is necessary to have a close relationship between farmers and supermarkets.

The responsiveness of a supermarket or an enterprise is positively related to consumers' intention of buying safe vegetables, with the coefficient equal to 0.159 and p-value lower than 0.05. This finding was consistent with the argument that a safe, large parking; possibility to compare prices between different types of goods without spending a lot of time; short distance to the supermarket; or the enthusiasm of employees influence the intention of buying at supermarkets rather than traditional markets; thereby affecting the selection of safe products with clear origin (Chen, 2007; Li *et al.*, 2007). This implies that supermarkets and stores not only pay attention to the quality of products but also to convenience for their consumers whenever they visit their stores or supermarkets.

Subjective norms refer to an individual's perception of social pressure that governs them to or not to perform certain behaviours (Beedell and Rehman, 2000). The analytical result showed that this factor has the coefficient of 0.128 at significant level below 0.05. This finding was relevant to conclusion of Sudiyanti (2009) who stated that besides variables such as attitudes to food safety, awareness of behavioural control, subjective norms are the most important factors in the consumers' intention to buy safe food in Indonesia. Similarly, Tarkiainen and Sundqvist (2005) found that subjective standards influenced the consumers' intention of buying safe food in Finland.

The active participation in communication with society of consumers had positive correlation with the consumer's intention to buy safe vegetables ($\beta = 0.101$ and p-value < 0.05). The result was also consistent with findings of (Yaakop *et al.*, 2013). In fact, the role of information technology made it possible for people to find and share information together. According to the result published by

Global Consumer Insight Survey in 2019, up to 61% of consumers are affected by social networks as making a decision to shop. In addition, consumers' intention to buy safe vegetables is also influenced by information of products and their quality from supermarkets via flyers and websites. This study also revealed the correlation to dependent variable of the fact that consumers actively share information with their friends and relatives, which have never been found in previous studies. This implied that it is necessary for consumers to proactively communicate and share information from advertising of businesses and supermarkets with their friends, via social networks to get information about safe vegetables products.

5.2. Implications

First, consumers currently seriously care about the quality and safety of the products they consume. Therefore, in the future, supermarkets will need to have programs and actions to arouse the sense of consumer health protection. On the other hand, it is necessary to accelerate the application of information technology in product traceability in order to build consumer trust. This can be seen as a key in the competition among supermarkets in the near future. In addition, the local authority needs to regularly introduce programs on food hygiene and safe foods on mass media such as DRT television channel (local television change of Da Nang City), Da Nang newspaper, etc. with various contents about the detrimental effects of using unsafe vegetables or production activities and locations of clean agricultural food store that raises people's awareness of safe vegetables.

Second, the study showed that supermarket responsiveness has a positive correlation with consumers' willingness to buy safe vegetables. Therefore, supermarkets should pay attention to factors such as having a safe, spacious parking lot; or regularly maintaining staff training courses on quality of services.

Third, the analysis showed that the living standard of Danang citizens has many positive changes toward the habits of consumers towards good and safe food. Therefore, in order to ensure the supply for supermarkets, it is necessary to build more cleanly and safe food supply units not only in the city but also in neighbouring areas such as Quang Nam, Hue, Gia Lai, Kon Tum, etc. Besides, promoting to bring safe vegetables products into supermarkets and food stores is a joint responsibility that requires coordination among stakeholders, particularly local authorities.

Fourth, the consumers' active participation in communication in the society increases the consumer's intention of buying safe vegetables. Therefore, supermarkets need to provide complete, clear, accurate and updated product information on their website, which encourages customers to consume some safe food. In addition, consumers themselves must actively obtain and share information with their relatives and friends that contributes to building a safe vegetables consumption community.

Finally, piloted production areas should be built in Cam Le and Hoa Vang District (Da Nang City) that can be promoted with tourism development. This not only creates jobs for farmers but also helps visitors to experience environmentally friendly agricultural production activities, thereby contributing to raising awareness about clean and safe consumption.

6. CONCLUSION

Based on the expanded theory of Planned Behaviour, this study showed that there are seven factors correlated to the consumers' intention of buying safe vegetables in Da Nang city. These seven factors include awareness of benefit - environment; quality awareness; habits; barriers; awareness of enterprises' response; awareness of supermarket responsiveness subjective norms and communication. Among these factors, awareness of benefit - environment is the most important one explaining the intention of using safe vegetables of Da Nang citizens. In addition, we found that

proactive communication and information sharing of consumers have a statistically significant correlated with the intention of safe vegetable consumption. Further investigation needs to be expanded within the provinces of Vietnam to find out new variables and adjust variables that affect consumers' intention of purchasing safe vegetables.

Funding: This study received no specific financial support.

Competing Interests: The authors declared that they have no conflict of interests.

Contributors/Acknowledgement: All authors participated equally in designing and estimation of current research.

Views and opinions expressed in this study are the views and opinions of the authors, Asian Journal of Agriculture and Rural Development shall not be responsible or answerable for any loss, damage or liability etc. caused in relation to/arising out of the use of the content.

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APPENDIX

Factor	Code	Observed variables	Source
Communication	COM1	Often hear about the information of safe vegetables from friends and relatives through social media like facebook	Developed from Rogers (1995)
	COM2	Often hear about the information of safe vegetables thanks to direct contact with friends	
	COM3	Often have a look at the information of safe vegetables on the brochures of a supermarket or a store	
Quality awareness	QUA1	I find safe vegetables have good tastes	Wee et al. (2014); Shaharudin et al. (2010)
	QUA2	I realize the consumption of safe vegetables provides many nutrients	
	QUA3	I am satisfied with the meal including safe vegetables	
	QUA4	In general, safe vegetables have superior quality compared to traditional vegetable	
Health awareness	HEA1	Eating safe vegetables is good for health	Wee et al. (2014); Shaharudin et al. (2010)
	HEA2	Safe vegetables have no preservatives	
	HEA3	Eating safe vegetables is good for our family	
Safety awareness	SAF1	I feel safe when eating safe vegetables	Wee et al. (2014); Shaharudin et al. (2010)
	SAF2	Safe vegetables have no chemicals	
	SAF3	Safe vegetables are less likely to cause food poisoning	
Environmental awareness	ENV1	Safe vegetables are produced in an environmentally friendly manner	Wee et al. (2014); Shaharudin et al. (2010)
	ENV2	Safe vegetables can prevent soil, water and air pollution	
	ENV3	Producing safe vegetables can protect the environment because it has few harmful pesticides	
Subjective norms	NOR1	My parents support and encourage me to buy safe vegetables	Higuchi et al. (2016); Tarkiainen et al. (2005)
	NOR2	My husband/ wife supports and encourages me to buy safe vegetables	
	NOR3	My children support and encourage me to buy safe vegetables	
	NOR4	In general, the people who are important to me support and encourage me to buy safe vegetables	
Barriers	BAR1	I think the price of safe vegetables is quite higher than traditional vegetables	Tarkiainen et al. (2005) Ha and Ha (2017)
	BAR2	I think the safe vegetable category is various.	

	BAR3	I think there is no signal to distinguish which ones are safe vegetables	
	BAR4	I think safe vegetables are sold infrequently and unstable	
	BAR5	I think the place of selling safe vegetables is quite far	
	BAR6	I think the store/ supermarket does not regularly advertise safe vegetables	
	BAR7	I think the local authorities do not regularly propagate the benefits of using safe vegetables	
	BAR8	I do not believe in the quality of safe vegetables from stores or supermarkets	
	BAR9	My income is limited, therefore, it affects the purchase of safe vegetables	
Habits and experiences	HAB1	I have knowledge about safe vegetables	Verbeke and Vackier (2005); Higuchi <i>et al.</i> (2016)
	HAB2	I am used to using safe vegetables	
	HAB3	Eating vegetables is a part of my eating routine	
	HAB4	I ate vegetables at a young age	
Awareness of enterprises' responsiveness	RES1	Employees always listen to all feedbacks from consumers (As consumers complain about high prices, employees always give good responses)	Developed from (Chen, 2007; Li <i>et al.</i> , 2007).
	RES2	Employees express their interests in safe vegetables of consumers (this is good, using these vegetables is safe for your family, it is delicious, giving more advice to consumers)	
	RES3	Safe food markets are clean	
	RES4	Safe food markets have convenient parking lots	
The intention of buying safe vegetables	INT1	I am going to buy safe vegetable products in the near future.	Higuchi <i>et al.</i> (2016) Wee <i>et al.</i> (2014); Shaharudin <i>et al.</i> (2010)
	INT2	I am going recommend my friends to buy safe vegetables	
	INT3	I want to spend more money on safe vegetables for better health	
	INT4	I am going to buy safe vegetables because the producers pay much attention to food safety	
	INT5	I am going to buy safe vegetables because of environmental benefits	
	INT6	I want to eat safe vegetables	