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Intention of the Households in Domestic Waste Classification in Vinh Chau Town, Soc Trang Province, Vietnam

Nguyen Thanh Giao[1], Nguyen Tuan Kiet[2*], Huynh Thi Hong Nhien[1], Son Phuc[1]

[1] College of Environment and Natural Resources, Can Tho University, Campus 2, 3/2 Str., Can Tho City, 900000, Vietnam

[2] School of Economics, Can Tho University, Campus 2, 3/2 Str., Can Tho City, 900000, Vietnam

* Corresponding author's e-mail: ntkiet@ctu.edu.vn

ABSTRACT

The study was conducted to determine the factors affecting the intention of people to segregate garbage in Vinh Chau town, Soc Trang province, Vietnam by surveying 198 households. Cronbach's alpha analysis method, EFA analysis, and linear regression analysis were used in the study. The analysis results of Cronbach's Alpha index, KMO and Bartlett's test showed that the questionnaire data used in the study was highly reliable and were suitable for EFA analysis. The results of linear regression analysis identified three factors including "subjective norm", "control of cognitive behavior" and "perceived level of garbage classification information" that had positive impact on intention of domestic solid waste classification of local people in Vinh Chau town, Soc Trang province, in which "subjective norm" was considered to be the most influential factor on the intention to classify domestic solid waste in the study area. Besides, the intention of the people to segregate the domestic solid waste was highly appreciated, but it has not been widely implemented in the locality. Therefore, the study proposed some governance implications based on the factors affecting the intention of people to classify household solid wastes. In particular, local authorities should pay special attention to propagating and disseminating policies and guidelines on the information of domestic solid waste and implementing a model of waste segregation at source.

Keywords: domestic solid waste, households, intention to segregate garbage, Vinh Chau town, Soc Trang province.

INTRODUCTION

Solid waste has been causing many consequences, affecting all aspects of human life such as polluting soil, water, and air; increasing the burden of health and environmental costs, affecting tourism and aquaculture; and is the cause of many social conflicts (Thang et al., 2019). According to estimates, the world has generated about 1.3 billion tons of domestic solid waste each year and is expected to increase to 2.2 billion tons by 2025 (World Bank, 2012). In Vietnam, the total volume of domestic solid waste generated nationwide from 44,400 tons/day in 2011 has increased to 64,658 tons/day in 2019 (Ministry of Natural Resources and Environment, 2019). To reduce the amount of waste released into the environment requires more participation from the community as well as awareness of the people about the segregation of waste at source and contribution to the recycling and reuse (Dung et al., 2021). It is the participation of these domestic waste generators that will make an important contribution to better waste management.

To gain a deeper understanding of households' participation in waste segregation programs, several previous studies performed various analyses. Researchers found that demographic factors such as socioeconomic background or place of residence (Berglund, 2006; Vicente & Reis, 2008), or the influence of individual characteristics such as education, consequential awareness and ethical standards (Shirahada & Fisk, 2014; Chen & Lee, 2020) lead to behavioral models of waste segregation at source. In addition, policy regulation is one of the greatest external stimuli that determine

the attitude of waste segregation at source (Chen & Lee, 2020). According to Zaikova et al. (2022), households' participation in waste sorting activities can be influenced by a range of factors, including satisfaction, waste collection practices, equipment and convenience, its benefits, the incentives applied for segregation of waste at source, etc. The factors that influence people's behavior in segregation of domestic solid waste can vary from country to country and area.

Vinh Chau town is one of the coastal towns in Soc Trang province, which has great potential for economic development in the sea and coastal areas; it is a very important strategic position in the defense and security of the Soc Trang province. Along with the continuous development of Soc Trang in both speed and scale, quantity and quality, has contributed to the creation of a large amount of domestic solid waste that affects the environment and human health. According to the Thematic Report on the State of Urban Environment in Soc Trang Province in 2019, Vinh Chau town ranked first in the province in terms of daily-life solid waste generated with 199.3 tons/day, equivalent to 72,744.5 tons/year (Soc Trang Province People's Committee, 2019). Moreover, at present, this amount of domestic waste was collected at a relatively low rate, causing many environmental problems. Therefore, one of the most concerning environmental issues of the whole town is the management of domestic solid waste. In particular, waste separation at source is the first step of the management process, playing an important role. According to Zhou et al. (2022), domestic solid waste classification is a scientific management method for effective waste treatment, in order to maximize the use of waste resources, reduce the amount of waste and improve the quality of solid waste management. Therefore, studying the intention of classifying domestic waste of people in Vinh Chau Town, Soc Trang Province is really necessary. Since then, it has contributed to raising people's awareness in environmental protection, compatible with the law on environmental protection passed by the Vietnam National Assembly in 2020.

MATERIALS AND METHODS

Study area

The research data were collected during the period from February 1 to February 7, 2021 in Ward 1 and Hoa Dong commune of Vinh Chau town. Ward 1 is the central area of the town with an area of 13.44 km^2 and a population of 16,827 people with economic activities mainly business – services. Hoa Dong commune is located in the northeast of Vinh Chau town with an area of 47.96 km^2 and a population of 10,783 people with a living activity mainly from aquaculture.

Analytical methods

Sample size selection

In the study, exploratory factor analysis (EFA) and multivariate regression were used. For EFA, sample size is usually determined based on (1) the minimum size and (2) the number of measurement variables included in the analysis. Hair et al. (2014) suggested that to use EFA, the sample size should be at least 50, preferably 100, and the observation/measurement ratio 5:1, meaning that 1 measure requires a minimum of 5 observations. In the study, there are 28 observed variables, so the minimum number of samples should be n = 28×5 = 140. According to Tiger (2017), the minimum sample size for multivariable regression analysis is determined by the formula:

$$n \geq 50 + 8k \quad (1)$$

where: k – the number of independent variables of the model.

In the study, there are 6 independent variables, so the minimum sample size is n ≥ 50 + 8(6) = 98. Therefore, the total minimum sample size needed for the study must be n ≥ 140. In order to obtain the proposed sample results and ensure that the research results are representative of the overall population, 198 questionnaires were surveyed in the study.

Scale to analyze household garbage sorting intention

The scale is built on the basis of relevant theoretical foundations and available scales of scholars around the world. These scales have been studied across many different subjects and countries. In this study, the scale was adjusted to suit the research context of the intention to classify garbage of people in Vinh Chau town, Soc Trang. The scale after correction and addition, setting up the official scale, is detailed in Table 1.

Table 1. Synthesis of scales to analyze the intention to classify garbage

Coding	Observed variables	References
Consequence awareness (H1)		
HQ1	The problem of waste in our country is increasingly polluted and will affect the environment and human health	Vassanadumrongdee et al. (2018)
HQ2	Sorting garbage helps to reduce the warming of the weather	
HQ3	The mixing of bottles, jars and packages containing pesticides and pesticides with domestic waste causes toxic leakage into the environment.	
Garbage sorting attitude (H2)		
TD1	We should pay attention to garbage classification and garbage classification to help protect the environment better	Xu et al. (2017)
TD2	We can set an example for children by doing garbage separation and being aware of environmental protection	
TD3	Garbage segregation can help localities reduce pollution treatment costs	
TD4	I'm very interested in garbage segregation and that allows me to be complete, we should do it	
Subjective norms (H3)		
CQ1	Does your family support garbage segregation?	Xu et al. (2017); Philippsen (2015); Vassanadumrongdee et al. (2018)
CQ2	If your family encourages you to do garbage separation, are you willing to listen to their advice?	
CQ3	If your neighbors encourage garbage separation, are you willing to listen to their advice?	
CQ4	If environmental organizations encourage you to do waste segregation, are you willing to listen to their advice?	
CQ5	Do you want to hear environmental protection programs, press information calling for garbage classification?	
Cognitive behavioral control (H4)		
KSHV1	Do you have enough time to sort the garbage?	Xu et al. (2017)
KSHV2	If you don't have enough time, do you still sort garbage?	
KSHV3	Do you have enough space to sort garbage?	
KSHV4	If there is not enough space, do you still sort garbage?	
Perceived level of garbage classification information (H5)		
TT1	Did you receive knowledge about garbage classification (organic waste, recyclable waste, hazardous waste, ...) from school?	Vassanadumrongdee et al. (2018)
TT2	Did you receive information about garbage segregation from the local municipal authority office?	
TT3	Do you receive information about garbage segregation from the media (TV/radio/press)?	
TT4	Can previous propaganda from the local urban management agency help improve knowledge about waste segregation?	
Feel the inconvenience of sorting garbage (H6)		
BT1	Sorting waste is time consuming and useless	Vassanadumrongdee et al. (2018)
BT2	Garbage classification is too complicated	
BT3	Sorting garbage takes up a lot of space, making it difficult to sort	
BT4	Even if I sort at the source, the garbage collectors will mix the sorted garbage with other garbage	
Intention to sort garbage (H7)		
YD1	I plan to sort the trash out of habit	Vassanadumrongdee et al. (2018)
YD2	I intend to separate the waste if the government provides the equipment	
YD3	I am willing to participate in garbage sorting programs organized by the government	
YD4	I am ready to tell my relatives about my classification experience	

Data analysis

Cronbach's Alpha coefficient is used to evaluate the reliability of the scale, eliminating inappropriate variables in the research process. The observed variables have the Item – Total correlation greater than 0.3 and the acceptable scale reliability coefficient from greater than 0.6 (Wang et al., 2018).

After that, the study continued exploratory factor analysis (EFA), in order to reduce and group variables into factors, to consider the degree of convergence of observed variables by each component and discriminant value. Variables with

factor loading < 0.5 will be excluded. Bartlett's test and KMO index were used to consider the suitability and satisfaction of the factor analysis. According to Shou et al. (2022), the KMO value must satisfy the condition $0.6 \leq KMO \leq 1$. The factor method is carried out according to the method of main factor analysis (Principal Component Analysis) with the factor weight > 0.5 and other factors. Factors must have Eigenvalue > 1 to be retained (Wang et al., 2018).

From the results of factor analysis, the study conducts a linear regression model. Three steps to conduct the analysis are as follows:

1) Checking the correlation between the independent variables with each other and with the dependent variable through the correlation coefficient matrix;
2) Building and testing the regression model:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + + \beta_4 X_4 + ... + \beta_k X_k \quad (2)$$

where: Y – the dependent variable;
β_0, β_1, β_2, β_3, β_4 and β_k – standard Beta coefficients;
X_1, X_2, X_3, X_4, X_k – independent variables (Tho, 2011).

3) Checking for violation of regression assumptions. The analysis in the study was performed using SPSS software.

In the study, the Likert scale was used to assess the level of people's agreement with the proposed views, with the following value ranges (1) 1.00–1.80 being very disagreeable opinion/Very unsatisfied/Very unimportant; (2) 1.81–2.60 expressing disagreement/Dissatisfaction/Not important; (3) 2.61–3.40 indicates No opinion/Medium; (4) 3.41–4.20 indicate Agree/Satisfied/Important and (5) 4.21–5.00 indicate Very Satisfied/Strongly Agree/Very Important (Wang et al., 2018).

RESULTS AND DISCUSSION

Intention to sort garbage

Check the scale by the reliability coefficient (Cronbach's Alpha)

Reliability represents the consistency or stability of the scale, and the reliability coefficient can be used as an indicator of homogeneity (Zhang et al., 2022). The results of the Crobach's Alpha coefficient test on the scales are presented as Table 2.

From the combined results in Table 2, it can be seen that the observed variables of the scale "attitude to classify garbage" with Cronbach's Alpha coefficient of 0.466 < 0.6 do not meet the requirements for reliability. Therefore, all observed variables in this scale need to be removed and not used in exploratory factor analysis (EFA) in the next step. Particularly, the remaining scales of the factors include "Perception of consequences", "Subjective norm", "Control of cognitive behavior", "Level of perception of garbage classification information", "Perception of garbage classification", "receive the inconvenience of garbage classification" and "Intent to classify garbage" both achieved the required Cronbach's Alpha reliability, with the observed variables all greater than 0.3 and the Cronbach's Alpha coefficient of each factor greater than 0, 6. These scales are all within the required range of $0.6 \leq$ Cronbach's Alpha ≤ 0.95, showing that the scale has high intrinsic consistency and good reliability (Zhang et al., 2022). Another study looking at the influence of demographic characteristics on the intention to classify garbage, the Cronbach's Alpha value ranged from 0.826–0.968 and the loading coefficients were all greater than 0.5 (Shen et al., 2019). As reported by Chen & Lee (2020), all scales used in the study have Cronbach's Alpha values greater than 0.6 and range from 0.783–0.929 and all observed variables have coefficients A load above 0.7 shows that each scale is positively correlated with each other and represents the general concept of the same variable (Hair et al., 2017). Through the analysis, it was found that all the observed variables of the scales met the requirements and were used to conduct EFA analysis, except for the variables in the scale "Attitude to classify garbage".

Exploratory factor analysis (EFA)

EFA of independent variables

Exploratory factor analysis (EFA) was used for 20 independent variables, using principal component analysis with Varimax rotation and breakpoints when extracting the factors with Eigenvalues greater than 1. The results of the first EFA analysis show that the KMO coefficient = 0.799 meets the requirements > 0.6 and Bartlett's coefficient has a significance level of Sig. = 0.000

Table 2. Synthetic results of Cronbach's Alpha scale

Observed variables	Scale average if variable removed	Scale variance if variable removed	Correlation Variable - Total	Cronbach's Alpha if variable removed
Consequence awareness - Cronbach's Alpha = 0.663				
HQ1	7.904	2.95	0.368	0.696
HQ2	7.975	3.04	0.484	0.581
HQ3	8.152	1.642	0.642	0.311
Garbage sorting attitude - Cronbach's Alpha = 0.466				
TD1	10.869	2.429	0.547	0.124
TD2	10.702	2.647	0.503	0.193
TD3	11.02	2.528	0.551	0.14
TD4	12.424	3.9	-0.172	0.867
Subjective norms - Cronbach's Alpha = 0.871				
CQ1	16.54	4.889	0.701	0.843
CQ2	16.47	4.951	0.75	0.832
CQ3	16.465	4.93	0.651	0.856
CQ4	16.444	4.898	0.69	0.846
CQ5	16.424	4.946	0.699	0.843
Cognitive behavioral control - Cronbach's Alpha = 0.823				
KSHV1	10.98	4.253	0.637	0.781
KSHV2	11.131	3.983	0.685	0.758
KSHV3	10.949	4.231	0.64	0.78
KSHV4	10.985	4.117	0.624	0.787
Perceived level of garbage classification information - Cronbach's Alpha = 0.857				
TT1	11.54	5.295	0.808	0.771
TT2	11.48	5.266	0.831	0.761
TT3	11.449	5.02	0.858	0.746
TT4	10.848	7.52	0.349	0.939
Feel the inconvenience of sorting garbage - Cronbach's Alpha = 0.811				
BT1	7.813	5.523	0.791	0.695
BT2	7.753	5.537	0.791	0.695
BT3	7.571	5.333	0.707	0.724
BT4	7.106	6.126	0.348	0.918
Intention to sort garbage - Cronbach's Alpha = 0.833				
YD1	12.323	3.54	0.646	0.797
YD2	12.419	3.29	0.764	0.743
YD3	12.308	3.422	0.67	0.786
YD4	12.283	3.767	0.575	0.826

< 0.5 (correlation among variables) confirmed that the above-mentioned analytical method is appropriate (Zhang et al., 2022). However, the analysis results of the factor rotation matrix in Table 3 show that the TT4 variable does not display the results in the rotation matrix table when performing factor rotation. As can be seen, TT4 has a load factor smaller than the selected standard load factor of 0.5. Therefore, this variable must be removed and the EFA analysis is carried out a second time.

The second exploratory factor analysis (EFA) was performed on 19 independent variables. As a result, the KMO index is 0.796 > 0.5, satisfying the condition $0.6 \leq KMO \leq 1$ and Bartlett's test result is 2271.898 with the significance level Sig.= 0 < 0.05. This proves that the variables have good correlation with each other and the data used for factor analysis is completely appropriate (Wang et al., 2018; Zhou et al., 2022). Besides, according to Rathore & Sarmah (2021), when the KMO coefficient and Bartlett's test satisfy the condition,

Table 3. Factor Rotation Matrix

Observed variables	1st factor rotation matrix					2nd factor rotation matrix				
	Loading factor					Loading factor				
	1	2	3	4	5	1	2	3	4	5
CQ5	0.8					0.801				
CQ2	0.791					0.794				
CQ4	0.781					0.78				
CQ3	0.743					0.746				
CQ1	0.736					0.739				
TT2		0.933					0.941			
TT3		0.924					0.922			
TT1		0.878					0.878			
TT4								-		
BT1			0.905					0.906		
BT2			0.902					0.903		
BT3			0.847					0.845		
BT4			0.524					0.538		
KSHV3				0.8					0.804	
KSHV2				0.778					0.773	
KSHV1				0.754					0.752	
KSHV4				0.723					0.724	
HQ3					0.85					0.872
HQ2					0.798					0.805
HQ1					0.569					0.557
Eigenvalue	5.877	2.62	2.282	1.579	1.403	5.731	2.596	2.265	1.557	1.385
Total variance extracted (%)	29.387	42.485	53.892	61.786	68.802	30.161	43.823	55.744	63.937	71.225

it shows that there is enough common variance in the correlation matrix between factors, for factor analysis. The results of the second factor analysis of Varimax rotation according to PCA with 19 observed variables are detailed in Table 3, showing that a total of 5 main factors were extracted and explained for 71.225% of the total variance. In EFA, the comprehensive explanation of over 50% suggests that the factors retained after extraction are ideal, the model of EFA analysis is appropriate (Zhang et al., 2022).

EFA of dependent variables

EFA analysis was performed on 4 observed variables on the dependent variable scale. The results of factor analysis exploratory factor EFA for the dependent variable with the coefficient KMO = 0.771, satisfying the condition $0.6 \leq KMO \leq 1$. This proves that the data used for factor analysis is completely appropriate. Bartlett's test result is 313.893 with significance level Sig.= $0 < 0.05$. Therefore, the variables are correlated with each other and satisfy the conditions of factor analysis for the dependent variable (Jiang et al., 2018).

The results of EFA analysis of the dependent variable (Table 4) show that the method of factor extraction PCA with Varimax rotation allows extracting one factor with 4 observed variables and the total variance extracted is 66.811%, satisfying the condition of greater than 50%, and Eigenvalue = 2.672 >1. The factor loading coefficients of the observed variables are all greater than 0.5. Therefore, the scale is satisfactory; the variables measuring the intention to classify the people's garbage are accepted and used in the next analysis. The dependent variable will receive the average value of the corresponding observed variables for the next analysis.

Table 4. Results of factor analysis for EFA of dependent variable

Component Matrix[a]	Loading factor
YD2	0.884
YD3	0.823
YD1	0.807
YD4	0.751
Eigenvalue	2.672
Total variance extracted (%)	66.811

Linear regression analysis

Spearman's correlation analysis

To examine the linear correlation relationship between the independent and dependent variables, the Pearson correlation coefficient test was used (Noufal et al., 2020). Table 5 shows that there are 19 scales divided into 6 observed variables and the correlation results between the dependent variable and the independent variable indicate that the dependent variable is the intention to classify garbage and the 5 independent variables is the intention. Subjective level, Perceived level of garbage classification information, Perceived inconvenience of garbage sorting, Cognitive behavioral control, and Perception of consequences all have Sig correlation coefficients (2-tailed) ≤ 0.01 should conclude that they have a close relationship with each other. This is enough to include the variables in the next step of the analysis.

The research results also show that the Spearman correlation coefficient between the independent and dependent variables has no r = 0 and ranges from -0.265 to 0.550 and is significant at Sig.<0.01. It confirmed that there is a close correlation between the independent and dependent variables (Dung & Cuc, 2021; Tang et al., 2022). The Subjective Norm (CQ) scale has the highest correlation with r = 0.550.

Regression analysis of factors affecting the intention to classify garbage

On the basis of the scale of factors affecting the intention to classify garbage, the linear relationship has been considered; the study continues to use the regression analysis method, to clearly see the relationship between the factors affecting the intention of the households in the garbage classification in Vinh Chau town, Soc Trang province. To test the concordance between the independent and dependent variables, the study uses linear regression with one-pass input method (Enter). Thus, components HQ, CQ, KSHV, TT, BT are 05 independent variables and YD is a dependent variable included in the regression analysis.

On the basis of Table 6, the first regression results found that the independent variable HQ (Perception of consequences) and variable BT (Perceived inconvenience of garbage classification) have Sig. > 0.05, which is 0.393 and 0.087, respectively. Therefore, the study proceeds to remove these two independent variables to run the second regression.

From the results of the second regression, it shows that the independent variables CQ, TT, KSHV ensure statistical significance with 95% confidence (Table 7). All 3 components Subjective norm, perceived level of garbage classification information and Cognitive behavioral control

Table 5. Spearman correlation analysis results

Parameter	YD	CQ	TT	BT	KSHV	HQ
YD	1					
CQ	0.550**	1				
TT	0.407**	0.482**	1			
BT	-0.265**	-0.262**	-0.208**	1		
KSHV	0.469**	0.460**	0.205**	-0.294**	1	
HQ	0.290**	0.304**	0.169*	-0.123	0.345**	1

Note: ** Correlation is significant at the level p < 0.01.

Table 6. Results of 1st regression analysis

Model	Unstandardized coefficients		Standardized coefficients	*t*	Sig.	Multicollinearity
	B	SE	Beta			VIF
Constant	1.166	0.338	-	3.447	0.001	-
CQ	0.469	0.072	0.422	6.487	0.000	1.459
TT	0.079	0.038	0.119	2.056	0.041	1.152
BT	-0.077	0.045	-0.097	-1.718	0.087	1.105
KSHV	0.207	0.059	0.224	3.511	0.001	1.408
HQ	0.041	0.048	0.05	0.856	0.393	1.162

Note: Dependent variable – YD.

Table 7. Results of 2nd regression analysis

Model	Unstandardized coefficients		Standardized coefficients	*t*	Sig.	Multicollinearity
	B	SE	Beta			VIF
Constant	0.919	0.265		3.471	0.001	
CQ	0.49	0.071	0.44	6.851	0.00	1.413
TT	0.084	0.038	0.126	2.181	0.03	1.145
KSHV	0.238	0.056	0.258	4.231	0.00	1.275

have a positive impact on the intention of people to classify garbage in Vinh Chau town, Soc Trang province. The order of effects of factors on the intention of people to classify garbage in Vinh Chau town, Soc Trang province in descending order is as follows Subjective norm (β = 0.44) > Controlling receiving behavior knowledge (β = 0.258) > Perceived level of garbage classification information (β = 0.126). As reported by Jiang et al. (2018), two factors that have a positive and meaningful impact on people's intentions, were identified, namely Attitude and Perceived Behavioral Control. In addition, factors such as personal interest, social awareness, risk perception, concern for the environment and concern for consequences were also recorded as significant influencing factors on domestic solid waste classification behavior (Rathore & Sarmah, 2021). From that, it can be concluded that hypotheses H3, H4, and H5 are accepted in the research model. The linear regression equation is determined by the following formula:

1) The unnormalized regression equation has the form:

$$YD = 0.49*CQ + 0.084*TT + \\ + 0.238*KSHV + 0.919 \quad (3)$$

2) The standardized regression has the form:

$$YD = 0.44*CQ + 0.126*TT + 0.258*KSHV \quad (4)$$

In the normalized regression equation, the coefficients β are determined as follows: (1) β_1 = 0.44 means that, in terms of other factors unchanged if the subjective norm factor (CQ) is constant, increasing by 1 unit increases the expected value of the garbage sorting intentions of people in Vinh Chau town, by 0.44 units; (2) β_2 = 0.126 shows the significance, in the condition that other factors are constant, if the element of perception of garbage classification information (TT) increases by 1 unit, it will increase the expected value of the ideas. The decision to classify garbage of people in Vinh Chau town, increased by 0.126 units; and (3) β_3 = 0.258 indicates significance, other factors being held constant, if the cognitive behavioral control factor (KSHV) increases by 1 unit, it increases the expected value of the discriminatory intentions to classify garbage of people in Vinh Chau town by 0.258 units.

Significance of multivariable regression model for garbage classification intention

The study was carried out with the aim of identifying and measuring the components that affect the intention of people to segregate garbage in Vinh Chau town, Soc Trang province. The final regression analysis results recorded three out of six independent variables: Subjective norm, Level of perception of garbage classification information, Control of perceived behavior affecting people's intention to classify garbage. The research results also found that the intention of people to classify garbage was quite high, ranging from 4,025 to 4,162 according to the Likert scale. This can also be explained by the fact that the garbage classification model has been known to the people but has not been implemented in the locality.

The study aimed to contribute to the diversity of theoretical bases and richness in the research model of garbage classification in general and in the field of environment in particular, especially the people in the study area. In addition, the research results are also a reference for the students majoring in the environment. The study also has practical significance, helping the Environmental Administrators of the Department of Natural Resources and Environment of Soc Trang province in general and Vinh Chau town in particular to identify the influencing factors and the degree of impact on the intention of people to separate garbage to have the right direction for local development in association with environmental protection and raise public awareness about garbage classification.

Proposing governance implications

From the research results, it is shown that there are 3 components affecting the intention of people to classify garbage in Vinh Chau town, Soc Trang province according to different levels of impact. The study relies on the coefficient β and the mean value of the observed variables and the reality of households in the study area to propose some governance implications as follows:

Component "Subjective norm"

The analysis results show that the people's level of agreement is relatively high with the views given in the variable "Subjective norm", with the average value ranging from about 4.05 to 4.16 according to Likert scale. In addition, the research results also show that "subjective norm" is the factor with the greatest influence (β = 0.440) on the community's intention to classify garbage in the group of 3 influencing factors in the area of waste classification. Therefore, the more subjective norm factors of the people are increased, the more they will promote the intention to classify garbage of the community in Vinh Chau town, Soc Trang province.

For the observed variables of subjective norm, it is possible to see the effects among family members, neighbors, local authorities and environmental organizations. In order to increase the intention of garbage classification through subjective norm, the study proposes the following governance implications:

For relationships in the family, the subjects that need to pay attention to the impact on the intention of garbage classification are women and children. Forms of propaganda through the local Women's Union will easily access the given policies. For children, it is advisable to propagate and apply garbage segregation programs at schools. In fact, some high schools in the town have applied some models of waste classification, especially plastic. At Nguyen Khuyen High School, it is strictly forbidden for students to bring plastic cups or plastic boxes to school, so many students have a habit of using items that can be stored for a long time, such as stainless steel bottles or biodegradable materials such as paper cups, cloth bags. At Vinh Chau Ethnic Minority Boarding Secondary & High School, the model of separate collection of plastic waste is also applied to sell scrap to raise funds to support disadvantaged students. Since then, students' awareness of environmental protection has been formed as well as the practical meaning of waste classification.

For community-relationships, the objects of propaganda will be those close to the people, easily grasping the people's thoughts, aspirations and psychology. The objects for its best propagation are the mass organizations in the hamlet, such as the Women's Union, the Veterans' Association and the heads of the hamlets.

For local authorities the recommendations are to diversify forms of propaganda and dissemination of policies, guidelines and laws on information on domestic solid waste to all subjects, especially on environmental days, such as World Environment Day (June 5), Clean Water Day (March 22) to restore a nature-loving, environment-friendly lifestyle, as well as develop mass movements to participate in environmental protection, reward individuals with good achievements in environmental protection work. For environmental organizations, there should be specific programs and actions for people to see the benefits of environmental protection. The program should be applied in a practical way.

Component "Controlling cognitive behavior"

"Conceptual behavioral control" is the second influencing factor (β = 0.258) on the intention of people to segregate garbage in Vinh Chau town, Soc Trang province. The analysis results show that the majority of people relatively agree on the views given in the variable "Controlling Cognitive Behavior", with the average value ranging from 3,551 to 3,732 on the Likert scale. Therefore, once the community's cognitive behavior control is improved, it will contribute to promoting the intention of people to segregate garbage in Vinh Chau town. For that reason, in order to increase the intention to classify garbage through the factor of "Controlling cognitive behavior", the study proposes a number of governance implications as follows: Local authorities need to provide a way to classify which is easy, convenient, does not take up much time and space. According to the provisions of the Law on Environmental Protection 2020, ordinary solid waste is classified into 3 main groups: organic waste, solid waste that can be recycled and reused and the remaining solid waste.

Component "Level of perception of garbage classification information"

The research results showed that the level of agreement of the people was quite high on the points given in the element of perception of garbage classification information, with the average

value ranging from 3,566 to 3,657 and having the third degree of influence (β = 0.126) on the intention of people to segregate garbage in Vinh Chau town, Soc Trang province. Therefore, when the perceived level of information is well understood by the people, it will contribute to promoting the intention of people to segregate garbage in the study area. Therefore, in order to increase the intention to classify through the factor "The perception of garbage classification information", the study proposes the following managerial implications:

Promote communication and education to raise the community's awareness and responsibility for environmental protection. It is possible to introduce regulations such as not dumping garbage indiscriminately, propaganda through group meetings of the hamlet or cluster; propaganda through loudspeakers in the daily news of communes and wards usually at 6 am and 5 pm in the day, creating garbage bins with clear, beautiful, attractive and distinguishable colors and symbols. Types of waste are separated according to easy-to-follow diagrams and chain images, from sorting waste paper, glass, metal, artificial plastic, fabric and especially organic waste; propaganda and advice activities are also represented by diverse and attractive propaganda posters.

Propaganda materials recommended to the general public are as follows: posters, leaflets, bins and bags containing all kinds of waste are presented and decorated depending on the objects recommended by the propaganda, and especially colors must be used and attractive images, easy to understand. The materials to contain collected and sorted waste must be manufactured by companies according to designs, colors, and printed words in each country, region/locality. For example, if the bin for collecting organic waste is green, the bag is also green, with large letters and recognizable symbolic drawings. The cost of the bags must be cheap, suitable for the public's ability to pay. Some countries also give free organic waste bags to people to make them more excited to participate. Mass movements to participate in environmental protection should be developed, whereas individuals with good achievements in environmental protection work should be rewarded.

CONCLUSIONS

The study proposed 7 scales with 28 observed variables to determine the factors affecting the intention to classify household waste of people in Vinh Chau town, Soc Trang province. Most of the data used in the study have high reliability and are suitable for exploratory factor analysis through Cronbach's Alpha coefficient, KMO and Bartlett's test. The results of linear regression analysis have finally identified 3 independent variables that strongly determine the intention to classify garbage of people in Vinh Chau town, including "subjective norms", "controlling behavior perception" and "level of perception of garbage classification information", in which "subjective norm" is identified as the most influential factor. Besides, the intention of the people to segregate the garbage in the study area is highly appreciated. Therefore, in order to effectively manage domestic solid waste generated locally, the study proposes a number of governance implications. In particular, it is necessary to have practical measures in line with the factors that have strongly influenced the people's intention to classify garbage, such as some solutions on mechanisms, policies, management and waste classification models at source.

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