# Citizen's Participation Intention to Urban Community Environmental Governance and Its Influencing Factors: Empirical Analysis Based on 1,573 Data from Fujian Province

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**Objectives: It is vital to improve the willingness of citizens' participation in communities environmental governance, which contribute to promoting primary-level environmental governance. This study based on Theory of Planned Behavior (DTPB) and 1,573 survey samples analysis from three eco-cities in Fujian province. In this study we found that citizens in Fuzhou and Xiamen have higher participation intention to urban community environmental governance; the attitude and perceived behavioral control of citizens participating in urban community environmental governance have positive effects, while subjective norms have no significant effects on their participation intention to governance; perceived usefulness, perceived compatibility, convenient conditions and self-efficacy all have indirect positive effects on citizens' participation intention, but perceived ease of use has indirect negative effects on citizens' participation intention. Therefore, the authority should build a mechanism to cultivate citizens' participate intention and capacity in community environmental governance, which depend on the concept of public value and the perspective of citizens' psychological cognitive factors.**

**Key words: citizen participation; participate intention; urban community environmental governance; public value governance**
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## INTRODUCTION

Over the past 40 years of reform and opening up, China has witnessed the acceleration of urbanization and made remarkable achievements in urban economy. The rate of urbanization in China has reached 60.6%. Due to the long-term extensive growth model, the urbanization process and economic development were promoted sharply. However it has also caused a series of environmental problems in urban communities,

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like the increasing production of consumer waste in urban and waste water as well as waste gas discharging in massive and disorder ways. Nowadays, environmental problems of urban have an impact on the sustainable development in economy and society. Meanwhile it endangers the quality of life and happiness which are relevant with the public. It is critical that sustainable development of the city relies on environmental issues solving and environmental bearing capacity boosting. Therefore urban community environmental governance should be improved in effective ways. Due to diverse formations of urban community environmental problems, urban community environmental governance is a complex system. The authority departments have carried out the corresponding publicity and education of environmental protection and the mobilization of construction work. As a result, citizens' awareness of environmental protection has been continuously improved and more citizens have participated in the community environmental governance. At the Fourth Plenary Session of the 19th CPC Central Committee, slogans was put forward in order to improve the social governance system and it said that "build a social governance community that everyone is responsible, conscientious and enjoys". In this way, it is necessary to construct a mechanism for citizens' participation aiming to mobilize effectively and exert citizens' active participation about environmental governance in urban communities. But, does citizens' participation intention to urban community environmental governance have corresponding characteristics? Are they affected by psychological or cognitive factors? What are the respective factors? Are citizens' attitudes, subjective norms and perceived behavioral control different from their participation intention to environmental governance? The discussion on these issues is helpful to further understand the citizens' willingness and differences of participation in environmental governance in urban communities, and to improve their participation ability and governance effectiveness. Therefore, the author discusses the influencing factors of citizens' participation intention to urban community environmental governance based on DTPB theoretical model from the perspective of psychological cognitive factors, in order to provide thinking for improving the effectiveness of citizens' participation in urban community environmental governance.

## LITERATURE REVIEW

Governance, as a tool of government management, refers to the process in which the government shares power to enterprises, the third sectors and citizens to manage public affairs cooperatively for enhancing the public interest. Urban community environmental governance means citizens was granted power from the authority and solve community environmental problems coordinately with government in the process of environmental affairs management. Scholars have made abundant explorations on community environmental governance from different layers and summarized the theories of community autonomy, adaptive governance and collaborative governance in community environmental governance. It was proposed that the community environmental autonomy model should focus on effective and appropriate empowerment to the public, so as to enhance the participation of community citizens[1]. Citizens, as the core of urban community environmental governance, possess dual identities: they enjoy the community environment, but fulfilling their obligations as well. Citizen participation stress great importance. So that citizens should be grant more power during environmental governance process through streamline the administration[2]. Taking the smoke-free campaign in community for example, the public education is necessary for correcting misperceptions about the harmful ingredients in cigarettes in the case of propaganda and educational activities[3]. Thus, measures are implemented by communities in two perspectives: the propagation among residents and educational work strengthened by governments. Concerning to rules making, Seitz[4] holds a view that a combination of community-based enforcement, including social norms and formal regulations, should be consider as an available measure for the smoke-free campaign. Consequently the engagement of citizens is indispensable in this campaign due to their high connection with communities. According to citizen participation ladder theory[5], citizen participate ability has become a vital aspect to measure the effectiveness of community environmental governance.

Whereas, social issues were proved to be complicated. For instance, there were a bunch of problems in community environment governance practice: the lack of civic spirit, weak consciousness, insufficient self-organization ability, partial as well as formal participation and other obstacles or dilemmas, which made citizen who participate in governance progress confronted not only organizational but also cultural and policy dilemmas[6]. In the new period, citizens' participation is influenced by social psychological cognitive factors[7], indicating that it is far from adequate to emphasize state administrative control or social policy intervention exclusively. It is necessary to understand the influencing factors of citizens' participation intention from psychological cognitive factors so as to effectively cultivate citizens[8], and improve the organizational skill and participation of citizens in community environmental governance in terms of organizational empowerment, community identity, social mobilization and cooperative participation. Therefore, psychological cognitive factors that affect citizens' participation in community environmental governance should not be ignored[9]. The authority should empower and mobilize citizens aiming at incenting citizens to engage in governance progress orderly so that the governance effectiveness are able to be improved.

At present, the influencing factors of citizens' participation in community environmental governance are mainly divided into the following four aspects. First, some researchers believes that socio-demographic characteristics have a positive effect on environmental governance behavior (e.g. age, marital status, occupation, income, and gender).[10] However, other researcher pointed out that income and age have a negative effect on environmental concern[11]. Domestic researchers believed that there was a correlation between citizens' income, age, education level, marital status and their participation intention to community environmental governance[12-13]. Secondly citizens' environmental awareness is proved to be a critical factor which affect the environmental governance behavior and balance in environmental cognitive factors[14]. Environmental knowledge has a positive effect on the environmental protection behavior of urban communities[15]. Thirdly, citizens' environmental sensitivity, satisfaction with local government's environmental protection work and environmental protection behavior are positively correlated, while satisfaction with central government's environmental protection work and environmental protection behavior are significantly negatively correlated with regard to social psychological cognitive factors[16] and the degree of environmental pollution perception has an impact on public and private environmental behaviors[17]. In contrast, western researchers have made rich achievements in analyzing the influencing factors of citizens' participation in community environmental governance from the perspective of TPB. For example, Han[18] argues that the sense of obligation, attitude, subjective norm, perceived behavioral control and environmental protection behavior have significant positive effects. Oreg[19] reckons that environmental attitude and perceived behavioral control have a significant positive effect on the willingness of urban communities to govern the environment by using the environmental module data in the International Social Survey Project (ISSP) in 2000. Fourthly, citizens' participation is affected positively by government policies, institutional supply in government actions and behavioral norms in community environmental governance with regard to the influencing factors of macro-policy environment, which explains why citizens' high participation intention cannot be effectively transformed into participating behaviors[20]. In the meantime, citizens' community environmental behavior is also affected by two variables, the government's environmental governance capacity and the transparency of environmental information towards the public[21]. Hence the government's behavioral constraints and public norms are vital elements that relevant to urban citizens' environmental behavior[22]. Other researchers who analyzed the statistical yearbook data about 31 provinces and cities in China for ten years. concluded that socio-economic factors, environmental pollution status, etc. are relevant to citizens' participation in community environmental governance[23].

## HYPOTHESES

Western researchers have a wealth of researches on the theory of psychological cognitive factors,

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among which the most widely acknowledged are the theory of planned behavior (TPB) and the value-belief-norm theory (VBN). Ajzen[24] put forward the theory of planned behavior (TPB) from three dimensions: attitude, subjective norm and perceived behavioral control. He argued that people's behavior is planned after careful consideration, which influences their behavior under the mediation of behavioral intention. Other researchers have applied the theory of planned behavior to discover the influencing factors of citizens' environmental behavior and explained the different performance of heterogeneous citizens' participation in environmental governance behavior. For example, Carmi[25] analyzed the influencing factors and differences about citizens' attitudes, subjective norms and perceived behavioral control in different environmental behaviors (e.g. water, electricity, garbage, recycling and consumption). Value-belief-norm theory was proposed by Stern [26], who believed that environmental behavior was affected by human responsibility and self-interest values had a negative effect on environmental behavior, which was also supported by Riper & Kyle[27] who investigated environmental behavior of tourists in National Park of Channel Islands in the United States. Han[18] who combined the TPB and VBN theories took tourists in green accommodation environment as an example to verify and analyze citizens' participation intention to environmental governance under the influence of attraction adjustment of non-green alternatives, and concluded that tourists' attitudes, subjective norms, perceived behavioral control and environmental behavior have a significant positive impact relationship. Although some western researchers have reached corresponding conclusions by studying the influencing factors of citizens' participation intention to environmental governance based on the theory of planned behavior, but Decomposed Theory of Planned Behavior (DTPB) performs better in analyzing the influencing factors in detail. However, universal researches that discover the influencing factors about citizens' participation intention to environmental governance on the basic of DTPB are still at the initiated stage.

Decomposed Theory of Planned Behavior (DTPB) was proposed by Taylor & Todd (1995)[28], which based on Technology Acceptance Model (TAM) and Theory of Planned Behavior (TPB), in which attitude is decomposed into three perspectives: perceived usefulness, ease of use and compatibility. Subjective norms are decomposed into various external pressure factors. Meanwhile perceived behavioral control is divided into two parts: self-efficacy and convenient conditions. Due to advantages of TAM and TPB, DTPB has stronger explanatory and predictive capacity. Since the DTPB theory was put forward, western scholars have applied it in the field of environmental governance and obtained preliminary and effective verification. For instance, Kianpour[29] conducted an empirical analysis on 800 questionnaires of Malaysian consumers by using Partial Least Squares Structural Equation Modeling (PLS-SEM). He concluded that there is a significant relationship between consumer attitudes, subjective norms, perceived behavioral control and environmental behavior willingness of electronic product recycling and utilization.

According to DTPB theory, this article assumed that citizens' participation intention to urban community environmental governance is directly influenced by three psychological cognitive factors: attitude, subjective norm and perceived behavioral control, and indirectly influenced by the corresponding antecedents. (See Figure 1). Citizens' participate attitude was affected by perceived usefulness, ease of use and compatibility in urban community environmental governance. Perceived usefulness refers to citizens' perception of the usefulness of participating in urban community environmental governance, whether it will affect themselves and others, or even the whole city. Citizens will hold positive attitudes towards participating in environmental governance when they perceive the benefits in this progress. However, they will keep negative attitudes when they do not receive any benefits. Perceived ease of use refers to citizens' perception of the difficulty of participating in urban community environmental governance. Citizens will not have too much psychological burden when they reckon that participating in environmental governance is relatively easy, and their attitude towards participating will be relatively positive. Perceived compatibility refers to the degree of compatibility between citizens' personal values, habitual

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behaviors and their participation intention to urban community environmental governance. Citizens will take a positive attitude when they believe that they should be and have always been involved in environmental governance. To sum up, the stronger the performance of citizens' perceived usefulness, ease of use and compatibility, the more positive the attitude of citizens to participate in urban community environmental governance. Thus, the following hypotheses are made:

H1: Perceived usefulness has a positive effect on citizens' attitude of participating in urban community environmental governance.

H2: Perceived ease of use has a positive effect on citizens' attitude of participating in urban community environmental governance.

H3: Perceived compatibility has a positive effect on citizens' attitude of participating in urban community environmental governance.

Subjectivity refers to the pressure of surrounding groups that citizens receive pressure from others such as relatives, friends or superiors when they participating in environmental governance, When the surrounding groups which actively participate in urban community environmental governance interact effectively and share opinions and experiences, citizens will be affected by the well surrounding atmosphere and heighten their participation intentions. They will devoted themselves into urban community environmental governance. According to DTPB theory, it is believed that the greater the external pressure the citizens are subjected to, the stronger the subjective norm of their participation in urban community environmental governance. Thus, the following hypothesis is made:

H4: External pressure has a positive impact on the subjective norms of citizens' participation in urban community environmental governance.

Perceived behavioral control refers to citizens' perception of their own behavioral control degree when they participating in governance activities. It is covered by two dimensions: convenient conditions and self-efficacy by DTPB theory. The former refers to citizens' perception of the adequacy of relevant resources and technologies that they have mastered. When citizens have more resources and sufficient technologies related to environmental governance, the higher their perceived behavioral control. While the latter refers to citizens' perception of their confidence in participating in environmental governance. When citizens think that their ability to participate in environmental governance is continuously improving, their participation rate will also boost up. According to DTPB theory, when citizens have more resources, more technology and higher self-confidence, they will have better control over their perception and behavior of participating in urban community environmental governance. Thus, the following hypotheses are made:

H5: Self-efficacy will have a positive impact on citizens' perception and behavioral control in urban community environmental governance.

H6: Convenient conditions will have a positive impact on citizens' perception and behavioral control in urban community environmental governance.

As other vital factors that directly affect citizens' participation intention to urban community environmental governance in DTPB theoretical model, the relationship between attitude and urban community environmental governance is one of the key contents in prior researches. The more positive citizens' attitude towards environmental governance, the stronger their participation intention to environmental governance[30]. Subjective norms refer to citizens' willingness to take part in environmental governance due to the pressure from various parties. The more obvious the subjective norms of citizens are, the stronger their participation intention to environmental governance will be. Perceived behavioral control represent the degree to which citizens have opportunities and resources to promote their participation intention to urban community environmental governance. The higher citizens' perceived behavioral control, the stronger their participation intention to urban community environmental governance. Thus, the following hypotheses are made:

H7: Citizens' attitude of participating in urban community environmental governance will positively affect their participation intention.

H8: Subjective norms of citizens' participation in urban community environmental governance will positively affect their participation intention.

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H9: Citizens' perceived behavioral control of participating in urban community environmental governance will positively affect their participation intention.

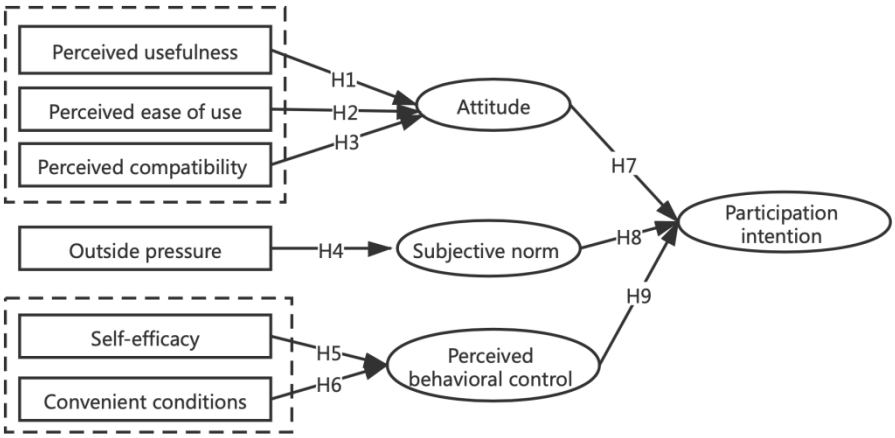


**Figure 1 Model of Citizens' Participation Intention to Urban Community Environmental Governance**

Data source: drawn by the author

## RESEARCH DESIGN

### Variable Selection and Measurement

On the basic of DTPB theoretical model and with reference to previous research results and expert consultation, the questionnaire was divided into two parts. The first part was the measurement of citizens' participation intention to environmental governance (as shown in Table 1). Five descriptions in different degrees were set for each question using Likert five-level scale and values were sequentially assigned to 1-5 points which represent five different degrees. The second part was the basic information of the social and demographic characteristics with regard to the respondents.

**Table 1**
**Indicators for the Model of Citizens' Participation Intention to Urban Community Environmental Governance**

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| Antecedents | Measurement factors | Items |
|---|---|---|
| **Perceived usefulness (PU)** | Self-benefit (PU1) | Participating in environmental protection activities can benefit oneself. |
| | Urban development (PU2) | Participating in environmental protection activities can promote the better development of cities. |
| | Environmental beauty (PU3) | Participating in environmental protection activities can make the surrounding environment better. |
| **Perceived ease of use (PE)** | Simple knowledge (PE1) | It is very simple to learn about environmental protection. |
| | Simple methods (PE2) | It's easy to learn how to participate in environmental protection |
| | Simple activities (PE3) | The content of participating in environmental protection activities is simple. |
| **Perceived compatibility (PC)** | Participation frequency (PC1) | I often take part in environmental protection activities such as garbage sorting and smoke-free communities. |
| | Participation responsibility (PC2) | It is my responsibility to participate in environmental protection activities. |
| | Participation burden (PC3) | Participation in environmental protection activities did not cause me any inconvenience. |
| **Outside pressure (OP)** | Family participation (OP1) | Family and relatives often participate in environmental protection activities. |
| | Friends participation (OP2) | Colleagues, classmates and neighbors often participate in environmental protection activities. |
| | Superior participation (EP3) | Higher authorities often participate in environmental protection activities. |
| **Self-efficacy (SE)** | Participation way (SE1) | I can find a way to participate in environmental protection activities. |
| | Participation requirements (SE2) | I am familiar with the relevant requirements or regulations for participating in environmental protection activities. |
| | Participation quality (SE3) | I have the quality to participate in environmental protection activities. |
| **Convenient conditions (CC)** | Convenient ways (CC1) | If I know the way to participate in environmental protection activities, I am willing to participate. |
| | Convenient time (CC2) | If the time of participating in environmental protection activities does not conflict with the time of going to work or studying, I am willing to participate. |
| | Complete conditions (CC3) | If the relevant departments provide relatively perfect conditions for participation, I am willing to participate. |
| **Attitude (AT)** | Supporting participation (AT1) | I support participating in environmental protection activities. |
| | Mobilizing participation (AT2) | I think citizens should be mobilized to participate in environmental protection activities. |
| | Participation viewpoint (AT3) | Participation in environmental protection activities is a wise choice. |
| **Subjective norm (SN)** | Influence from families (SN1) | My family thinks I should take part in environmental protection activities. |
| | Influence from superior (SN2) | People who have influence on me (such as superiors) think that I should take part in environmental protection activities. |
| | Influence from friends (SN3) | My friends (such as classmates, colleagues and neighbors) think that I should take part in environmental protection activities. |
| **Perceived behavioral control (PBC)** | Time guarantee (PBC1) | I have more time to participate in environmental protection activities. |
| | Material guarantee (PBC2) | I am willing to spend my work income to participate in environmental protection activities. |
| | Ability guarantee (PBC3) | I have better ability to participate in environmental protection activities. |
| **Participation intention (BI)** | Willing to participate (BI1) | I am willing to participate in environmental protection activities such as garbage sorting and smoke-free communities. |
| | Actively participating (BI2) | I will actively participate in environmental protection activities in the future. |
| | Influenced participation (BI3) | I will advise my family and friends around me to participate in environmental activities |

Note: "Strongly agree =5, agree =4, general =3, disagree =2, strongly disagree =1"
Data source: collated by the author

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## Structural Equation Model

SEM is a verification method, which needs theoretical or empirical support. The initial model related to the influence relationship of citizens' participation intention to urban community environmental governance was set in foundation of DTPB theory and the hypothetical relationship. (as shown in Figure 2). Then we fitted models to the survey data. According to the SEM fitness evaluation criteria[31]. We test the model and found that the absolute values of the critical ratio (C.R.) in 39 paths surpassed 2.58 except subjective norm and the participation intention, which are less than 2.58. The factor loadings (normalized parameter estimation) of the measurement indexes are between 0.680 and 0.945, both of which are greater than 0.05 and less than 0.95, showing that the basic fit index is ideal. Although the chi-square freedom ratio (2/df) keeps in a high level in the fitness evaluation index of initial model, the modified model (see Table 2 for details) shows that the index is obviously declining. Therefore the chi-square freedom ratio (2/df) is beyond our consideration in this study taking account of influence of large samples and parameters. Among other evaluation indexes in the fitted initial model, GFI and RMSEA failed to meet the adaptation standard, but both of them reached the ideal value after modification. Meanwhile other indexes all reached the ideal value in general.

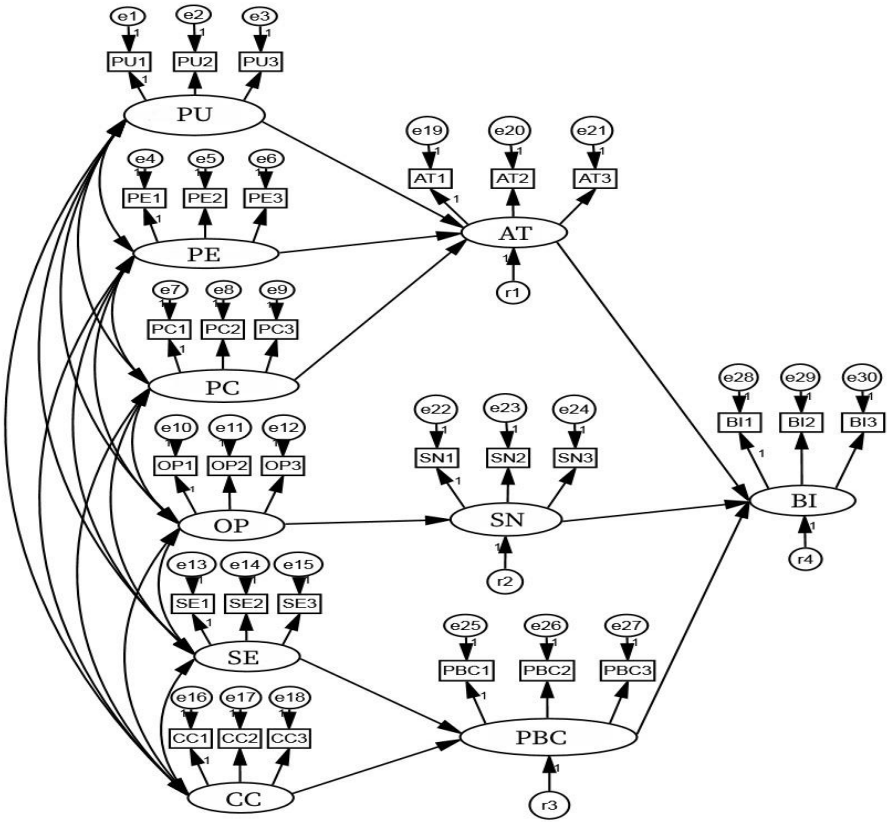


**Figure 2 Initial Structural Equation Model**

Data source: drawn by the author

**Table 2**
**Statistical Values of Goodness of Fit of Model**

| Name of indexes | | Fitting criterion | Initial model | Results | Modified model | Results |
|---|---|---|---|---|---|---|
| Absolute fit index | $\chi^2$/df | The smaller the better | 11.1 | Poor | 8.5 | Poor |
| | GFI | >0.9 | 0.829 | Close | 0.901 | Ideal |

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|---|---|---|---|---|---|---|
| **Value-added goodness-of-fit index** | RMSEA | <0.08 | 0.080 | Approaching | 0.069 | Ideal |
| | NFI | >0.9 | 0.929 | Ideal | 0.957 | Ideal |
| | CFI | >0.9 | 0.935 | Ideal | 0.962 | Ideal |
| | TLI | >0.9 | 0.925 | Ideal | 0.955 | Ideal |
| | RFI | >0.9 | 0.919 | Ideal | 0.949 | Ideal |
| | IFI | >0.9 | 0.935 | Ideal | 0.962 | Ideal |
| **Simple goodness-of-fit index** | PNFI | >0.5 | 0.813 | Ideal | 0.805 | Ideal |
| | PCFI | >0.5 | 0.819 | Ideal | 0.809 | Ideal |

Data source: developed by the author according to software analysis.

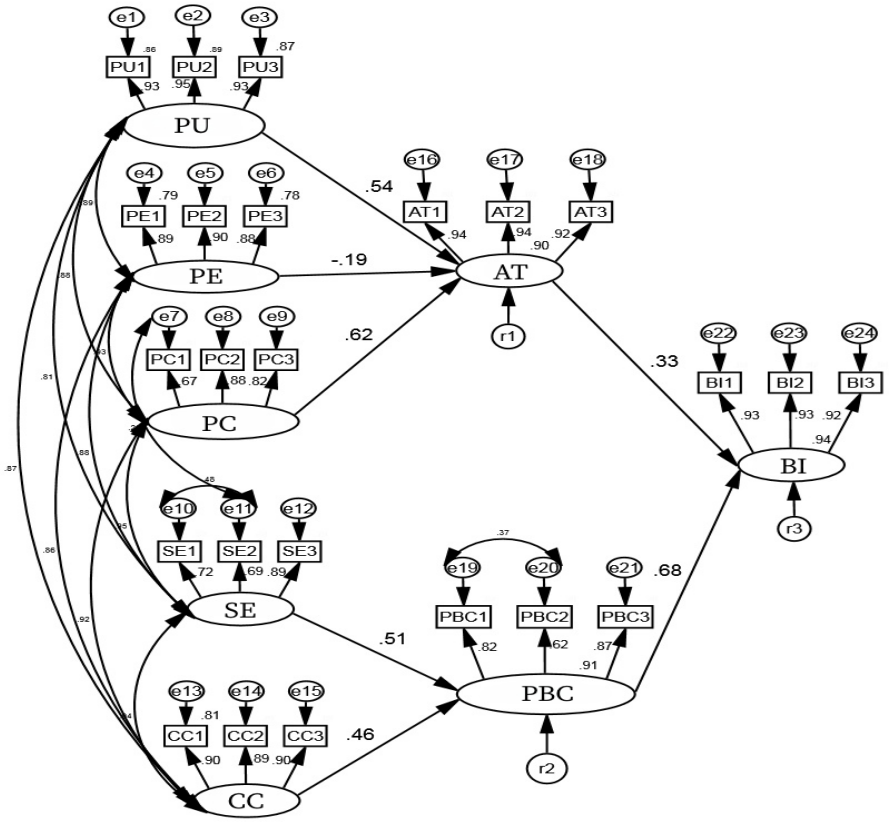


**Figure 3 Finally Established Structural Equation Model**

Data source: drawn by the author

## Model Modification

With assistance of modification index (M.I) and critical ratio (C.R.) given by AMOS, initial model was modified. Firstly, we revised the latent variables in terms of the critical ratio. Then we adjust the model by following the order of modification values in next step. Since the critical ratio of subjective norm to participation intention was less than 2.58, the path that subjective norm affects participation intention should be removed (Rejection of H8). Moreover, the path that external pressure has a positive impact on the subjective norms of citizens' participation in urban community environmental governance needs to be removed as well (Rejection of H4). After modification, coefficient in each paths was significant at the level of 95%, indicating that the model after adjustment was valid. Compared with the initial goodness-of-fit statistics, the chi-square free ratio decreased significantly, and the GFI was close to 0.9, but it still fell short of the ideal fitting standard, so the model still needed to be adjusted. However the modification to latent variables was unavailable be modified when the model was revising on the basis of the model modification

index. Meanwhile only one parameter is allowed to modify each time. After modifying the covariate relationship of the error terms, we obtained the adjusted model, whose GFI initial value was adjusted from 0.829 to 0.901, and RMSEA index value was adjusted from 0.08 to 0.901, meeting the model fit criteria, and the other index values also met the model fit criteria (as shown in Figure 3). So that this theoretical model that represents citizens' participation intention to urban community environmental governance had a good fitting degree after modification.

## EMPIRICAL ANALYSIS

### Sample Data Analysis

Before the formal investigation, we had investigated the citizens randomly in Fuzhou during September 2017. 80 questionnaires were distributed and 76 valid questionnaires were retrieved. According to data, the valid rate of questionnaires reached 97.4%, which means valid recovery rate exceed 80%. The reliability of questionnaire surpass 0.8 and validity surpass 0.6, indicating that the questionnaire was stable and reliable. Therefore it is available for formal questionnaire investigation.

Fujian Province is the first province-level ecological civilization prior area in China. Xiamen and Quanzhou are national ecological cities and Fuzhou is a creational national ecological city that has become a national ecological city in 2019. Consequently, it is representative as we typical to investigate and analyze the effectiveness of community environmental governance by investigating citizens in these three cities as survey objects. During September 27 to October 30, 2017, the first wave of questionnaire survey was conducted on community citizens in Fuzhou, Xiamen and Quanzhou respectively with a combination of interception survey in community and distribution to community workers. Approximately 2 years after the first wave, the second wave was conducted in October 2019 in order to investigate the situation of citizens' participation in community environmental treatment in the new era due to the community garbage classification campaign launched by FuJian Provincial Government in 2019. 1,701 questionnaires were retrieved from the two waves of survey in total, which resulted in 1,573 valid questionnaires after eliminating missing values, invalid values and logic errors (i.e. effective rate of 92.5%).

Statistical analysis (see Table 3) shows that samples from Fuzhou, Xiamen and Quanzhou accounted for 40%, 27.7% and 32.3% respectively, among which the proportions of female and male were 54.4% and 45.6%, respectively, indicating that the sample distribution was basically reasonable. The age was mainly within the range of 20 − 50 years old, showing a normal distribution; the educational level was relatively high with the index represent for university or above accounting for 72.3%. Individuals in the data were centered on party and government organs, institutions, and enterprises (including state-owned enterprises), accounting for 59.3%. Although the monthly income was relatively low in general, it showed left-biased normal distribution with the proportion of income of 3,001 − 6,000 yuan accounting for 38.1%. In conclusion, the survey samples generally fit to the distribution of residents in Fujian Province. It can reflect the actual level of citizens' participation intention to urban community environmental governance.

As shown in the statistics (see Table 4), citizens' participation intention to urban community environmental governance in Fuzhou and Xiamen were at a high level with an average of 3.84 and 3.94 respectively. Whereas Quanzhou citizens' participation intention about urban community environmental governance was low with an average of 2.25. In the meantime, each average of measurement factor in Xiamen exceed 3.6 and averages of measurement indicators about participate intention are nearly 4.0, displaying that citizens have higher participations intention to community environmental governance in Xiamen. The degree of citizens' participation intention in Fuzhou was slightly lower than that in Xiamen with the average value of each measurement indicator reaching more than 3.4 and the average value of the three measurement indicators of participation intention surpass 3.8. But citizens in Quanzhou hold low participation intentions to urban community environmental governance because the average value of measurement indicators is all lower than the average value, ranging from 2.1 to 2.5.

**Table 3**
**Distribution of Population Characteristics**

| Variables | Options | Sample size | Percentage (%) |
|---|---|---|---|
| **Regions** | Fuzhou | 629 | 40.0 |
| | Xiamen | 435 | 27.7 |
| | Quanzhou | 509 | 32.3 |
| **Gender** | Male | 717 | 45.6 |
| | Female | 865 | 54.4 |
| **Marriage** | Unmarried | 556 | 35.3 |
| | Married | 980 | 62.3 |
| | Divorced | 37 | 2.4 |
| **Age** | 20 years old and below | 91 | 5.8 |
| | 21-30 years old | 609 | 38.7 |
| | 31-40 years old | 555 | 35.3 |
| | 41-50 years old | 246 | 15.6 |
| | 51-60 years old | 53 | 3.4 |
| | 60 years old and above | 19 | 1.2 |
| **Educational background** | Primary school and below | 23 | 1.5 |
| | Junior high school | 83 | 5.3 |
| | Senior high school (including technical secondary school) | 328 | 20.9 |
| | College | 994 | 63.2 |
| | Graduate school and above | 145 | 9.1 |
| **Occupation** | Party and government organs and | 424 | 27.0 |
| | Enterprises (including state-owned | 508 | 32.3 |
| | Social organizations, neighborhood committees/village committees | 116 | 7.4 |
| | Unemployed or self-employed | 164 | 10.3 |
| | Students | 141 | 9.0 |
| | Others | 220 | 14.0 |
| **Monthly income** | 1,280 yuan and below | 220 | 14.0 |
| | 1,281-3,000 yuan | 388 | 24.7 |
| | 3,001-6,000 yuan | 600 | 38.1 |
| | 6,001-8,000 yuan | 186 | 11.8 |
| | 8,001-10,000 yuan | 90 | 5.7 |
| | 10,001 yuan and above | 89 | 5.7 |

Data source: made by the author according to survey data.

**Table 4**
**Statistics of Citizens' Participation Intention to Urban Community Environmental Governance**

| Antecedents | Measurement factors | Fuzhou | Quanzhou | Xiamen | Fuzhou | Quanzhou | Xiamen |
|---|---|---|---|---|---|---|---|
| **Perceived usefulness (PU)** | PU1 | 3.93 | 2.17 | 4.19 | | | |
| | PU2 | 4.00 | 2.15 | 4.29 | 4.00 | 2.14 | 4.25 |
| | PU3 | 4.08 | 2.11 | 4.27 | | | |
| **Perceived ease of use (PE)** | PE1 | 3.74 | 2.29 | 4.07 | | | |
| | PE2 | 3.72 | 2.34 | 4.07 | 3.69 | 2.33 | 4.01 |
| | PE3 | 3.62 | 2.37 | 3.91 | | | |
| **Perceived compatibility (PC)** | PC1 | 3.33 | 2.56 | 3.56 | | | |
| | PC2 | 3.86 | 2.28 | 3.96 | 3.63 | 2.40 | 3.79 |
| | PC3 | 3.71 | 2.35 | 3.84 | | | |
| **Attitude (AT)** | AT1 | 4.08 | 2.11 | 4.19 | | | |
| | AT2 | 4.06 | 2.12 | 4.11 | 4.08 | 2.12 | 4.14 |
| | AT3 | 4.08 | 2.12 | 4.13 | | | |
| **Outside pressure (OP)** | OP1 | 3.50 | 2.44 | 3.69 | | | |
| | OP2 | 3.45 | 2.48 | 3.62 | 3.47 | 2.46 | 3.64 |
| | OP3 | 3.46 | 2.46 | 3.60 | | | |
| **Subjective** | SN1 | 3.59 | 2.34 | 3.80 | 3.58 | 2.34 | 3.82 |

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|---|---|---|---|---|---|---|---|
| **norm (SN)** | SN2 | 3.60 | 2.33 | 3.87 | | | |
| | SN3 | 3.56 | 2.34 | 3.78 | | | |
| **Self-efficacy (SE)** | SE1 | 3.39 | 2.42 | 3.55 | | | |
| | SE2 | 3.25 | 2.50 | 3.49 | 3.46 | 2.42 | 3.65 |
| | SE3 | 3.73 | 2.32 | 3.92 | | | |
| **Convenient conditions (CC)** | CC1 | 3.76 | 2.26 | 3.88 | | | |
| | CC2 | 3.81 | 2.28 | 3.85 | 3.83 | 2.25 | 3.88 |
| | CC3 | 3.91 | 2.21 | 3.91 | | | |
| **Perceived behavioral control (PBC)** | PBC1 | 3.55 | 2.40 | 3.72 | | | |
| | PBC2 | 3.27 | 2.67 | 3.45 | 3.50 | 2.48 | 3.66 |
| | PBC3 | 3.66 | 2.36 | 3.82 | | | |
| **Participation intention (BI)** | BI1 | 3.86 | 2.23 | 3.94 | | | |
| | BI2 | 3.86 | 2.25 | 3.92 | 3.84 | 2.25 | 3.94 |
| | BI3 | 3.79 | 2.27 | 3.96 | | | |

Data source: made by the author according to software analysis

## RELIABILITY AND VALIDITY TEST

### Reliability

The reliability of the questionnaire was comprehensively measured by Cronbach's alpha coefficient, reliability of individual items, and composite reliability of potential variables (See Table 5). The Cronbach's alpha coefficient of entire questionnaire was 0.983 and Cronbach's alpha coefficient in each variable was above 0.8, indicating that the reliability of the questionnaire performs well. The reliability coefficients of all the observed variables were higher than 0.5. From the perspective of the composite reliability of all the latent variables, the composite reliability value in perceived behavioral control was the smallest (i.e. CR=0.748), which surpass 0.6. Moreover, the composite reliability coefficient values of the other variables were all higher than 0.8, revealing that the model has a well quality. The reliability of questionnaire was test by The Cronbach's alpha coefficient, individual item reliability and composite reliability and it was proved to be reliable with well usage value.

**Table 5**
**Statistical Characteristics and Measurement Indicators of Measurement Model**

| Latent variables | Measurement factors | Mean | SD | Standard factor load | Factor load | Reliability coefficient | Composite reliability | AVE | Cronbach's alpha coefficient |
|---|---|---|---|---|---|---|---|---|---|
| **Perceived usefulness (PU)** | PU1 | 3.43 | 0.034 | 0.927 | 0.954 | 0.910 | | | |
| | PU2 | 3.48 | 0.035 | 0.945 | 0.965 | 0.931 | 0.955 | 0.875 | 0.955 |
| | PU3 | 3.49 | 0.035 | 0.934 | 0.954 | 0.910 | | | |
| **Perceived ease of use (PE)** | PE1 | 3.36 | 0.032 | 0.891 | 0.918 | 0.843 | | | |
| | PE2 | 3.37 | 0.031 | 0.900 | 0.942 | 0.887 | 0.920 | 0.793 | 0.920 |
| | PE3 | 3.29 | 0.031 | 0.881 | 0.924 | 0.854 | | | |
| **Perceived compatibility (PC)** | PC1 | 3.14 | 0.029 | 0.695 | 0.810 | 0.656 | | | |
| | PC2 | 3.38 | 0.032 | 0.879 | 0.898 | 0.806 | 0.843 | 0.643 | 0.834 |
| | PC3 | 3.31 | 0.032 | 0.821 | 0.890 | 0.792 | | | |
| **Outside pressure (OP)** | OP1 | 3.21 | 0.031 | 0.874 | 0.925 | 0.856 | | | |
| | OP2 | 3.18 | 0.030 | 0.888 | 0.937 | 0.878 | 0.901 | 0.752 | 0.914 |
| | OP3 | 3.17 | 0.031 | 0.839 | 0.910 | 0.828 | | | |
| **Self-efficacy (SE)** | SE1 | 3.12 | 0.030 | 0.806 | 0.908 | 0.824 | | | |
| | SE2 | 3.07 | 0.030 | 0.796 | 0.900 | 0.810 | 0.854 | 0.661 | 0.858 |
| | SE3 | 3.33 | 0.031 | 0.837 | 0.841 | 0.707 | | | |
| **Convenient conditions** | CC1 | 3.31 | 0.032 | 0.898 | 0.929 | 0.863 | 0.926 | 0.806 | 0.925 |
| | CC2 | 3.33 | 0.032 | 0.891 | 0.935 | 0.874 | | | |

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|---|---|---|---|---|---|---|---|---|---|
| **(CC)** | CC3 | 3.36 | 0.033 | 0.905 | 0.934 | 0.872 | | | |
| **Attitude (AT)** | AT1 | 3.47 | 0.035 | 0.938 | 0.958 | 0.918 | 0.953 | 0.871 | 0.953 |
| | AT2 | 3.45 | 0.035 | 0.939 | 0.960 | 0.922 | | | |
| | AT3 | 3.46 | 0.035 | 0.922 | 0.951 | 0.904 | | | |
| **Subjective norm (SN)** | SN2 | 3.24 | 0.031 | 0.929 | 0.937 | 0.878 | 0.946 | 0.853 | 0.945 |
| | SN1 | 3.26 | 0.031 | 0.900 | 0.952 | 0.906 | | | |
| | SN3 | 3.23 | 0.030 | 0.941 | 0.958 | 0.918 | | | |
| **Perceived behavioral control (PBC)** | PBC1 | 3.23 | 0.030 | 0.849 | 0.916 | 0.839 | 0.748 | 0.500 | 0.857 |
| | PBC2 | 3.13 | 0.028 | 0.680 | 0.849 | 0.721 | | | |
| | PBC3 | 3.28 | 0.030 | 0.873 | 0.879 | 0.773 | | | |
| **Participation intention (BI)** | BI1 | 3.36 | 0.032 | 0.925 | 0.948 | 0.899 | 0.948 | 0.858 | 0.947 |
| | BI2 | 3.35 | 0.032 | 0.934 | 0.957 | 0.916 | | | |
| | BI3 | 3.34 | 0.032 | 0.919 | 0.948 | 0.899 | | | |

Data source: made by the author according to software analysis

## Validity

This questionnaire was designed in foundation of DTPB theoretical model with a relatively well theoretical basis and based on the results of relevant literature as well as preliminary investigation, which had well content and criterion validity. Principal component analysis by using SPSS20.0 showed that factor loadings of all indicators were above 0.8 when the eigenvalues were greater than 1, showing that observed variables had strong explanatory capacity to the corresponding latent variables. The discriminant validity of the questionnaire was measured by average variance extraction (AVE) and correlation analysis. The minimum AVE value was 0.5, and the remaining values were greater than 0.5, indicating that the internal quality of the model was ideal (See Table 5).

With DTPB theoretical model, we discover the influencing factors of citizens' participation intention to urban community environmental governance and test the hypotheses through empirical research, which reveals that the relationship between the variables in the SEM was verified generally. Table 6 shows the effects of citizens' attitude and perceived behavioral control on their participation in environmental governance with values of 0.328 and 0.676 respectively. Thus there is a significantly positive correlation between the attitude as well as perceived behavioral control and participation. Five factors (i.e. of perceived usefulness, perceived ease of use, perceived compatibility, self-efficacy and convenient conditions) impose indirectly affect upon the participation of citizens All of these factors have an significant positive impacts on citizens' participation except perceived ease of use It is clear that citizens' participation intention to environmental governance in urban communities is subject to self-efficacy (0.345), convenient conditions (0.310), perceived compatibility (0.203) and perceived usefulness (0.177) and citizens' self-efficacy is the most primary factor.

**Table 6**
**Standardized Results of Influence Effects among Potential Variables**

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| Variables | Effects | Perceived usefulness | Perceived ease of use | Perceived compatibility | Self-efficacy | Convenient conditions | Attitude | Perceived behavioral control |
|---|---|---|---|---|---|---|---|---|
| | Total effect | 0.539 | -0.187 | 0.619 | 0 | 0 | 0 | 0 |
| **Attitude (AT)** | Direct effect | 0.539 | -0.187 | 0.619 | 0 | 0 | 0 | 0 |
| | Indirect effect | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Perceived behavioral control (PBC)** | Total effect | 0 | 0 | 0 | 0.511 | 0.458 | 0 | 0 |
| | Direct effect | 0 | 0 | 0 | 0.511 | 0.458 | 0 | 0 |
| | Indirect effect | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Participation intention (BI)** | Total effect | 0.177 | -0.061 | 0.203 | 0.345 | 0.310 | 0.328 | 0.676 |
| | Direct effect | 0 | 0 | 0 | 0 | 0 | 0.328 | 0.676 |
| | Indirect effect | 0.177 | -0.061 | 0.203 | 0.345 | 0.310 | 0 | 0 |

Data source: made by the author according to software analysis

**Table 7**
**Path Coefficient of Citizen Participation in Community Environmental Governance Model**

| | Standardized path coefficient | SE | C.R. | P value | Hypothesis test |
|---|---|---|---|---|---|
| **Participation intention (BI) ←Attitude (AT)** | 0.328 | 0.022 | 13.322 | *** | $H_7$ accepted |
| **Participation intention (BI) ←Perceived behavioral control (PBC)** | 0.676 | 0.035 | 24.047 | *** | $H_9$ accepted |
| **Attitude (AT) ←Perceived usefulness (PU)** | 0.539 | 0.036 | 15.599 | *** | $H_1$ accepted |
| **Attitude (AT) ←Perceived ease of use (PE)** | -0.187 | 0.060 | -3.639 | *** | $H_2$ rejected |
| **Attitude(AT) ←Perceived compatibility (PC)** | 0.619 | 0.090 | 11.822 | *** | $H_3$ accepted |
| **Perceived behavioral control (PBC) ←Self-efficacy (SE)** | 0.511 | 0.072 | 7.886 | *** | $H_5$ accepted |
| **Perceived behavioral control(PBC) ←Convenient conditions (CC)** | 0.458 | 0.053 | 7.261 | *** | $H_6$ accepted |
| **Self-benefit (PU1) ←Perceived usefulness (PU)** | 0.928 | | | | |
| **Urban development (PU2) ←Perceived usefulness (PU)** | 0.946 | 0.014 | 72.389 | *** | |
| **Environmental beauty (PU3) ←Perceived usefulness (PU)** | 0.934 | 0.015 | 69.177 | *** | |
| **Simple knowledge (PE1) ←Perceived ease of use (PE)** | 0.890 | | | | |
| **Simple method (PE2) ←Perceived ease of use (PE)** | 0.901 | 0.019 | 53.593 | *** | |
| **Simple activities (PE3) ←Perceived ease of use(PE)** | 0.881 | 0.019 | 50.945 | *** | |
| **Participation frequency (PC1) ←Perceived compatibility (PC)** | 0.669 | | | | |
| **Participation responsibility (PC2) ←Perceived compatibility (PC)** | 0.885 | 0.047 | 31.360 | *** | |
| **Participation burden (PC3) ←Perceived compatibility (PC)** | 0.821 | 0.046 | 29.455 | *** | |
| **Participation way (SE1) ←Self-efficacy (SE)** | 0.720 | | | | |

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|---|---|---|---|---|
| **Participation requirements (SE2) ←Self-efficacy (SE)** | 0.692 | 0.025 | 37.545 | *** |
| **Participation quality (SE3) ←Self-efficacy (SE)** | 0.890 | 0.036 | 34.745 | *** |
| **Convenient way (CC1) ←Convenient conditions (CC)** | 0.899 | | | |
| **Convenient time (CC2) ←Convenient conditions (CC)** | 0.890 | 0.019 | 54.076 | *** |
| **Complete conditions (CC3) ←Convenient conditions (CC)** | 0.904 | 0.018 | 56.266 | *** |
| **Supporting participation (AT1) ←Attitude(AT)** | 0.939 | | | |
| **Mobilizing participation (AT2) ←Attitude (AT)** | 0.939 | 0.013 | 73.911 | *** |
| **Participation viewpoint (AT3) ←Attitude (AT)** | 0.923 | 0.014 | 69.084 | *** |
| **Time guarantee (PBC1) ←Perceived behavioral control (PBC)** | 0.817 | | | |
| **Material guarantee (PBC2) ←Perceived behavioral control (PBC)** | 0.618 | 0.023 | 31.848 | *** |
| **Ability guarantee (PBC3) ←Perceived behavioral control (PBC)** | 0.873 | 0.026 | 42.110 | *** |
| **Willing to participate (BI1) ←Participation intention (BI)** | 0.927 | | | |
| **Active participation (BI2) ←Participation intention (BI)** | 0.933 | 0.015 | 68.435 | *** |
| **Influenced participation (BI3) ←Participation intention (BI)** | 0.917 | 0.015 | 64.651 | *** |

Note: * * * indicates a significance level at 1%
Data source: made by the author according to software analysis

## RESULTS

### Attitude has a Positive Impact on Citizens' Participation Intention to Urban Community Environmental Governance

As shown in Table 7, the path coefficient of citizens' attitude that affect their participation intention to urban community environmental governance is 0.328. It indicates that citizens' attitude has a significant impact on their participation intention (Acceptance of H7). Supporting participation (AT1), mobiling participation and participation viewpoint are all significant at the level of 1%, which represent three observation variables of citizen's attitude with path coefficients of 0.939, 0.939 and 0.923, respectively. It shows that citizens' attitude to participate in urban community environmental governance is influenced by these factors that have a significant impact on citizens' participation intention.

Among potential variables that affect citizens' attitude to participate in urban community environmental governance, the path coefficient of perceived compatibility (0.619) is the principal factor, indicating that perceived compatibility was the major element on citizens' attitude (Acceptance of H3). Three observed variables of perceived compatibility are all significant at the level of 1%. The path coefficients all exceed 0.6, indicating that citizens' participation frequency (PC1), participation responsibility (PC2) and participation burden (PC3) have a significantly positive relationship with perceived compatibility. Besides participation responsibility has become the main factor that incentives citizens' participation intention to environmental governance through the behavioral attitude.

Perceived usefulness (0.539) is considered as the positive incentive to citizens' attitudes, which reveals that citizens will hold a positive attitude when they think engaging in environmental protection activities is beneficial to themselves, or their relatives, friends, colleagues and classmates, even the whole city and country (Acceptance of H1). The observed variables in perceived usefulness are significant at the level of 1% and the path coefficient surpass 0.9, indicating that citizens' perceived self-benefit (PU1), urban

development (PU2) and environmental beauty (PU3) have a significant positive impact on citizens' perceived usefulness. All these factors inspires citizens to participate in environmental governance through behavioral attitude.

However, the correlation between perceived ease-of-use and the attitude of urban community environmental governance was proved to be negative. Because citizens argues that the way about learning to participate in environmental governance is unilateral and the propagation of environmental protection knowledge seems to be insufficient. Perceived ease of use also contains three observed variables. All of these variables exceed 3.0, especially the average value of the option, that represents measuring the difficult level of participation in environmental protection is 3.37. More than half respondents (74.5% of respondents) believe that participating in urban community environmental governance is easy, while only 8.8% of the respondents insist it is difficult. During interview, many citizens deemed although they are familiar with environmental protection knowledge and the learning progress to grasp is easy, they will refuse to participate in environmental governance (Rejection of H2).

**Subjective Norms have no Significant Effect on Citizens' Participation Intention to Urban Community Environmental Governance**

It has been demonstrated in the analysis of initial model construction that subjective norms have no significant influence on citizens' participation intention to urban community environmental governance, which may be due to inadequate measures taken by local governments (e.g. environmental governance publicity, imperfect channels of citizens' participation, and simple methods of participation). Due to the similar external pressure perceived by citizens, the behavior of family members, friends, colleagues, classmates and superiors have few incentives to citizens' willingness in participation. As a result, subjective norms have no significant impact on citizens' participation intention to urban community environmental governance (Rejection of H8).

**Perceived Behavioral Control has a Positive and Significant Impact on Citizens' Participation Intention to Urban Community Environmental Governance**

Perceived behavioral control is the most dominant factor on citizens' participation intention with a path coefficient of 0.676. Perceived behavioral control of citizen participation in environmental governance refers to the degree that opportunities and resources possessed by citizens inspire them to engage in environmental governance of urban communities. The fact that the vast majority of respondents argue that they had no time to participate in community environmental governance during interviews. Stronger participation intention of citizens to environmental governance is related to time, capacity and material condition. In Table 7, Observed variables of citizens' perceived behavioral control are time guarantee (PBC1), material guarantee (PBC2) and ability guarantee (PBC3), all of which are significant at the level of 1%.The effect levels of these factors successively are PBC3 (0.873), PBC1 (0.817) and PBC2 (0.618), which indicates that citizens' perceived behavioral control is affected by the three factors in citizens' participation intention to urban community environmental governance, while the ability take the dominant place among these influencing factors.

Self-efficacy and convenient conditions, are significant at the level of 1%, with path coefficients of 0.511 and 0.458 in two latent variables of perceived behavioral control. Both of them have a significant impact on citizens' participation intention to environmental governance. Self-efficacy, according to results, plays an important role (Acceptance of H5) influenced by three factors: participation way (SE1), participation requirement (SE2) and participation quality (SE3), all of which are significant at the level of 1% with path coefficients of 0.720, 0.692 and 0.890 respectively. It shows that whether citizens are able to find a way to participate in environmental protection activities and how familiar they are with regulations and systems relevanting to environmental protection activities and whether they have the capacity to participate in activities, which have a significant relationship with citizens' perceived self-efficacy.

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Moreover, from the perspective of citizens, self-efficacy is able to incentive perceived behavioral control to inspire themselves to engage in environmental governance.

Considering variables in convenient conditions, convenient ways of environmental governance (CC1), convenient time (CC2) and complete conditions (CC3) are all significant at the level of 1% with path coefficients of 0.899, 0.890 and 0.904 respectively. Convenient conditions was proved to be a significantly positive factor in items that whether citizens know the way to participate and whether it conflicts with their time and whether relevant departments provide conditions for participation. Furthermore, conditions provided by governments for participation is the principal factor in ease perceived of citizens. The results also indicates that the conditions provided by government for citizens to participate in urban community environmental governance have a significant impact on their perceived behavioral control. Thus it has a positive relevance to citizens' participation intention.

## DISCUSSION

This study based on survey data from three eco-cities in Fujian province and structural equation modeling (SEM), aiming to reveal what factors are able to incentive citizens' intention about participating in urban community environmental governance. Firstly, the average values of citizens' participation intention in Fuzhou and Xiamen are 3.84 and 3.94 respectively with a high level while the average value of intention is 2.25 in Quanzhou (i.e. a low participation intention). Secondly, the influencing factors of citizens' participation intention to urban community environmental governance based on DTPB theoretical model have been verified in our study. The attitude and perceived behavioral control of citizens to participate in urban community environmental governance have a positive correlation with their participation intention to governance, among which perceived behavioral control is the dominant factor in citizens' participation intention while subjective norms have no significant impact on their participation intention. Thirdly, among all antecedents, perceived usefulness and perceived compatibility are positively related to attitude, while perceived ease of use has a negative effect on attitude. Two antecedents of perceived behavioral control (i.e. self-efficacy and convenient conditions) have a positive relationship with perceived behavioral control. Fourthly, perceived usefulness and perceived compatibility affect positively and indirectly citizens' participation intention to urban community environmental governance through attitudes. But perceived ease of use is indirectly and negatively related to citizens' participation intention to urban community environmental governance through attitudes. Self-efficacy and convenient conditions indirectly and positively affect citizens' participation intention to urban community environmental governance through perceived behavioral control.

From the proposal of constructing the national governance system and the modernization of governance ability put forward at the Third Plenary Session of the 18th CPC Central Committee to the proposal of promoting the modernization of the national governance system and governance ability put forward at the Fourth Plenary Session of the 19th CPC Central Committee, the governance concept has been widely spread and citizens' awareness of environmental protection participation is enhancing constantly. It shows that citizens' awareness of participation in urban environmental governance is the key to the construction of beautiful cities. With the increasing pressure about environment protection in the process of urbanization, citizens have become one of the main components in the urban governance network and play an extremely critical role in urban community environmental governance. Every citizen is an active factor that affects the quality of urban environment. In fact, citizens' consciousness is also subject to the influence of the external and citizens' internal standards. With development of citizens' environmental awareness, citizens are aware of the importance and necessity about active participation in environmental governance. Moreover citizens are rational people in collective actions, whose psychological and cognitive factors (e.g. attitudes, subjective norms and perceived behavior control) will affect their participation consciousness, restricting and affecting their behavior. Institutional guarantee will alter their public choice behavior to

participate in community environmental governance. However, it still needs more efforts in many parties to convert the willingness into citizens' awareness to participate actively in practice. Furthermore, the perception incentives that inspire citizens to engaging in governance rationally and orderly guided is needed. Public value has complex dimensions (e.g. achievement of results, trust legitimacy, quality and efficiency of service supply), which highlights the public expression from the governance subject, the public utility of the object and the oriented public welfare. Environmental governance belongs to the scope of public value governance, which not only reflects citizens' rational thinking, but also comes from the scientific and effective formulation and implementation of government environmental policies, requiring effective and active publicity by the media. Meanwhile the construction of more extensive channels and scientific ways of citizens' participation are indispensable as well.

Therefore, there are two aspects to improve citizens' participation in urban community environmental governance behavior and its effectiveness: citizens' attitude towards participating in urban community environmental governance and perceived behavioral control. We proposed three suggestions in this study. First of all, as citizens' attitudes are mainly affected by perceived usefulness and perceived compatibility, the government should, based on the concept of public value governance, improve the propagation as well as education system in community environmental governance and cultivate citizens' It is essential to stress importance on environmental awareness and values cultivation to inspire them to participate in community environmental governance and promote the community construction of community environmental governance. The authority should effectively improve citizens' participation awareness and behavior and improve the collaborative force to govern community environment, leading to improve their initiative and effectiveness. Secondly, Perceived behavior control is the primary factor in citizen participation among the three core intermediary variables. Therefore the government should construct a mechanism to mobilize citizens to participate effectively and update the information disclosure system and enhance their awareness of the ways, policies and current situations about environmental governance engagement, imposing incentive policies, environmental governance laws and regulations to participate in community environmental governance, which aims to create a positive and convenient environment for their participation in order to ensure their enthusiasm and sustainability of participating. Third, the government should strengthen the improvement of the community environmental execution and governance system to promote the participation of citizens in urban community environmental governance with the assistance of science and technology. Thus citizens' willingness and ability to participate in environmental governance is enable to be enhanced to promote the modernization of urban community environmental governance system and governance capability.

## Author Declaration

This research is not funded by any organization related to tobacco production.

## Conflicts of Interest Disclosure Statement

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