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Using the Theory of Planned Behavior to Examine the Sustainable Extension of Rural Food Preparation Techniques

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Abstract: Social transformation has caused traditional rural food preparation techniques and cultural heritage to disappear gradually. Traditional rural women are in charge of rural traditional food preparation techniques, which they inherit through the family. Therefore, this study primarily aimed to employ the theory of planned behavior (TPB) to analyze the effects of attitudes toward rural food preparation techniques, subjective norms, and perceived behavioral control on behavioral intention to ultimately understand the behavioral intention of rural women in the sustainable extension of rural food preparation techniques. The TPB was utilized as a basis for conducting a quantitative study using questionnaire surveys. Purposive sampling and snowball sampling were employed, and 800 questionnaires were distributed. In total, 649 valid questionnaires were collected, and the recovery rate was 81.1%. The study tools used included the attitude scale, subjective norms scale, perceived behavioral control scale, and behavioral intention scale. The data were analyzed using confirmatory factor analysis, descriptive statistics, Pearson product difference correlation analysis, and multiple regression analysis. The results showed that attitudes toward rural food preparation techniques, subjective norms, and perceived behavioral control in rural women significantly affected the behavioral intention of sustainable extension. These results can provide agricultural organizations and relevant units with a reference for the sustainable extension of traditional food preparation techniques.

Keywords: rural women; theory of planned behavior; rural food preparation techniques; sustainable extension

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1. Introduction

1.1. Motivation for the Study

In the early traditional Taiwanese agriculture industry, men were predominantly the main labor force, whereas women mostly focused on tending to the family. However, due to population migration and insufficient young manpower, the number of rural women engaging in agriculture started to rise. Urbanization, industrialization, loss of able-bodied populations in villages, the aging of agriculture workers, and failure of agricultural policies have been accompanied by a gradual loss of traditional rural food preparation techniques, knowledge, and culture [1].

The spread of traditional cuisine represents intergenerational transmission, which occurs within the core of family dietary habits. Food is not only a means of survival, but is also a form of culture and is often considered a way of understanding and appreciating

local culture [2]. Food is affected by social, historical, and cultural development and is transmitted through generations. This means that it can contribute to the uniqueness and differentiation of foods as it is compared from one place to another. Food is considered a form of local cultural heritage [3] and the main channel for expressing different regional cultural practices and traditions [4]. According to UNESCO [5], culinary traditions are part of an intangible cultural heritage under the domain of social practices, rituals, and festive events. To members of the public, food demonstrates the importance of a culture's uniqueness and differences based on historical, aesthetic, social, and symbolic meanings.

Researchers have demonstrated that gender roles and expectations are reproduced through food. Cooking at home is a gendered behavior naturally attributed to women as a part of care work in heterosexual families [6]. Women transmit and store recipes between different generations through oral and written means [7,8]. However, mothers may be unable to teach culinary techniques to the next generation due to the decreasing skills of home cooks [9]. The decline in family functioning leads to the loss of traditional rural cuisines and hinders the sustainability of food preparation techniques. According to Lee et al. [10], agricultural experts argue that the operation of the agricultural market is the primary development focus of local food culture inheritance and promotion innovation. The household economy organizations maintain that education, training, extension, and development are the primary development priorities of rural food preparation technology.

Nor et al. [8] pointed out that transferring traditional food preparation techniques, including traditional ingredients, ingredients preparation, cooking methods, cooking equipment, and cooking skills, through oral communication, observation, and hands-on methods, provide the next generation with traditional dietary knowledge. Preserving traditional food preparation techniques is critical for traditional food preparation techniques and traditional food culture, which contributes to preserving the national cultural identity. Therefore, the sustainable extension of food preparation technology includes traditional food preparation technology, the inheritance of local food culture, and teaching methods to carry out sustainable technology extension so that the traditional food preparation technology in rural areas can be extended and inherited in multiple ways, and rural traditional food preparation techniques and rural food history and culture can be preserved.

Hardin-Fanning and Ricks [11] demonstrated that the framework provided by the theory of planned behavior (TPB) can be used to assess the views of individuals regarding behavior change values, design personalized intervention measures for specific values, and formulate results and assessment standards based on the reasons for individual behavioral changes. Kim [12] previously used the TPB as a research basis to investigate home cooking behavioral factors based on motivation, attitudes, subjective norms, and control beliefs regarding cooking behavior. The study results showed that employment status, income, control belief, number of children, and behavioral intention were important predictors of cooking behavior. Moreover, Atabay et al. [13] previously employed the TPB as a research basis to examine the choices of healthy cooking methods by rural women. The study results confirmed a significant correlation between attitudes, subjective norms, perceived behavioral control, and behavioral intention, with subjective norms being a significant predictor of behavior and perceived behavioral control being a significant predictor of intention. Therefore, the TPB can be used in behavior prediction and assessment. The current study focused on rural food preparation technique owners and studied the degree of behavioral intention in sustainable extension to determine the primary factors of the sustainable extension of rural food preparation techniques.

Hence, traditional foods represent the history and culture of a place, and women are regarded as the owners of traditional food preparation techniques. However, due to industrialization, modernization, and the gradual loss of family functioning, traditional food preparation techniques are currently declining, which obstructs the sustainable development of traditional cuisines and food preparation techniques. Therefore, this study aimed to determine how to carry out the sustainable extension of rural food preparation techniques and identify the main factors driving owners of rural food preparation techniques. Hence,

the TPB by Ajzen [14] was used as a basis to explore the effects of attitudes, subjective norms, and the perceived behavioral control of those who possess rural food preparation techniques on sustainable extension behavioral intention. The results of this study can be used as a reference for future research related to rural women, rural traditional food preparation, extension inheritance, and the teaching of rural traditional dietary knowledge.

1.2. Rural Food Preparation and Theory of Planned Behavior

The rise of gender equality awareness in Taiwan's rural areas has enabled gender equality in agriculture to increase [15]. Therefore, women often play an active role in agriculture labor, agriculture operations, traditional culture dissemination outside of housework, environmental education, and public affairs. Women make many important contributions to rural villages, and farms managed by women often have multiple functions. The contributions of women are essential in short-term food supply chains, as women are better able to integrate into communities and establish social connections, trust, and reciprocity, implying that production and consumption operations return to the dimensions of human socializing and agricultural crop production, and related activities are no longer isolated entities [16].

Besides agriculture labor and operations, rural women also play a vital role in the sustainable development, food security, and extension and preservation of culinary techniques [17]. According to past tradition, women are masters of traditional food preparation techniques and knowledge, which are transmitted by grandmothers and mothers to their daughters and granddaughters through generations. Via this method, culinary knowledge has been accumulated and transmitted for centuries [1,7]. Shariff et al. [18] pointed out that mothers are the main promoters of traditional cuisine and culinary learning to the next generation and students of food preparation techniques [9]. In addition, Braun and Beckie [1] underlined that the family relationships, friendships, and social networks of rural women play a crucial role in the sustainable practice of traditional rural food preparation techniques and knowledge. Therefore, it can be argued that rural women possess extensive traditional cooking techniques and play an indispensable role in sustainable extension [19].

Hardin-Fanning and Ricks [11] previously employed the TPB to examine the effects of the attitudes, subjective norms, and perceived behavioral control of cooking technique by participants on their behavioral intention. Ajzen [20] proposed the TPB model, stating that an individual's behavioral intention will affect their behavior and that behavioral intention is impacted by three dimensions, namely attitudes, subjective norms, and perceived behavioral control. Ajzen [14] stated that the concepts of the TPB are as follows: (1) attitudes, that is, the degree to which a person has a favorable or unfavorable evaluation of the behavior of interest; (2) subjective norms, that is, whether or not an individual adopts a particular behavior is influenced by perceived social pressure arising from socially related groups or important people (family members, peers); (3) perceived behavioral control, which refers to the difficulty and mastery perceived by an individual when adopting specific behaviors; and (4) behavioral intention, that is, the willingness of an individual to perform a specific behavior.

In summary, although the agriculture industry has started moving in the direction of gender equality and women have many strengths and make numerous contributions to agriculture and food production, food preparation techniques in Taiwanese villages are still mainly owned by women, and they are the main technical promoters of the sustainable extension of rural food preparation techniques. Hence, this study used the TPB as a basis for understanding the behavioral intention of rural women toward owning rural food preparation techniques. We aimed to determine the main factors of the sustainable extension of rural food preparation techniques.

1.3. Related Studies on the Food Preparation Technique Extension

Gartaula et al. [21] found that food preparation techniques and knowledge are developed and learned through formal and informal channels. For example, festivals are used to promote rural traditional gastronomy knowledge, practices, and traditional food

preparation methods [18]. This involves setting up food preparation courses in schools and food preparation activities as part of communal activities [22], promoting home cooking as a family activity, emphasizing equal division of labor and emotional care, and allowing children to participate in food preparation [23,24], setting up culinary experience courses so that tourists can participate in experiencing traditional food preparation and accordingly promote and learn culture [25,26], and promoting traditional cuisine and food in religious organizations [27]. Therefore, food preparation courses can effectively promote the food and culture sustainable extension and practice while also increasing interest in sharing food and techniques [28].

In summary, the extension and sustainable development of food preparation techniques is carried out through many channels. Informal channels for the sustainable extension of food preparation techniques include daily cooking in families, the extension of communities' traditional food preparation activities, food fairs on religious and festive occasions, and even culinary experience courses for tourists. Additionally, course design and planning in schools are important means to sustainably promote food preparation techniques via formal channels.

To understand the intention of the promoters of sustainable rural food preparation techniques, the TPB by Ajzen [14] was used as the basis of this study to examine the effects of the different dimensions of the sustainable extension of rural food preparation techniques on behavioral intention. Many previous studies have used the TPB to investigate the behavioral intention of consumers toward cultural tours [29–31]; however, few studies have applied the TPB to assess behavioral intention of the sustainable extension for food preparation techniques. The literature review of this study demonstrates that previous researchers have used the TPB to predict behavioral intention and that attitudes, subjective norms, and perceived behavioral control have positive effects on behavioral intention. However, no study has used the TPB to investigate the behavioral intention of the sustainable extension of rural food preparation techniques. Therefore, this study employed the TPB to examine the effects of attitudes, subjective norms, and perceived behavioral control of the sustainable extension for rural food preparation techniques on behavioral intention.

Based on the above literature review, the TPB was utilized as the theoretical framework for this study, and the following hypotheses were proposed:

Hypothesis 1 (H1). *There is a correlation between the attitudes, sustainable extension, perceived behavioral control, and behavioral intention of the sustainable extension of rural food preparation techniques;*

Hypothesis 2 (H2). *The attitudes, sustainable extension, and perceived behavioral control of the sustainable extension of rural food preparation techniques are significant predictors of behavioral intention.*

2. Materials and Methods

2.1. Design and Sample

This study was quantitative and was based on questionnaire surveys. Purposive sampling and snowball sampling were used. According to Shariff et al. [18], women play a critical role in rural development. Traditional rural food preparation techniques are mainly transmitted by women [7,19]; hence, this study aimed to understand the intention of rural women in the sustainable extension of rural food preparation techniques. In the current work, the TPB by Ajzen [14] was used as a study foundation, and the architecture of this study comprised the results of related studies on the sustainable extension of food preparation techniques [10,11,32–34] (Figure 1). This study used multiple regression to analyze the relationship between attitudes, subjective norms, and perceived behavioral control on the behavioral intentions of the sustainable extension of rural food preparation technology. In consideration of study validity and sample representativeness in this work, the sampling targeted rural women from different regions in northern (Taipei City, New Taipei City, Keelung City, Yilan County, Taoyuan City, Hsinchu County), central (Miaoli

County, Taichung City, Changhua County, Yunlin County, Nantou County), southern (Chiayi County, Tainan City, Kaohsiung City, Pingtung County), and eastern Taiwan (Hualien County, Taitung County) through coordination with Taiwan agricultural extension units. People who lived in villages and promoted or taught food preparation were recruited as participants for the current project. In total, 800 questionnaires were distributed for this study, with 649 valid questionnaires collected, yielding a valid recovery rate of 81.1%. SPSS 25.0 for Windows was employed for questionnaire data analysis to validate the study hypotheses.

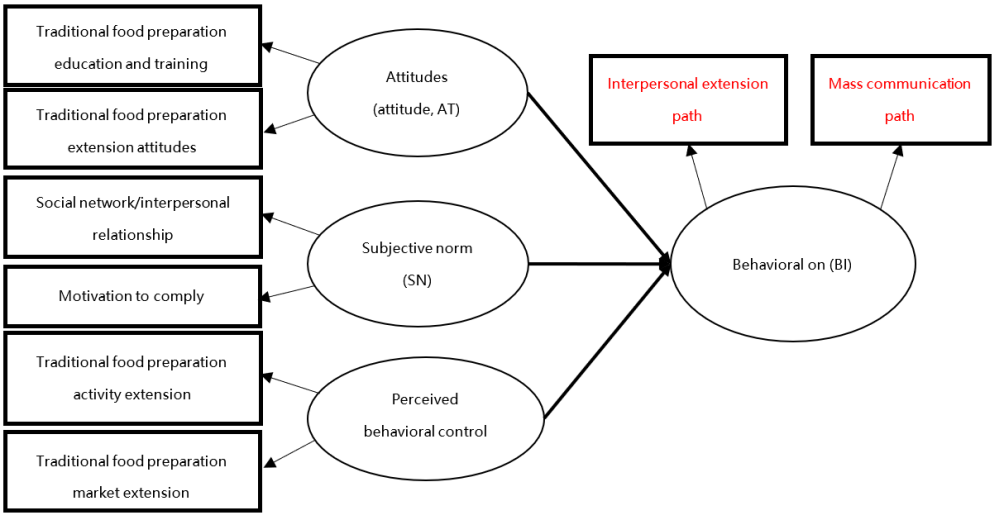

Figure 1. Study framework map.

2.2. Study Tools

An expert focus group was set up for the questionnaire design in this study. The group consisted of five promoters of food preparation techniques with 10 or more years of experience, three university catering professors, and three university agricultural extension professors. The various questions of the TPB scale of this study were designed and tested based on the project's needs. The study questionnaire was formulated after discussion within the expert focus group. Therefore, the content validity of the measurement tools was reviewed by the expert group.

2.2.1. Personal Background Questionnaire

This scale was mainly used to determine the subject's age, time spent promoting or teaching food preparation techniques, region, confidence in using food preparation techniques for extension or teaching, and other personal background items.

2.2.2. Theory of Planned Behavior Scale

This scale was revised based on the theoretical foundations of Ajzen [14] and was mainly used to determine the effects of attitudes, sustainable extension, and perceived behavioral control on the behavioral intention of the sustainable extension of rural food preparation techniques. This study scale measures different dimensions, and a seven-point Likert scale was utilized for scoring. A higher score meant a greater agreement for the dimension, whereas a lower score meant lower agreement. The Cronbach's α coefficients (internal consistency) for the various scales were: 0.902, 0.890, 0.921, and 0.922 for the attitudes, subjective norms, perceived behavioral control, and behavioral intention scales, respectively. Finally, the validity of the scale was tested. This research used confirmatory factor analysis. The results of the analysis of the 34 items prepared for the test were compared with the original structure, and all items fall into the established factors.

2.2.3. Confirmatory Factor Analysis

Confirmatory factor analysis (CFA) is used to confirm whether the data model is in the form expected by the researcher, and has the function of theoretical testing and confirmation. Accordingly, the variables proposed in the confirmatory factor analysis of this study are shown in Table 1.

Table 1. Confirmatory factor analysis.

Dimension		Topic	Factor Loading	Cronbach's α	Explained Variance
		Attitudes		0.902	
Traditional food preparation education and training	1.	I think it is important to learn rural food preparation techniques from rural elders.	0.814	0.79	61.696
	2.	I think it is important to participate in education and training in food preparation techniques run by government units.	0.809		
	3.	I think performing demonstrations with reference to online media (e.g., Youtube/Facebook) is important for learning rural food preparation techniques.	0.762		
	4.	I think it is important to watch and learn the food preparation techniques of famous chefs.	0.756		
Traditional food preparation extension attitudes	5.	I think it is important to extend rural food preparation techniques to the next generation of family members (children or grandchildren).	0.856	0.868	62.905
	6.	I think it is important to get rural food preparation techniques out to young people (or students).	0.833		
	7.	I think it is important to spread rural food preparation techniques to friends and family.	0.81		
	8.	I think it is important to have rural food preparation techniques in printed books.	0.806		
	9.	I think it is important to make videos of rural food preparation techniques available to the general public.	0.762		
	10.	I think it is very important to make rural food preparation technology a cross-regional extension education exchange activity.	0.678		
		Subjective norms		0.890	
Social network/interpersonal relationship (M = 5.77)	11.	My family supports my involvement in the extension of rural food preparation techniques.	0.927	0.921	80.857
	12.	My friends support me to participate in the extension of rural food preparation technology.	0.918		
	13.	My colleagues support my participation in the extension of rural food preparation technology.	0.896		
	14.	My farmer's association instructor supports me to participate in the extension activities of rural food preparation technology.	0.853		

Table 1. *Cont.*

Dimension		Topic	Factor Loading	Cronbach's α	Explained Variance
Motivation to comply (M = 5.42)	15.	I will refer to the opinions of my family members to decide whether to participate in the extension activities of rural food preparation technology.	0.906	0.888	75.335
	16.	I will refer to the opinions of my friends and decide whether to participate in the extension activities of rural food preparation technology.	0.871		
	17.	I will refer to the opinions of my colleagues to decide whether to participate in the extension activities of rural food preparation technology.	0.86		
	18.	I will refer to the opinions of the instructors of the farmers' association to decide whether to participate in the extension activities of rural food preparation technology.	0.833		
Perceived behavioral control (M = 5.70)				0.921	
Traditional food preparation activity extension (M = 5.97)	19.	I use rural food preparation techniques to cook gourmet meals for festivals and events.	0.884	0.879	69.434
	20.	I use rural food preparation techniques to cook gourmet meals at family dinners.	0.861		
	21.	I use rural food preparation techniques to cook meals for friends over dinner.	0.855		
	22.	I cook meals using rural food preparation techniques while attending religious services.	0.787		
	23.	I will use rural food preparation techniques to cook local specialties.	0.774		
Traditional food preparation market extension (M = 5.44)	24.	I can use rural food preparation techniques to create gourmet meals with commercial appeal.	0.915	0.922	76.216
	25.	I can make commercial baked products using rural food preparation techniques.	0.893		
	26.	I can make rural souvenirs using rural food preparation techniques.	0.887		
	27.	I can use rural food preparation techniques to create customized meals in response to marke needs.	0.866		
	28.	I can preserve traditional culinary flavors using rural food preparation techniques.	0.799		
Behavioral intention (M = 5.33)				0.922	
Interpersonal extension path (M = 5.64)	29.	I would like to take a dictation for a sustainable extension of rural food preparation techniques.	0.942	0.873	88.726
	30.	I am willing to carry out the sustainable extension of rural food preparation technology by means of demonstration and practice.	0.942		

Table 1. *Cont.*

Dimension		Topic	Factor Loading	Cronbach's α	Explained Variance
Public extension path (M = 5.17)	31.	I would like to write a textbook for sustainable extension of rural food preparation techniques.	0.903	0.907	78.477
	32.	I am willing to use the way of practical demonstration teaching to carry out sustainable extension of rural food preparation technology.	0.897		
	33.	I am willing to use the method of video teaching to carry out sustainable extension of rural food preparation technology.	0.879		
	34.	I would love to be a Youtuber for a sustainable extension of rural food preparation techniques.	0.864		

2.2.4. Data Analysis

In this study, the survey results were analyzed using SPSS 25.0 for Windows statistical software (IBM, Armonk, NY, USA) to verify the research hypotheses. In this study, the age of the participants, the time when they were engaged in the extension or teaching of food preparation technology, and the area where they were located were determined by the frequency distribution and percentage. Furthermore, the participants' attitudes, subjective norms, and perceived behavior were determined by the mean and standard deviation, status quo of control, and behavioral intention. In addition, Pearson's correlation analysis was performed to understand the correlation between variables to verify hypothesis H1 of this study. Finally, we used multiple regression analysis to verify hypothesis H2 of this study.

3. Results

3.1. Respondent Profiles

Of the 649 respondents, 14 (2.2%) were aged 21–30, 42 (6.5%) were aged 31–40, 83 (12.8%) were aged 41–50, and 510 (78.6%) were aged 51 and above, with the latter accounting for most of the respondents. Regarding the extension or teaching duration for food preparation techniques, 278 (42.8%) had <5 years of experience, 114 (17.6%) had 6–10 years of experience, 89 (13.7%) had 11–15 years of experience, 57 (8.8%) had 16–20 years of experience, and 111 (17.1%) had 21 or more years of experience. In terms of place of residence, 200 (30.8%) were from northern Taiwan, 207 (31.9%) were from central Taiwan, 158 (24.4%) were from southern Taiwan, and 84 (12.9%) were from eastern Taiwan.

3.2. Current Status of Sustainable Extension of Rural Food Preparation Techniques

Table 2 shows the current status of the sustainable extension of rural food preparation techniques; the higher the mean score, the greater the agreement for the question. The statistical results showed that attitudes (M = 6.19) had the highest mean score, thus demonstrating that the respondents felt that the sustainable extension of rural food preparation techniques was extremely important.

3.3. Correlation Analysis of the Sustainable Extension of Rural Food Preparation Techniques

Table 3 (Pearson's correlation) shows the analysis of the relationship between various rural food preparation techniques and sustainable extension variables. The results showed a significant positive correlation between traditional food preparation education and training, traditional food preparation extension, social network/interpersonal relationship, motivation to comply, traditional food preparation activity extension, traditional food preparation market extension, interpersonal extension path, public extension path, atti-

tudes, subjective norms, perceived behavioral control, and behavioral intention. Therefore, the study variables have some correlation.

Table 2. Current status of the sustainable extension of rural food preparation techniques.

Dimension	Topic	Mean (M)	Standard Deviation (SD)
Attitudes (M = 6.19)			
Traditional food preparation education and training (M = 6.15)	35. I think it is important to learn rural food preparation techniques from rural elders.	6.12	0.876
	36. I think it is important to participate in education and training in food preparation techniques run by government units.	6.32	0.770
	37. I think performing demonstrations with reference to online media (e.g., YouTube/Facebook) is important for learning rural food preparation techniques.	6.01	0.922
	38. I think it is important to watch and learn the food preparation techniques of famous chefs.	6.15	0.825
Traditional food preparation extension attitudes (M = 6.22)	39. I think it is important to extend rural food preparation techniques to the next generation of family members (children or grandchildren).	6.42	0.696
	40. I think it is important to get rural food preparation techniques out to young people (or students).	6.39	0.681
	41. I think it is important to spread rural food preparation techniques to friends and family.	6.31	0.707
	42. I think it is important to have rural food preparation techniques in printed books.	5.93	1.040
	43. I think it is important to make videos of rural food preparation techniques available to the general public.	6.12	0.879
	44. I think it is very important to make rural food preparation technology a cross-regional extension education exchange activity.	6.17	0.817
Subjective norms (M = 5.60)			
Social network/interpersonal relationship (M = 5.77)	45. My family supports my involvement in the extension of rural food preparation techniques.	5.73	1.145
	46. My friends support me in participating in the extension of rural food preparation technology.	5.70	1.129
	47. My colleagues support my participation in the extension of rural food preparation technology.	5.75	1.116
	48. My farmer's association instructor supports me in participating in the extension activities of rural food preparation technology.	5.90	1.056
Motivation to comply (M = 5.42)	49. I will refer to the opinions of my family members to decide whether to participate in the extension activities of rural food preparation technology.	5.41	1.341
	50. I will refer to the opinions of my friends and decide whether to participate in the extension activities of rural food preparation technology.	5.16	1.458

Table 2. *Cont.*

Dimension		Topic	Mean (M)	Standard Deviation (SD)
Motivation to comply (M = 5.42)	51.	I will refer to the opinions of my colleagues to decide whether to participate in the extension activities of rural food preparation technology.	5.43	1.299
	52.	I will refer to the opinions of the instructors of the farmers' association to decide whether to participate in the extension activities of rural food preparation technology.	5.69	1.128
Perceived behavioral control (M = 5.70)				
Traditional food preparation activity extension (M = 5.97)	53.	I use rural food preparation techniques to cook gourmet meals for festivals and events.	5.71	1.166
	54.	I use rural food preparation techniques to cook gourmet meals at family dinners.	6.20	0.796
	55.	I use rural food preparation techniques to cook meals for friends over dinner.	6.14	0.869
	56.	I cook meals using rural food preparation techniques while attending religious services.	5.87	1.076
	57.	I will use rural food preparation techniques to cook local specialties.	5.95	0.980
Traditional food preparation market extension (M = 5.44)	58.	I can use rural food preparation techniques to create gourmet meals with commercial appeal.	5.39	1.296
	59.	I can make commercially baked products using rural food preparation techniques.	5.33	1.370
	60.	I can make rural souvenirs using rural food preparation techniques.	5.53	1.276
	61.	I can use rural food preparation techniques to create customized meals in response to market needs.	5.30	1.394
	62.	I can preserve traditional culinary flavors using rural food preparation techniques.	5.64	1.126
Behavioral intention (M = 5.33)				
Interpersonal extension path (M = 5.64)	63.	I would like to take dictation for a sustainable extension of rural food preparation techniques.	5.64	1.098
	64.	I am willing to carry out the sustainable extension of rural food preparation technology by means of demonstration and practice.	5.65	1.120
Public extension path (M = 5.17)	65.	I would like to write a textbook about the sustainable extension of rural food preparation techniques.	5.26	1.343
	66.	I am willing to use the way of practical demonstration teaching to carry out the sustainable extension of rural food preparation technology.	5.33	1.403
	67.	I am willing to use the method of video teaching to carry out the sustainable extension of rural food preparation technology.	5.16	1.448
	68.	I would love to be a YouTuber for a sustainable extension of rural food preparation techniques.	4.91	1.618

Table 3. Correlation coefficients of various rural food preparation techniques' sustainable extension dimensions.

Aspects	1	2	3	4	5	6	7	8	9	10	11	12
Traditional food preparation education and training	1											
Traditional food preparation extension attitudes	0.738 **	1										
Social network/interpersonal relationship	0.461 **	0.508 **	1									
Motivation to comply	0.291 **	0.314 **	0.457 **	1								
Traditional food preparation activity extension	0.495 **	0.537 **	0.594 **	0.415 **	1							
Traditional food preparation market extension	0.411 **	0.460 **	0.522 **	0.384 **	0.629 **	1						
Interpersonal extension path	0.404 **	0.465 **	0.585 **	0.350 **	0.603 **	0.703 **	1					
Public extension path	0.396 **	0.445 **	0.565 **	0.311 **	0.517 **	0.726 **	0.765 **	1				
Attitudes	0.905 **	0.954 **	0.523 **	0.326 **	0.556 **	0.470 **	0.470 **	0.455 **	1			
Subjective norms	0.434 **	0.474 **	0.832 **	0.874 **	0.584 **	0.526 **	0.538 **	0.503 **	0.490 **	1		
Perceived behavioral control	0.492 **	0.543 **	0.610 **	0.439 **	0.866 **	0.934 **	0.730 **	0.706 **	0.559 **	0.607 **	1	
Behavioral intention	0.419 **	0.474 **	0.600 **	0.339 **	0.570 **	0.757 **	0.876 **	0.981 **	0.483 **	0.540 **	0.750 **	1

Note: ** $p < 0.01$, $n = 649$.

3.4. Multivariate Regression Analysis of the Sustainable Extension of Rural Food Preparation Techniques

In this study, a multivariate regression analysis was used to test the explanatory power of attitudes, subjective norms, and perceived behavioral control for behavioral intention. The results are as follows.

Table 4 shows that, regarding the sustainable extension of rural food preparation techniques, attitudes, subjective norms, and perceived behavioral control had a predictive power of 57.5% ($R^2 = 0.575$, $p < 0.001$) for behavioral intention, demonstrating that the participants' attitudes, sustainable extension, and perceived behavioral control had significant positive effects on the sustainable extension of rural food preparation techniques. Among them, subjective norms (t = 3.541, $p < 0.001$) and perceived behavioral control (t = 18.416, $p < 0.001$) had the greatest effects on behavioral intention.

Table 4. Regression analysis of the sustainable extension of rural food preparation techniques ($n = 649$).

Variable	Non-Standardized Coefficient		Standardized Coefficient	*t*-Value
	Estimated B	Standard Error	Beta Distribution	
Attitudes	0.128	0.060	0.067	2.117 *
Subjective norms	0.147	0.041	0.117	3.541 ***
Perceived behavioral control	0.834	0.045	0.641	18.416 ***
R^2		0.577		
Adjusted R^2		0.575		
F-statistic		292.977 ***		

Note: * $p < 0.05$, *** $p < 0.001$.

4. Discussion

The results of this study echo those of previous studies, such as the work of Shariff et al. [18], who pointed out that rural women play a vital role in traditional food preparation education and training. Therefore, when the sustainable extension of rural food preparation techniques is more recognized, its behavioral intention can be carried out. Suminah and Anantanyu [34] and Haddaji, Albors-Garrigós, and García-Sigovia [35] argue that the behavioral intention of rural women in the sustainable extension of rural food preparation techniques is affected by people around them, particularly technical instructors, fellow students, and work colleagues. Therefore, there should be more focus on the social support system for rural women because a good social system results in better subjective norms, which in turn increases the behavioral intention for the sustainable extension of rural food preparation techniques. Shariff et al. [18] highlight that rural women promote rural traditional gastronomy knowledge and practices as well as traditional food preparation methods during festive activities. Therefore, the better the rural women are able to control the extension sites for rural food preparation techniques and demonstrate their traditional cuisine techniques, the better their perceived behavioral control, and the higher their behavioral intention.

In the sustainable extension of rural food preparation techniques, advances in technology have enabled extension methods to be no longer restricted by the sites, and online courses and videos have become the epitome of education [36]. This study found that most respondents agreed with the interpersonal extension path and public extension, particularly underlining the importance of videos and online learning for public extension. Therefore, sustainable extension behavior should not only rely on narration, demonstration, and drafting. Teaching materials (textbooks) and videos should also be used for the sustainable extension of rural food preparation techniques. In particular, setting up culinary-related YouTube channels and videos is extremely useful for promoting and learning food preparation techniques [33].

In summary, this study found that the sustainable extension of rural food preparation techniques should be mostly used at gatherings with friends and family because connecting interpersonal relationships through food and food tastes in daily life allows people to pass seasoning and techniques of traditional rural food from one generation to the next. In addition, festivals and ancestral-worship customs are common in Taiwan, and also in these periods, rural women demonstrate food preparation techniques. Traditional festivals and traditional customs make it possible for rural cooking techniques and food culture to be passed down from one generation to another, allowing traditional culture to be promoted. Besides a face-to-face extension between people, online extension methods (such as synchronous or asynchronous online extension videos) should be mastered, as these will be crucial channels for the sustainable extension of rural food preparation techniques.

5. Conclusions

The results of this study showed that the improved attitudes, subjective norms, and perceived behavioral control of rural women could better predict the behavioral intention of sustainable extension. The current study employed the TPB model to examine the behavioral intention of the sustainable extension of rural food preparation techniques and found that TPB dimensions (attitudes, sustainable extension, and perceived behavioral control) are predictors of behavioral intention. Few previous studies have employed the TPB to assess behavioral intention of the sustainable extension of food preparation techniques. Hence, this is one of the innovative contributions of the present study.

The main finding of this study is that the behavioral intention of the sustainable extension of rural food preparation techniques (interpersonal extension path and public extension path) is affected by attitudes (traditional food preparation education and training, traditional food preparation extension attitudes), subjective norms (social network/interpersonal relationship, motivation to comply), and perceived behavioral control (traditional food preparation activity extension, traditional food preparation market extension). The higher the attitudes, subjective norms, and perceived behavioral control toward rural food preparation techniques in rural women, the better they are able to carry out the sustainable extension behavior for rural food preparation techniques. Therefore, the study results showed that attitudes, sustainable extension, and perceived behavioral control could predict behavioral intention and showed significant positive correlations.

The results of this study revealed that the respondents had the highest mean score for rural food preparation techniques and sustainable extension attitudes. However, the regression model test results showed that sustainable extension attitudes were not the main driver, whereas social network/interpersonal relationship and perceived behavioral control were the dimensions with the greatest impact. This is because a mastery of self-control and social network support is key for championing sustainable extension. This result echoes the results of studies by Braun and Beckie [1] and Shariff et al. [18] and is the most significant contribution of the current study.

Research Limitations

This work used questionnaires to investigate the sustainable extension of rural food preparation techniques, and TPB was employed as the study foundation. Due to the limitations of quantitative studies, we were unable to obtain non-scale data, and the data results from the subjective views of the respondents were analyzed. Therefore, the results of this study are limited only to Taiwanese rural women's views on the sustainable extension of rural food preparation techniques and cannot be generalized to men and other regions. There are many aspects of the sustainable extension of rural food preparation techniques, but this work only explored the surveyed dimensions. Hence, the study results cannot be generalized to other aspects. This study used the TBP theory as the research framework, which was further demonstrated and extended in the design of this study. This study revised the framework of the theory; however, according to the investigation purpose of this study, it is still applicable to the framework design of this study.

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