Exploring the Factors Influencing Continuous Participation in Information Volunteer Service Projects

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Abstract

This study explored why members of an information volunteer team continue participating in rural information education services, using social support and social identification theories. The Information Volunteer Program, launched by the Ministry of Education to bridge the digital gap between urban and rural areas, integrates various tools and technologies, including AI, as part of its broader efforts to enhance digital literacy. These tools, such as personalized learning platforms and educational chatbots, complement the volunteers' work in providing comprehensivej information education services. The findings show that subjective well-being significantly influences identification with both the volunteer team and local communities, while altruism affects only identification with the team. Personal growth influences identification with both. Strong identification with the team and communities predicts continued volunteer participation. These findings are crucial for strengthening social support structures for digital volunteers and promoting the growth of such initiatives.

Keywords: E-service volunteer service, Social support, Social identification

1 Introduction

The Information Volunteer Program is a guideline that was launched by Minis-try of Education in the implementation of the program of "Narrowing the Digital Gap in Primary and Secondary Schools between Urban and Rural Areas" in 2001. It was designed to encourage college teachers and students to reduce the digital gap between urban and rural areas with their knowledge of information technology and invest resources in rural areas to improve the information use and learning conditions in the areas. This would strengthen the information competence of the teachers and students and train young people with the capability of social practice, which will help to solve the problem of the inadequate educational resources in rural areas [1]. The term "volunteer" was regarded as a society-benefiting behavioral feature and as a behavior of offering various services to the people other than relatives [2-3]. Volunteering indicates offering free services [4]. At present, many countries are encouraging people to participate in volunteer services [5]. In recent years, the government has actively promoted service learning. This approach aims to reduce students' negative attitudes toward recipients of social services and emphasizes the importance of social equality [6]. In addition to focusing on students' service learning, Bringle and Hatcher [7] suggested further integration of higher education scholars with community services. While the development of information volunteers aims to bridge the digital divide between urban and rural areas, the number of studies on information volunteers remains limited, both practically and academically. Most existing studies primarily examine the effectiveness of developing information volunteers. These studies can be categorized into various types, including international volunteers [8], athletic volunteers [9], tourist volunteers [10-11], service volunteers [9], volunteers from young citizens [12], volunteers from non-profit organizations [13-14], community volunteers [15], and online volunteers [16-19]. Despite that the researchers focused on different dimensions in the studies on volunteers, they all provided valuable research results, theories or opinions, which deepened the understanding of factors that encourage volunteers to continue to offer services.

However, types and forms of volunteering are rapidly evolving. Information volunteer service, in particular, is based on the concept of team organization and focuses on providing comprehensive information services to rural areas or communities. Unlike most volunteers discussed in previous literature, who primarily engage in individual-oriented service activities, information volunteers emphasize the collective provision of these services. This teamwork approach may influence volunteers differently, making it essential to investigate the factors that affect their ongoing participation. In recent years, the scope of information volunteer services in rural areas has expanded to encompass not only traditional information skills but also advanced technologies such as artificial intelligence (AI). These AI applications are becoming an

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DOI: https://doi.org/10.70003/160792642026112706010

integral component of the broader information services framework, playing a critical role in education [20]. Tools like personalized learning platforms, educational chatbots, and automated administrative systems are being introduced alongside traditional IT skills to enhance learning outcomes and reduce educators' workloads. These AI-driven initiatives aim to ensure that students in rural areas have access to the same advanced educational opportunities as those in urban settings. Understanding the role of these emerging technologies within the broader context of information volunteerism is crucial for comprehending how such programs can continue to evolve and meet the needs of these communities. Based on the above discussion, and through the concepts of identity theory, social support, and social exchange, this study seeks to uncover the reasons why information volunteers are willing to continue providing services in rural areas. This perspective leads to the main research question of this study: "What are the main factors that affect volunteers' continued participation in the development of information volunteers?"

2 Literature Review

The basic concept of volunteer service is the unconditional provision of unpaid work [4, 21]. Most people engage in volunteering to give back to the community and to receive emotional or spiritual rewards [22]. Carpenter & Myers [23] identified altruism, image enhancement, and external rewards as motivations for volunteer service. The Information Volunteer Program was launched by the Ministry of Edu-cation in 2001 to address the "urban-rural digital divide" in primary and secondary schools. Its purpose is to encourage college and university students and faculty to utilize their expertise, organize information volunteer teams, and participate in efforts to bridge the digital divide. The program also aims to help rural schools improve their information use and learning environments, enhance the information literacy and application skills of teachers and students, and cultivate college students with social awareness and practical abilities, thus achieving the goal of service-learning education.

People volunteer mostly to give back to the community, seeking emotional or spiritual rewards [22]. Based on a review of the literature on volunteer service, this study summarizes the factors influencing volunteers' engagement in Table 1.

Table 1. Literature related to volunteer service

Author	Research objects	Construct
Georgiadis, Spiliopoulos, Rampotas & Rampotas [24]	Olympic volunteers of Athens 2004	Value, Knowledge seeking, Personal development, Elevation of Self-confidence, Interest for the community
Liao, Chang & Tsai [25]	The 2009 world games	Participation in international tournament, Peer confirmation, Enhance international perspectives, Fulfill social obligations
Chambré and Einolf [81]	Older volunteers	Selfish motivation, Altruistic motivation, Social motivation, Situation factor motivation
Murnighan, Kim, & Metzger [27]	Volunteer service	Social reward, Sltruistic
Hibbert, Piacentini & Dajani [15]	Community-based food cooperative	Personal benefit, Social benefit
Dolnicar. & Randle [28]	Volunteer service	Doing something worthwhile, Personal satisfaction, Helping others
Wang & Wu [29]	2010 Shanghai World Expo	Expression of values, Career Orientation, Love of expo, Community involvement, Personal growth, Extrinsic rewards
Xin et al. [30]	University students in China	Peer selection, peer influence, social media use, social self-efficacy, and pro-environmental volunteering behavior
Rehberg [8]	International volunteering among young adults	Achieving something positive for others, Quest for the new, Quest for oneself
Farrell, Johnston & Twynam [31]	Sport volunteer	Purposive, Solidary, External traditions, Commitments
Hallmann & Harms [32]	Sport volunteer	Interpersonal contacts Expression of values Career orientation Love of sport Personal growth
Bang & Lee [33]	Sport volunteer	Career orientation Love of sport Personal growth Interpersonal contacts Extrinsic rewards Patriotism Expression of values

Bang & Chelladurai [34]	Sport volunteer	Career orientation Love of sport Personal growth Interpersonal contacts Extrinsic rewards Patriotism Expression of values
Li, Wu, & Kee [35]	Chinese volunteers	Intrinsic motivation Integrated regulation Identified regulation Introjected regulation External regulation Amotivation
Pavelek [36]	Senior volunteering	Reciprocity Activity Advisability Unselfishness
Giannoulakis, Wang, & Gray [37]	Olympic volunteers of Athens 2004	Purposive Related Egoistic
Cho, Chen, Li [38]	Volunteer experience in Singapore	Expression of value Community involvement Interpersonal contacts Career orientation Personal growth Love of sport
Senevirathn, Jin & Ma [39]	Volunteers in Queensland	Motivation Ability Opportunity

The Information Volunteer Program was initiated by the Ministry of Education in 2001 as part of its efforts to narrow the "urban-rural digital divide." The program aims to encourage college and university faculty and students to apply their expertise by organizing information volunteer teams to help bridge the digital divide. These teams assist rural schools in improving their information usage and learning environments, enhancing the information literacy and application skills of teachers and students. Through cultivating socially responsible college students with practical abilities, the program aims to achieve the goals of service-learning education. The factors influencing volunteers should generally be similar to those mentioned above.

2.1 Social Support Theory

Social support is the perception of being respected Social support is the perception of being respected and valued in social interactions, motivating individuals to join a team [40]. Strong organizational identification leads to employees receiving social support from coworkers [41]. Zhou [42] pro-posed studying how user support influences their identification with mobile social platforms, finding that users are more likely to identify with platforms they support. In e-service volunteering, promoting information education in remote areas is re-source-intensive and time-consuming. Social support is crucial here; team members who receive more external support are expected to identify more strongly with the team. Given these points, this study hypothesizes:

H1a: E-service volunteers show stronger identification of the team if they receive more social support.

Mizruchi [43] suggests that social support can be influenced by the sense of place, especially in teams with a long history, where members tend to support the team due to strong local identification and urban pride. E-service volunteers, providing services in remote areas, often develop strong bonds with the local com-munity, enhancing the impact of local identification. Therefore, this study proposes that the level of social support directly influences local identification, leading to the following hypothesis:

H1b: E-service volunteers show stronger local identification if they receive more social support.

2.2 Subjective Well-being

According to Haslam [44], identification is strongly influenced by the well-being individuals experience from their actions. This sense of well-being helps fulfill their fundamental needs, such as safety, belongingness, self-improvement, and reducing uncertainty [45-46]. Furthermore, team members with higher levels of subjective well-being are more likely to contribute to and support team activities. Similarly, employees who strongly identify with their organization are more likely to contribute significantly to the organization [47]. In the context of e-service volunteering, volunteers' subjective well-being often stems from the positive feedback they receive from students in remote areas and the sense of fulfillment after providing service. This feedback and sense of fulfillment motivate volunteers to identify with the e-service volunteer team. Based on these premises, this study proposes the following hypothesis:

H2a: The e-service volunteers with more well-being show stronger identification of their teams.

Well-being is a significant value for volunteers [48], and from a service perspective, it is a crucial factor influencing volunteers' participation in activities [49]. In the case of e-service volunteers, many of them provide services in the counties, cities, or regions where their schools are located. Therefore, their well-being is also influenced by their identification with their place of residence. Based on this reasoning, the study proposes the following hypothesis:

H2b: The e-service volunteers with more well-being would show stronger local identification.

2.3 Altruism

Hoffman [50] defines altruism as the behavior of helping or sharing resources with others for their benefit, without considering personal gain. Lee, Kim, and Kim [51] examined online brand communities and suggested

that providing consumers with altruistic motivations could lead to strong social identification with brands, ultimately fostering positive brand relationships. Rim, Yang, and Lee [52] investigated corporate social responsibility in non-profit organizations and found that altruistic actions by such organizations could enhance consumer identification with the enterprise. Building on these definitions and findings, this study adopts a volunteer perspective and considers the altruism of e-service volunteers as a selfless dedication to improving information education in remote areas. Volunteers sacrifice their time and energy for this cause. Therefore, if e-service volunteers are willing to dedicate themselves to remote areas, they are likely to develop stronger identification with their teams and places. Based on this rationale, the following two hypotheses are proposed:

H3a: The e-service volunteers who are more altruistic have stronger identification of their teams.

H3b: The e-service volunteers who are more altruistic have stronger local identification.

2.4 Person Growth

Personal growth refers to an individual's capacity to develop their potential [53]. Volunteers often view volunteer services as experiences that contribute to personal growth. These experiences can include realizing personal value, earning respect, and seeking meaning in life, all of which reflect volunteers' intention to contribute through service [54]. This study suggests that e-service volunteers e-counter various challenges while providing services, such as offering information courses in designated areas. These challenges can significantly impact their personal growth and sense of accomplishment. These factors not only satisfy their desire for knowledge but also influence their identification with the team and their sense of attachment to the place after experiencing personal development. Therefore, the study proposes the following two hypotheses:

H4a: The e-service volunteers with more personal growth have stronger identification of their teams.

H4b: The e-service volunteers with more personal growth have stronger local identification.

2.5 Social Identification Theory

Social identification, as proposed by Tajfel and Turner [55], suggests that individuals categorize themselves into different groups based on their personality. Wang et al. [29] discussed why Wikipedia editors are motivated to edit entries, highlighting the importance of their identification with the Wikipedia platform. When studying e-service volunteers, it's important to note the distinction from traditional volunteers. While social identification typically involves expanding and exploring group identification at an individual level, e-service volunteerism operates within a team framework, resembling team identification more closely. Additionally, e-service volunteer teams often provide long-term services in remote areas, leading team members to develop unique sentiments toward these places. Therefore, this study considers local identification as an important concept alongside team identification.

Adler & Adler [56] argued that when members of an organization identify strongly with their teams, their loyalty to the organization increases, reducing the likelihood of them transferring to other organizations. Bodet and Bernache-Assollant [57] highlighted in professional sports that players' and fans' identification with the local community fosters a sense of group loyalty to the community. This identification also increases their willingness to recommend and share information about the community, as well as encourages more people to participate in community activities. Lai et al. [18] found that team identification played a crucial role in volunteers' continued participation. Based on these findings, this study posits that both local identification and team identification are important factors influencing the continued participation of e-service volunteers. Therefore, the following two hypotheses are proposed:

H5: The e-service volunteers with stronger team identification are more willing to continuously offer services.

H6: The e-service volunteers with stronger local identification are more willing to continuously offer services.

3 Research Method

Based on the literature review and hypotheses presented above, this study proposes the following framework. It consists of two levels, discussing the intention to continue engaging in information service volunteer work from both individual and team perspectives (see Figure 1).

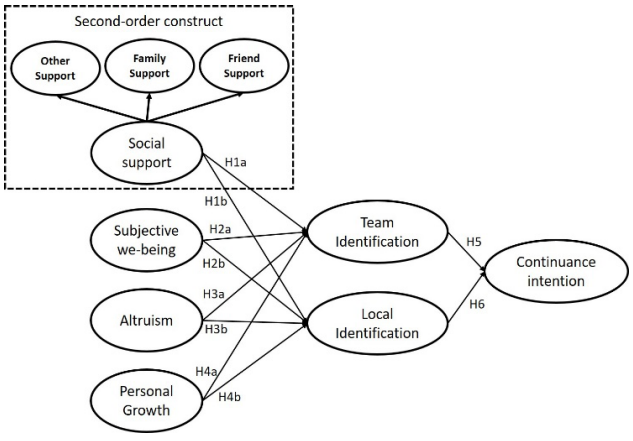

Figure 1. Research architecture

3.1 Questionnaire Design and Development

The questionnaire items in this study were developed using a seven-point Likert scale, all originally in English, to ensure the quality of the questionnaire. After translation into Chinese, the items were reviewed by two professors to ensure accuracy and appropriateness. The questionnaire was distributed in Taiwan, and the items were further adjusted based on the research context to

enhance respondents' understanding and facilitate smooth completion. The sources of the scale items and their operational definitions are as follows: Social Support was primarily designed based on the scale by Cheng & Chan [26], with the definition emphasizing three dimensions of social support: family, friends, and other sources of support. Subjective Well-being refers to the psychological feelings of joy and positive emotions that information volunteers experience while engaging in information services, with the primary scale adapted from the study by Chan [58]. Altruism was measured using a scale derived from Hsu & Lin [59], operationally defined as the willingness of information volunteers to help others selflessly during rural service without expecting anything in return. Personal Growth is defined as the acquisition of new knowledge by information volunteers and the feeling of being valued and needed by those they serve, with the relevant scale designed based on the studies by Ma & Draper [22] and Hallmann & Harms [32]. Place Identification is defined as the emotional attachment that information volunteers develop toward the place they support during service, identifying themselves as part of the local community, with the scale designed concerning the items from Ramkissoon, Smith, & Weiler [60] and Marques, Lima, Moreira, & Reis [61]. Team Identification is defined as the extent to which information volunteers feel a sense of pride and identification with their team while engaging in information services, with the scale adapted from the study by Van Der Vegt & Bunderson [62]. Finally, the Intention to Continue Participating in E-service Volunteering is defined as the willingness of information volunteers to continue participating in information education, with the scale modified based on the items from Wang [63].

In this study, the cxonstruct of social support comprised three sub-constructs: family support, friend support, and other support. Following Zimet, Dahlem, Zimet, and Farley's [64] adoption of a second-order model for analysis and verification, a two-stage analytical model was employed. The factor score was extracted between each construct by a first-order construct to generate a second-order model [65-68].

Expert validity testing was conducted on the developed scale to measure the various constructs of interest effectively. The interviewees included former leaders who had served in the Ministry of Education's Information Volunteer Program, members selected as outstanding information volunteers by the Ministry of Education, and information volunteers with over a year of service. Interviews were conducted on May 24, 2019, during the Ministry of Education's Information Volunteer Achievement Exhibition, involving 15 team members. Based on the suggestions of the information volunteer members, the items were modified accordingly. During this stage, it was noted that one item regarding personal growth, "Engaging in information volunteer service has made me feel important," was too similar to another item. This item was deleted to avoid confusion for respondents based on the overall feedback from the interviewed volunteers.

Based on the feedback from the pilot test, further revisions were made to items with problematic wording. The formal questionnaire was divided into six parts: the first part consisted of items related to social support, focusing on three aspects: family support, friend support, and other support; the second part focused on personal happiness; the third part addressed altruistic feelings; the fourth part focused on identification, including personal growth, team identification, and local identification; the fifth part included items related to the intention to continue participating in information volunteer services; and the final part collected demographic information of the information volunteers. Each part explained the purpose of the survey, which was to facilitate respondents in completing the questionnaire.

3.2 Data Collection

This study focused on volunteers from the Information Volunteer Team to investigate the factors influencing their decision to continue serving in information education for rural areas. The Information Volunteers are part of the Information Volunteer Program initiated by the Ministry of Education and consist mainly of college and university students from various institutions across Taiwan. Volunteers who had been serving on the team for more than one year were eligible for inclusion in the study. Due to cost considerations and the diverse nature of information volunteers, online questionnaires were chosen as the data collection method. To expedite data collection, the questionnaires were also distributed in LINE groups comprised of information volunteers from colleges, universities, and the Ministry of Education. The questionnaires were distributed over a two-month period between June and August 2019, resulting in 432 responses. After removing incomplete or non-information volunteer responses, 375 questionnaires were included in the final analysis.

In terms of demographic distribution, female information volunteers (205) outnumbered male information volunteers (170) by approximately 10%, indicating a higher participation rate among females in rural information education service. Regarding motivation, 21.6% of volunteers participated involuntarily, driven by factors such as school courses, service-learning requirements, classmate invitations, and graduation-related topics, while 78.4% participated voluntarily. Among the surveyed members who have participated in information volunteering, the proportion of females is about 10% higher than males, indicating a higher participation rate of females in volunteering for rural information education services. The majority of volunteers joined when they were in their first or second year of university, accounting for 72.8% of the respondents. This is mainly due to the recruitment focus on university freshmen. Another reason is that students in their third year and beyond are busy preparing for graduation projects, graduate school entrance exams, and job applications, so the majority of information volunteer members are from the first two years of university. Most of the information volunteers are highly involved in education-related activities, accounting

for 44.8% of all samples. This is largely because the Ministry of Education initially promoted the information volunteer program with a focus on education. Other areas of involvement include social (21.60%), cultural (18.40%), and economic (15.20%) aspects. The distribution of the sample is shown in Table 2.

Table 2. Sample distribution

Sample characteristics	Measurement items	Number of responses	(%)
Gender	Male	170	45.33%
	Female	205	54.67%
Initial role upon joining the information volunteer team	College	39	10.40%
	Year 1	156	41.60%
	Year 2	117	31.20%
	Year 3	30	8.00%
	Year 4	18	4.80%
	Graduate	15	4.00%
Service orientation	Cultural	69	18.40%
	Social	81	21.60%
	Educational	168	44.80%
	Economic	57	15.20%

4 Data Analysis and Results

4.1 Measurement Model

SmartPLS 3.2.8 was used for the analysis of the measurement model. Unlike traditional regression analysis, structural equation modeling (SEM) is more suitable for predicting complex patterns [8, 69]. The primary reason for using PLS-SEM in this study is its flexibility compared to CB-SEM in estimating models with fewer assumptions about the normal distribution required by the maximum likelihood method, and PLS-SEM's ability to estimate more complex models with smaller samples [70-72]. Furthermore, PLS-SEM is not only suitable for confirmatory research but also for exploratory research, unlike CB-SEM, which requires a strong theoretical foundation for testing [73].

The concept of social support in this study is mainly composed of three sub-constructs: family, friends, and other support [64]. According to them, the analysis method used a second-order model, so this study employed a two-stage analytical approach [51, 74] for model analysis. The first stage involved extracting factor scores between each construct to generate a second-order model [66].

For the analysis of the measurement model, it is recommended to measure several indicators of individual items, including factor loading, composite reliability, convergent validity, and discriminant validity. The reliability analysis of individual items is typically tested through factor loading. Generally, factor loading is recommended to be above 0.5 [75-76], and the factor loading results of individual items should reach statistical significance [77]. According to Table 3, the factor loading of individual items all exceeded the recommended threshold.

Table 3. Measurement model factor loadings

Measurement constructs	Average	Factor loading	t-Statistic
Subjective well-being	5.4	0.842	32.662***
	5.70	0.780	25.169***
	5.59	0.827	34.594***
	5.62	0.767	29.638***
	5.89	0.837	48.790***
	5.76	0.854	49.356***
	5.41	0.797	30.259***
	5.77	0.758	28.552***
Altruism	6.09	0.823	31.367***
	6.00	0.865	38.221***
	6.06	0.895	58.284***
Place identification	5.73	0.906	75.791***
	5.61	0.927	91.481***
	5.85	0.861	48.364***
	5.88	0.849	30.688***
	6.04	0.759	20.639***
Team identification	5.38	0.832	44.303***
	5.80	0.866	52.573***
	5.28	0.877	121.752***
	5.90	0.812	71.190***
Continued volunteer engagement intention	4.74	0.850	49.403***
	4.51	0.927	97.112***
	4.73	0.939	120.757***
	4.82	0.916	67.557***
	4.78	0.852	41.124***
Personal growth	5.68	0.930	88.637***
	5.904	0.899	49.237***
	6.16	0.669	12.482***
Social support	5.07	0.761	29.388***
	5.64	0.831	24.658***
	6.024	0.849	47.091***
Family support	5.07	0.877	48.805***
	5.23	0.922	94.170***
	5.18	0.848	43.049***
	4.77	0.821	50.189***
Friend support	5.19	0.834	38.150***
	5.70	0.906	53.973***
	5.79	0.876	56.624***
	5.88	0.858	41.890***
Other support	6.36	0.885	66.246***
	6.13	0.877	32.437***
	5.78	0.793	29.311***
	6.03	0.894	51.169***

Based on the sample recovery results provided by the information volunteers, the composite reliability values for the measurement constructs in this study range from 0.877 to 0.954. These values surpass the recommended threshold of 0.7 as suggested by Bagozzi & Yi [78], indicating a high level of internal consistency in the measurements. Additionally, the average variance extracted (AVE) for each construct exceeds the recommended threshold of 0.5 [79-80], demonstrating good convergent validity. As

shown in Table 4, the AVE values for the constructs range from 0.500 to 0.806, thus adhering to the standards set forth in previous literature.

Table 4. Component reliability and convergent validity

Measurement constructs	Cronbach's alpha	Composite reliability	AVE
Subjective Well-being	0.924	0.938	0.654
Altruism	0.827	0.896	0.742
Place identification	0.913	0.935	0.744
Team identification	0.909	0.936	0.785
Continued volunteer engagement intention	0.939	0.954	0.806
Personal growth	0.787	0.877	0.707
Social support	0.908	0.922	0.500
Family support	0.890	0.924	0.754
Friend support	0.892	0.925	0.755
Other support	0.885	0.921	0.745

4.2 Structural Equation Modeling

The overall explanatory power of this study's model reached 0.494. Regarding the mutual influence between individual constructs, the explanatory power of social support, personal growth, and altruism on team identification was 0.727, and on local identification was 0.777. This indicates that team identification and local identification are important factors influencing information volunteers to continue their volunteer services in rural areas.

In hypothesis testing between constructs, there was no significant statistical difference between H1a's social support and team identification (Beta=0.078; t-value=1.65). However, H1b's social support had a significant and positive impact on local identification (Beta=0.245; t-value=3.628). H2a's subjective well-being exerted a significant and positive influence on team identification (Beta=0.254; t-value=5.773), as did H2b's subjective well-being on local identification (Beta=0.303; t-value=7.829).

There was a significant statistical difference between H3a's altruism and team identification (Beta=0.180; t-value=4.207), but no significant statistical difference between H3b's altruism and local identification (Beta=0.010; t-value=0.168). There was an apparent statistical difference between H4a's or H4b's personal growth and team identification (Beta=0.433; t-value=9.159) or local identification (Beta=0.437; t-value=7.484).

Lastly, H5's team identification had a significant and positive influence on the intention to continue volunteer services (Beta=0.502; t-value=4.657), and H6's local identification also had a positive impact on the intention to continue volunteer services (Beta=0.232; t-value=2.081). The structural equation model results are shown in Figure 2.

Based on the above results, this study primarily aims to construct a model for investigating the willingness of information volunteers to continue participating in rural services from the perspectives of social support, identity theory, and altruism. Based on the results of model testing, this study considers the model to be acceptable. The summary of hypothesis testing results is presented in Table 5.

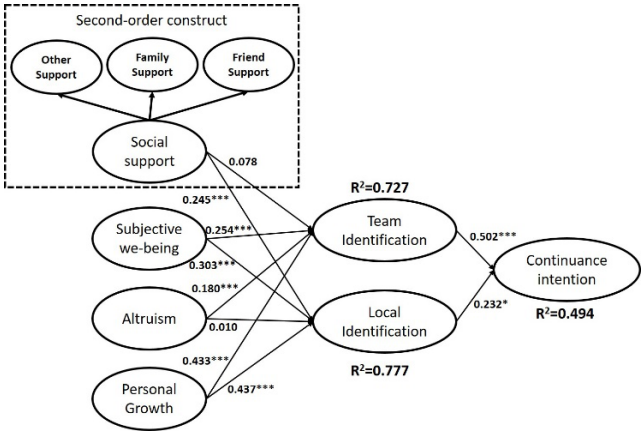

Figure 2. Structural model analysis of this study

Table 5. Research hypotheses and results

Hypotheses	Parameter estimates	Results
H1a	0.078	Reject
H1b	0.245***	Accept
H2a	0.254***	Accept
H2b	0.303***	Accept
H3a	0.180***	Accept
H3b	0.010	Reject
H4a	0.433***	Accept
H4b	0.437***	Accept
H5	0.502***	Accept
H6	0.232*	Accept

Notes: * p<0.05; ** p<0.01; *** p<0.001

5 Discussion and Conclusions

5.1 Discussion

The study findings revealed that social support did not positively influence team identification, contrary to the hypothesis of the study. This suggests that for information volunteers, social support does not affect their team identification. To enhance team identification among information volunteers, the primary task is to improve their cohesion. This is crucial because promoting information education in rural areas is a long-term and intensive effort that cannot be achieved in a single year. However, social support did have a positive and significant impact on local identification. The results showed that family and friend support were critical factors influencing the start of volunteer services and local identification. Subjective well-being also positively influenced team and local identification. This indicates that when information volunteers are happy and positive, they develop a

sense of team identification and consider themselves an integral part of the community. Therefore, leaders of the Information Volunteer Program should focus on creating activities that promote happiness and a sense of belonging among volunteers. Additionally, subjective well-being plays a crucial role in fostering local identification, especially when information volunteer teams interact with local farmers or record local cultures. These interactions strengthen the volunteers' identification with their service, leading to a greater intention to continue volunteering. Personal growth also significantly influenced team and local identification because volunteers gain new knowledge and feel valued, especially when their services are particularly needed. Finally, team and local identification positively impacted volunteers' intention to continue volunteering. This highlights the importance for program leaders to consider how to enhance team cohesion and increase the sense of local identification among volunteers.

5.2 Practical Implications

From the perspective of information services, the recruitment of information volunteers in remote areas, particularly the recruitment of localized volunteers, is the most crucial factor. Therefore, when institutions or communities are selecting volunteers, they should place greater emphasis on choosing local personnel. This will enhance the commitment and dedication to information education services in remote areas. Additionally, for those responsible for recruiting information volunteers at various levels of schools, increasing volunteer retention is an important aspect. Schools can, for instance, utilize service learning hours to strengthen students' willingness to serve. From the perspective of social support, the long-term commitment of volunteers should also rely on government or Ministry of Education policies that promote information education in remote areas. The allocation of resources to schools, communities, or institutions will provide substantial support and value in advancing information education activities in remote areas.

5.3 Research Limitations and Future Research Directions

This study focuses on volunteers who have participated in information volunteer services for more than one year, thereby avoiding the potential bias of newly recruited volunteers whose responses may not reflect the core focus of sustained information volunteer initiatives. However, there are limitations, including the fact that this research primarily utilizes a questionnaire-based survey. The analysis of the questionnaire was conducted at a single point in time, which only allows for the explanation of variable relationships at that specific point. Consequently, the constructed model can only explain the relationships at that particular time, without the ability to observe the long-term effects of volunteers' continued participation. Therefore, future research could further invest in qualitative approaches to uncover the factors contributing to the sustained involvement of information volunteers in remote areas. This would also more effectively address the shortcomings of quantitative research by providing a deeper explanation of observed phenomena.

Acknowledgment

This research was supported by the National Science and Technology Council (NSTC), Taiwan, under the project "The Role of Recommendation Source Shift: How the Transition from Merchant-Generated Content to User-Generated Content Affects Consumer Acceptance of AI versus Human Agent Recommendations" (Grant No. NSTC 115-2410-H-130-002).

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