

Development and Construct Validation of Service-Learning Civic Competency Scale in Pakistani Context

Dr. Iqbal Ahmad¹, Dr. Farah Deeba² & Dr. Muhammad Aqeel Raza³

¹Assistant Professor, Department of Education, University of Malakand,

Email: ikbalchtrali@gmail.com

²Assistant Professor, Department of Education, Bahauddin Zakariya University, Multan,

Email: farahgillani@bzu.edu.pk

³Associate Professor, Department of Education, NCBA & Lahore, Sub Campus Multan,

Email: razaaqeel06@gmail.com

ARTICLE INFO

Article History:

Received: February 15, 2025
Revised: March 25, 2025
Accepted: March 27, 2025
Available Online: April 02, 2025

Keywords:

Service-learning, civic competency scale, higher education, construct validation

Corresponding Author:

Dr. Farah Deeba

Email:

farahgillani@bzu.edu.pk



ABSTRACT

One of the major aims of education is to prepare civically active and responsible citizens for future societies. Service-learning has always been instrumental to achieve this goal. Several instruments have been developed and used to measure service-learning outcomes all over the world. However, the absence of a valid instrument has always made it difficult for educators and management to measure contributions of service-learning for civic competencies of students in Pakistani context. This study aimed to develop and validate an instrument for measuring civic competencies of students as a result of participating in service-learning activity. The instrument was developed based on literature review on civic competencies and service-learning. The theoretical foundation for the development of the civic competency scale was derived from the works of Lambright and Lu (2010). An instrument consisting of 21 items was constructed to measure the four domains of civic competencies among students such as civic knowledge, civic skills, civic commitment and civic values. Data were collected from 314 students from 3 private colleges in district Chitral of Khyber Pakhtunkhwa, Pakistan who participated in a service-learning activity as part of their academic course. The exploratory and confirmatory factor analysis provided strong evidences regarding reliability and validity of the newly constructed scale. It is concluded that SLCCS is a reliable and valid instrument for measuring civic competencies of students participating in service-learning. It is suggested that the instrument may be used retested in other contexts for further validation proofs.

Introduction

Higher education institutions are facing challenges of eroding civic skills of young people in parts of the world including Pakistan. Leaders of higher education are placing high emphasis on the need to enhance the capacities of students to make them active civic leaders (Rehman, Majoka & Naz, 2018; Afaq et al., 2022). For example, in the USA the civic education courses and content is being reassessed and reevaluated to make it more democracy oriented and service oriented (Levine, 2-14). The same efforts have been undertaken in Pakistan by highlighting the importance of civic education and community service as essential components of higher education in recent education policy 2023. In this regard the courses have been redesigned to cater to the needs of enhancing civic competencies of students (Ihsan, Sherazi & Hayat, 2023). The US department of education has given this task force to association of American colleges and universities for civic learning and democratic engagements of students to improve their civic literacy and habits of inquiry as active civic agents (Mühleck & Hadjar, 2023). Civic competencies are essential for people to become active and responsible citizens in a democratic society. These competencies help people to enter into constructive and meaningful relationship in the society (Chang, Chang & Chen, 2021). Civically active people use these competencies for sharing values, openness and developing social linkages and upholding social dignity. The development of present day democratic societies is largely dependent on the civic competencies of its citizens (Saleh, Komalasari, Sapriya & Masyitoh, 2022). For the promotion of democracy and democratic values, citizens must engage in critical deliberations, dialogue and work in collaborations. Civically active citizens play a key role in solving the issues of the highly complex and fast changing societies using best practicable plans and strategies. This helps in better functioning of the society which is a sine-qua-non for thriving of democratic set up (Jain, Cohen, Kawashima-Ginsberg, Duarte & Pope, 2019). Scholars have highlighted the importance of promoting civic capabilities of citizens so that they may contribute towards the common good based on informed wisdom and updated knowledge, set achievable goals, cooperate and collaborate with others for resolving issues and implement plan of actions effectively (Karliani, Kartadinata, Winataputra & Komalasari, 2019; LeCompte, Blevins & Riggers-Piehl, 2020). Researchers have stated that active citizens possess some essentials characteristics such as strong sense of civic responsibility, realization of civic duties, creating social connectivity with community members, intention to work as change agent and active involvement in civic behaviors. It is important to develop civic knowledge of young people to prepare them for their future responsibilities as active citizens. This includes promoting among them civic skills and other civic competencies such as passion for social work, volunteerism, collaboration and community service which are essential for them to be active citizens Blevins, LeCompte & Bauml, 2018). According to Kramer, Lester and Wilcox 2021) students need to develop sense of self-efficacy in order to participate positive and confidently in the political activities. Along with focusing the development of civic knowledge, it is important to provide them quality civic education with particular emphasis on active development and support for promotion of students' self-efficacy and practicable scholarly skills.

The concept of citizenship extends beyond the narrow definition and includes within its ambit the social and cultural context, engaging students critically in debates and discussion and encouraging them to actively participate in the democratic set up by being above the limitations of legal status as civic education considers not only improvement of students' civic knowledge but also their civic competencies (Owusu-Agyeman & Fourie-Malherbe, 2021). Researchers have suggested for adopting such as strategies that helps in promoting civic education effectively through deep learning. This could be achieved by arranging discussions and analytic dialogues, active strategies and plans as well as taking concrete action for addressing problem of society and reflecting on the

findings (Nuryadi & Widiatmaka, 2023). Scholars have further emphasized on building meaningful relations and coalitions based on shared understanding of the civic goals in collaboration with peers and other members of the society (Naval, Villacís & Ibarrola-García, 2022). The development of civic skills and behaviors based on this type of deeper learning approach to achieve the targets of civic education are important for durable and sustainable civic engagements. To the contrary, students demonstrate poor civic behaviors and skills because they do not get hands on civic experiences characterized by deeper inquires and knowledge sharing (Torney-Purta, Cabrera, Roohr, Liu & Rios, 2015). Researchers have been looking for answers to questions related to civic development of young people. The questions include: does service-learning play any role to promote civic competencies of college student? What is the extent to which service-learning enhances the civic competencies of college students?

Civic Education

Civic education aims to strengthen ties between citizens and society by preparing democratic minded citizenry. The higher education institutions are entrusted with the duty to prepare civically skilled and responsible citizens (Hoggan-Kloubert & Mabrey III, 2022). Civic competencies include civic knowledge civic skills, attitudes and values which help people to perform in a real world environment such as effectively communicating, solving problems, critically and reflectively thinking, making informed decisions, showing sense of responsibility and respecting the values of others, respecting diversity and demonstrating solidarity with others, caring for human rights and equality in a democratic way (Rak & Rezmer-Plotka, 2022). Recent scholars have called upon higher education institutions to train and produce citizens who have knowledge of active citizenship and positive engaged attitude. Who understand the issues of the society and come up with best practical solutions (Gul, Ahmad & Tufail, 2022; Widodo, 2023). Many immediate social and environment related issues require knowledge and civic inputs and students of higher education are in a better position to provide this as they at the threshold of going out into the society and job market after graduation (Miles, 2021). In civic discussions students are engaged in serious collaborations and find out practical solutions to human problems faced by people in the community. This enhances students' decision-making skills as active democratic citizens. Engaging in team activities not only improves their leadership skills but also provides the opportunity to the students to promote their civic minded dispositions and competencies (Iqbal, Mahmood & Iqbal, 2023).

It is increasingly being recognized that students need to cultivate fundamental commitments for civic participation as active citizens of a vibrant community. For this purpose they need to be exposed to opportunities by engaging them in civic learning and civic skills development (Ahmad, & Gul, 2023). Researchers have suggested that engaging students in civic related activities provides them practical opportunities that enhance their academic achievements in terms of active civic related skills such as developing cordial relations with peers and other adult members of society (Alscher, Ludewig & McElvany, 2022). According to experiential learning theory people learn from experience how to become active and responsible members of the society. They acquire knowledge and skills through active participation in real life activities. Dewey has further elaborated that civic learning helps promote democratic mindedness among the students. They become aware of their rights and duties and also become an informed voter (Fitzgerald, Cohen, Maker Castro & Pope, 2021). Researchers have suggested that for promoting civic dispositions students must be exposed to collaborative discussions, service and service-learning and participatory co-curricular activities. Such like activities allow students to not understand how to be engaged citizens of a democratic societies but also work for sustainability of the efforts for

themselves as well as for others (Payne, Adair, Colegrove, Lee, Falkner, McManus & Sachdeva, 2020). The liberal concept of citizenship also focuses on development of knowledge of citizens, their skills and dispositions. This theory explains that students must get autonomy to be engaged in sharing freedom of thoughts and liberty to act as active citizens (Sánchez Agusti & Miguel Revilla, 2020). Since civic education enables people to develop strong of civic roles and duties, human interrelations and democratic behaviors. The present day discussions on civic education center upon developing civic competencies among students. It also elaborates the political and social implications of civic education along with the factors that influence the process of civic development of young people.

Service-Learning and Civic Competencies

Recent researchers on civic education focus on developing civic skills among youths based on asset approach for engaging them as young people. These types of experience based civic training help bridge civic learning and community involvements (Adarlo, 2020). Students participating in civic activities have strong social bonding, deeper self-esteem, understanding of social and community issues and insight to take positive decisions as active civic agents. Service-learning places students at the center of civic learning by giving them opportunity for participant in an authentic way (Norell, 2022; Ahmad, Begum, & Ahmad, 2022).). In service-learning the students work as active learners through collaboration by solving a human problem which in turn empowers them to be authentic learners (Sze-Yeung & Hui, 2021). The process of service-learning occurs through various phases (1) identifying a problem (2) choosing resources (3) setting goals (4) planning (developing strategy to resolve the problem (5) taking action) and (6) reflecting on the service-learning experience (Dereth & Wear, 2022; Deeley, 2020). Going through the service-learning provides the students with the strong sense of ownership of the service to the community on one hand and using their civic knowledge and civic skills on the other hand to resolve the problem (Dapena, Castro & Ares-Pernas, 2022). Students get full encouragement from their teachers during the service-learning to reflect on their experience as change agent which consolidates their learning and empowers them to take actions effectively in future as active citizens. An effectively organized and planned service-learning course motivates and engages the students to get essential civic knowledge and skills (Ahmad, Deeba & Raza, 2023).

In view of Caspersz and Olaru (2017), the concept of service-learning is rooted in the theories of experiential learning of Dewey and David Kolb which also encourages teachers to conduct engaging, practical and experience based learning environment. These theorist further argue that effective learning should be connect to active participation of students in community activities where they will work as active citizens, resolving public problems and working with other adult members of the community in collaboration and with team zeal (Shea, Harkins, Ray & Grenier, 2023). The Deweyan approach to civic education also closely links with the practice of service-learning. Dewey asserts that civic learning is closely associates with active citizenship. To learn civic behaviours and skills the students needs to be engaged in a practical community based environment where they interact, collaborate and reflect on public issues and work for the amelioration of the community and practice democracy through listening to others, respecting others' views and understanding how different perspectives help to create a democratic society(Resch, & Schrittester, 2023).

Some researchers have narrated that in a service-learning context students learn trust and show willingness to solve a community problem. They do this under the supervision of their teachers. This experience enables them to create a synergy between the educational institutions and

community (Salam, Awang Iskandar, Ibrahim & Farooq, 2019). Finding an opportunity to be engaged in this type of activities based on participation and deep learning in a community site enhances their civic abilities by transcending the classroom four walls and this gets manifested in their actions to work as active members of the society (Shek, Li, Yu, Lin & Chen, (2022). By enabling students to work in collaboration for addressing a public concern instills in their minds the habits of active civic agents and motivates them to work for a common public good. Hence, the quality of the service-learning activity determines the civic outcomes for students (Waldner, Widener & McGorry, 2012; Wiersma-Mosley & Garrison, 2022). Researchers have suggested that the service-learning should be interdisciplinary and hands-on in nature to enable the students to learn important civic knowledge. This will be possible if a practical and engaging environment is created where the students are able to view themselves as active civic change agents. This will not only essentially help them to work for the sustainable growth of democracy but also help them to grow personally through the challenging journey of adulthood (Tinkler, Tinkler, Reyes & Elkin, 2019).

Civic engagement is considered to be one of the important outcomes of service-learning (Bringle & Clayton, 2012). The Pakistani government has also directed the colleges and schools to make essential efforts to recognize civic education of students as important national goal. Recent researchers have strongly focused their attention on important questions related to development of civic competencies of students through service-learning (Gul et al, 2022). They deliberate on how students can participate in collaborative discussions on issues of the society in service-learning course where students attempt to make meaning out of their connections and experiences in the community (Nurmanita & Ridwan, 2023). How does this experience help improve their civic dispositions? How do students get identity related influences from the service-learning experience that they participate in? In this article, we have attempted to highlight this aspect by exploring the perceptions of college students about the contributions of service-learning as a catalyst to improve their civic competencies and the extent to which they may develop these competencies by participating in the service-learning course?

Scale Development

The development of the scale consists of various stages which are discussed below. The scale development method of Clark and Watson (1995) was used to construct the scale which consists of the following phases: (1) items creation (2) theoretical analysis and Psychometric analysis.

Items creation

To create items for the scale, a review of literature was carried out on civic education and service-learning. Based on extensive literature review, four important areas were identified such as civic knowledge, civic skills, civic values and civic commitment as outcomes of civic competency based on participation in the service-learning activity as shown in Table 1.

Participants

All students of post-secondary classes in district Chitral constitute population of this study. However, due to constraints of time, resources and geographical barriers, the study was confined to three private colleges in district Chitral. Thus, the sample of the study consisted of 314 students from three private colleges in district Chitral Sir Syed technical college, Falakseer College of Nursing and Abdali Millennium College (pseudonyms). All the students of postsecondary final classes were taken as sample. The students were and selected based on purposive sample

technique. Thus, all those students were selected for data collected as respondents who had participated in the service-learning course during their study. These students were approached based on convenient sampling basis to get their willingness and consent to participate in the study. Permission was also obtained from the college administration to select students for data collection. Each of the individual student was also asked to get consent either to participate or not in the study. The sample students were also given the option to withdraw from the study at any stage. They were assured through written undertaking that the collected data will not be leaked or shared without their prior permission. The questionnaires were directly handed over to the students based on the principle of availability and collected on the spot.

Table 1: Themes, key statements representing each of the theme and authors

Selected Themes	Statements for selecting themes	Authors
Civic knowledge	Service-learning enhances civic knowledge.	Eyler & Giles, 1994
	Students get good knowledge of civic understating through service-learning.	Bringle and Hatcher, 1995
	In service-learning students are given firsthand knowledge of civic behaviors.	Osborne, Hammerich & Hensley, 1998
	Service-learning is considered to be a civic pedagogy.	Huddleston, Ted & Kerr, 2006
	Service-learning enhances students' civic sense.	Zdanevicius, 2006
	Service-learning improves sense of civic responsibility.	Brungardt, 2009
	Service-learning promotes civic related information of students	Balciuniene & Mazeikeine, 2009
	Students become better informed about community issues	Bringle & Hatcher 2009
	Students know about the importance of diversity	Steinberg, Bringle and Williams, 2010
	Students understand the essence of collaboration as community members	Culvert, Jagoda & Jensen, 2011
	Students have wider exposure to community problems	
	Service-learning students present actual solutions to problems of the society	
	Students become well-informed citizens of the society	
Civic skills	Students participating in service-learning have improved civic skills	Eyler & Giles, 1999
	Service-learning involvement has positive effect on students civic sense and behaviours	Gray, Ondaatje and Zakaras, 1999
	Students have better citizenry skills such as communication, teamwork and interpersonal skills	Astin et al, 2000
	Service-learning is a good platform for student civic participation and enhancement of skills	Butler, 2009
		Kenworth-U'Ren, 2008
	Culvert, 2009	
	Beatty, 2010	
	Kilgo, 2012	
	Stokamer, 2013	

	Service-learning students have the ability to help out people in the community There is a close relationship between service-learning and students' civic skills	
Civic commitment	Service-learning students show readiness to resolve problems of the society Service-learning gives students an opportunity to review their beliefs towards social justice Students start thinking about helping out the community people who are in need Students demonstrate positive attitude towards others in the community irrespective of cast, colour and creed The students who participate in service-learning show better commitment to solve the problems of people in the society Students show determination to ameliorate the destiny of all those who are in need of help Students work as community volunteers Community service-learning is a better opportunity for learners to improve their social commitments in the society Students work as social change agents	Rama, Ravenscrot, Wolcott & Zlotkowski, 2000 Kahne & Wetheimer, 2003 Jones & Abes, 2004 Balciuniene, 2007 Gehrke, 2008 Robert, Bringle, Julie & Hatcher, 2009 Larson & Dexter, 2010 Robinder, 2012
Civic values	Service-learning promotes civic dispositions of students Students show active role in sharing the positive side of their educational training Service-learning is an active pedagogy that helps students to provide help to people in society Students work as active citizens and collaborate with community members Service-learning is a good approach to change the minds of students towards social good Teachers act as mediator between service-learning course and students' training during community based activity Service-learning helps improve the civic tendencies of students Service-learning provides exposure to students to work as civic pedagogy Students share knowledge and work for social justice	Schennah, 2001 Eyler, 2002 Billing, Root, Jesse, 2005 Wilczenski & Coomey, 2007 Youniss, Atkins, 2007 Kahne & Spote, 2008 Batistoni, 2009 Parker et al, 2009 Bringle & Steinberg 2010

Measure

For data collection, a 21 items scale named Service-Learning Civic Competency Scale (SLCCS) was developed based on review of literature as stated above. The scale was checked by three subject experts for content validity. Based on their feedback, the scale items were refined and improved in terms of language clarity and understandability. The scale was developed using 5-point Likert format with 5 categories ranging from strongly agree (5) to strong disagree (1) for the respondents. This format is flexible and provides an easy way for the participants to give their responses in the questionnaire.

Reliability and validity

The inter consistency or reliability of the scale was checked based on Cronbach alpha test. The results of reliability test for alpha value was above .70. Total alpha if item deleted was also checked to retain or delete any item was poor. Thus no item was deleted as all items were above .40 which was the cutting point for item retention. The instrument was thus made contextually specific. The context specific nature of the instrument means that it is not feasible to compare it to an existing instrument. It is also not viable to consider the instrument as a predictive tool since the items itself seek to explore attitudes and opinions at the current time and does not aim to predict actions which will take place in the future.

Construct validation

Factor analysis technique was used to check construction validation of the scale. Exploratory factor analysis (EFA) was used to determine the dimensionality of the scale. Whereas, confirmatory factor analysis was used to test the hypothesised model or factor structure identified through Exploratory Factor Analysis (EFA). The EFA was used to identify the factor structure of the instrument. The KMO and Bartlett's Test of Sphericity were used to ascertain sample adequacy. The model fit estimation was done based on different model fit indices such as Chi-square / DF Ratio (< 5), Goodness of Fit Index (GFI $> .900$), Adjusted Goodness of Fit (AGFI $> .800$), Root Mean Square Residual (RMR $< .050$), Comparative Fit Index (CFI $> .900$), Tucker-Lewis Fit Index (TLI $> .900$) and Root Mean Square Error of Approximation (RMSEA $< .080$).

Pilot Test

To begin with, the instrument was pilot tested. For this purpose, initially 30 participants were selected who had attended service-learning project. These students were excluded from the major data collection process.

Data collection

The questionnaire was distributed among the students based on availability of the respondents and their willingness to participate in the study. Permission was obtained from the college administration for distributing questionnaires to the respondents before data collection.

Data Analysis

Exploratory Factor Analysis (EFA) was conducted to find out the dimensionality of the scale and confirmatory factor analysis was used to check and verify the model fit based on the collected data. The collected data were checked for skewness and kurtosis examination and also screened for checking missing values before conducting the actual data analysis. The data was initially entered

into SPSS version 20 for computation and initial testing for factor analysis. Secondly, AMOS version 18 used for testing and verification of hypothesized model. The AMOS was run several times to get the desired values for the goodness of fit using fit statistics as given above. Finally all the goodness of fit index values was found within the acceptable parameters.

Structural Validity

Exploratory factor analysis was applied to find out the structural validity and confirmatory factor analysis of the items test. The structural validity is used to examine the construction of the instrument. It is assumed that each of the items will correlate with the other as basic assumption of exploratory factor analysis to give evidence for sample adequacy and correlation between the items. The KMO value was above 0.5 which indicated sufficiency of the sample and correlation between items was checked through Bartlett’s test of sphericity as shown in Table 2.

Table 2: KMO and Bartlett’s test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.961
Approx. Chi-Square		15766.715
Bartlett's Test of Sphericity	df	210
Sig.		.000

Table 2 indicates that the KMO is high (.961) and Bartlett’s test of sphericity is significant (.000) which is essential for conducting factor analysis test as well as find out the outputs for rotated component matrix.

Table 3: Rotated factor matrix of civic competency scale

Items	Communalities	Domains			
		1	2	3	4
CN	.765	0.728	0.252	0.391	0.140
CN	.824	0.713	0.274	0.476	0.121
CN	.779	0.769	0.230	0.354	0.091
CN	.775	0.782	0.491	0.351	0.065
CN	.737	0.701	0.418	0.267	0.014
CN	.803	0.775	0.389	0.224	0.004
CN	.768	0.807	0.285	0.152	0.115
CS	.729	0.782	0.266	0.208	0.066
CS	.820	0.815	0.304	0.246	0.053
CS	.804	0.802	0.308	0.249	0.057
CS	.615	0.779	0.023	0.048	0.069
CS	.788	0.781	0.209	0.061	0.362
CC	.819	0.776	0.210	0.147	0.389
CC	.813	0.755	0.206	0.051	0.445
CC	.756	0.818	0.222	0.068	0.183

CC	.765	0.790	0.295	0.014	0.233
CC	.725	0.705	0.350	0.097	0.309
CV	.780	0.758	0.399	0.058	0.207
CV	.753	0.774	0.331	0.006	0.212
CV	.791	0.763	0.377	0.079	0.248
CV	.781	0.762	0.345	0.068	0.277

Table 3 indicates the factor loading for all the items in the four components. The correlation of each of the items with all factors is also shown. A good item has high factor loading on a specific factor. The initially conducted results show that four domains were identified. On the basis of rotated component matrix result it indicated that there were four domains in the scale such as civic knowledge (CK) having 7 items, civic skills (CS) having 5 items, civic commitment (CC) having 5 items and civic values (CV) having 4 items in the scale.

Measurement model test

On the basis of the acquired result of the maximum likelihood method the four domains were identified which include (1) civic knowledge, (2) civic skills, (3) civic commitment, and (4) civic values. No items were removed during the model fit testing from the identified structure. Goodness of fit was checked to assess whether measurement structure represents the actual responses of the respondents and the model fits the data. The first model is the initially produced design which consists of the four factors or domains such as civic knowledge, civic skills, civic commitment and civic values. The second model follows the results of the EFA that consists of the four domains. The third model all the items were measured regardless of the type of the items in the structure as shown in Table 5.

Table 4: Goodness of fit indices for measurement model

	χ^2	DF	χ^2/DF	RMSEA	GFI	AGFI	RMR	TLI	CFI
First Model	11,232.615	5552	2.432	0.75	0.631	0.575	0.766	0.814	0.733
Second Model	09,484.544	5034	2.324	0.72	0.476	0.456	0.722	0.754	0.751
Third Model	7446.362	2876	2.543	0.78	0.532	0.483	0.721	0.822	0.802

The measurement model was tested a number of times to get better for model fit results. The results show that model third was the best model for measuring the civic competencies of students as shown in Table 4. The index value of RMSEA is less than 0.8 which is an acceptable threshold value. The RMSEA value for the first and second model is less than 0.8. Each of the models presented a good precise and accurate model fit values. Also the values for GFI, AGFI, RMR, TLI and CFI were also checked. The second model is a better model than the first model. The main reason could be that CFI value of the third model is greater than the CFI value of the first model. This value is determined for checking whether the model is suitable or not. On the basis of the analysis, the TLI value of the third model is 0.822 and CFI value is 0.802. The GFI and RMR values for the third model are greater than the other models and are come closer to the model fit values of the measurement model. The overall results indicated that model 3 presents a better evidence for the goodness of fit among the other models. The confirmatory factor analysis is given in Figure 1.

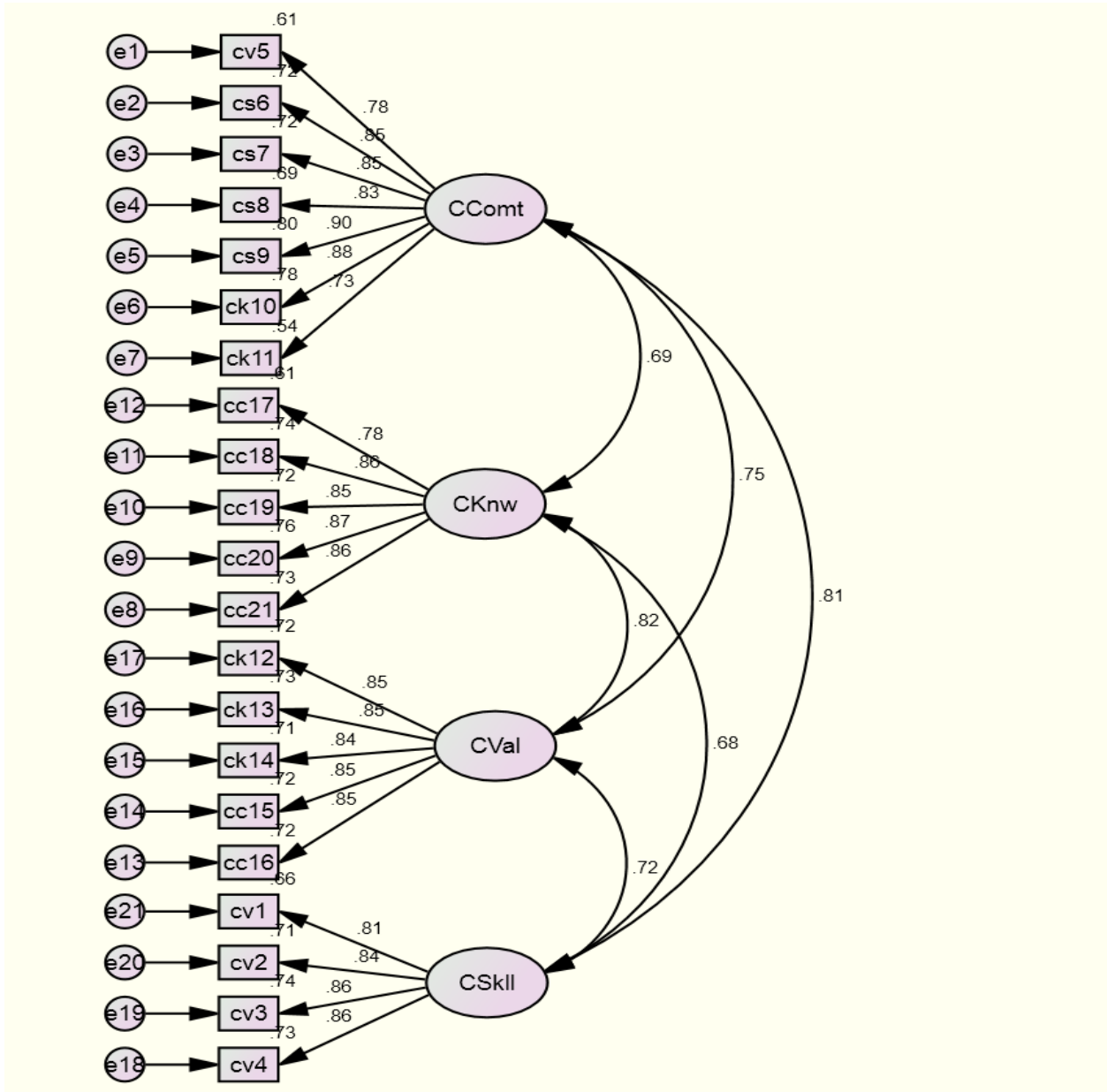


Figure 1: Measurement Model

Figure 1 shows that the correlation among the four domains and each of the items as shown in the measurement model is above 0.5 which is the acceptable threshold value. It means that all the items in the scale have good correlation in all the four domains. Each of the items is in a good fit to its respective domain. This provides the evidence that all the items are highly compatible with the pre-determined domains in the scale. The correlation among the items and the domains is above 0.5 which indicates that there is a strong correlation among the domains.

Discussion

This study aimed to develop and validate an instrument for measuring the perceptions of college students about the service-learning as a catalyst to promote their civic competencies. Based on review of literature four essential domains were identified which include (1) civic knowledge, (2) civic skills, (3) civic commitment and (4) civic values. On the basis of these themes a 21 items scale was drafted. The scale was pilot tested for reliability and refined based on three subject

experts. On the basis of their feedback, the items of the scale were refined and cleaned from language and grammar errors. Cronbach's alpha test was used to check reliability of the scale and validity. The value of the alpha was above 0.70 which is a sufficient reliability value as a rule of thumb in social sciences. These evidences suggested that the scale can be used to measure contributions of service-learning as a catalyst for civic competencies of students in a college context.

The confirmatory factor analysis revealed that the model 3 was selected as the best model for goodness of fit based on the data and a good framework for the service-learning students to assess their civic competencies. The 21 items scale with the four domains fitted the data. The correlation scores of all the domains among themselves and all the items for each of the domain also greatly match the representative domain. The findings based on the data for model 3 revealed that the RMSEA value of 0.78 which showed that the framework had a good precision values and it fitted the data. Similarly, the GFI value was 0.532 showing a good level of accuracy for the framework. The CFI 0.822 and TLI 0.802 values also showed that the formwork was best fitted to the data and was the best model.

The civic competencies framework for the college service-learning students consisted of four domains. Among these the first domain was civic knowledge. This domain consisted of 5 items or indicators. This domain explains how students receive knowledge about civic responsibilities, civic roles in the society and civic dispositions as active citizens in the society (Makmur, 2023; Beatty, 2010). The second domain was related to civic skills of students. This domain consisted of 4 items. This domain focuses on civic skills of students such as effective communication skills, problem solving skills, interpersonal skills, reflective or critical thinking skills and leadership skills (Macías Gomez-Estern, Arias-Sánchez, Marco Macarro, Cabillas Romero & Martínez Lozano, 2021). The third domain is concerning civic commitment of students. This domain consists of 7 items. This domain focuses on attitude of students towards civic roles, civic dispositions of students, determination of students towards solving community issues, volunteerism and willingness to work for others and respect diversity, think about the welfare and wellbeing of others in the society (Sundberg & Koehler, 2023). The fourth domain is related to civic values of the students. This domain consists of 5 items. This domain relates to respecting others, show collaborative approach during work, maintain positive attitude, care for law, participate in democratic activities of the society as active citizen and show team spirit (Ribeiro, Aramburuzabala & Paz, 2021).

Conclusion

The analysis of results produced a framework for service-learning students related to their civic competencies in four areas such as civic knowledge, civic skills, civic commitment and civic values as essential outcomes of service-learning participation of college students. On the basis of the framework a scale was developed and validated. The analysis of the structural validation resulted in the identification of four important domain or civic competencies. The value for Crombach's alpha was above .70 and other assessment indicators provided strong evidence for the scale validation such as exploratory and confirmatory factor analysis suggested that there were four important domains. The KMO value was .961 and Bartlett's test of sphericity of 0.00 meaning that all the items were significantly correlating to each other. The factor loadings for all the four domains or civic competencies were above 0.5 showing that the scale or instrument can be used for measuring the perceptions of college students about the contributions of service-learning as a catalyst for their civic competencies. This instrument is a useful tool for service-learning teachers, service-learning program managers as well as civic education curriculum developers. They can use

this for designing better civic education curriculum based on the four essential domains of civic competencies identified in this study. The organizers of service-learning programs may also use this instrument for indentifying the civic competencies of service-learning course students and for developing more appropriate service-learning and civic education programs.

References

1. Adarlo, G. M. (2020). Service-learning as global citizenship education: Acting locally on global challenges and concerns. *IAFOR Journal of Education*, 8(3), 7-23.
2. Afaq, A., Khan, Q., Arshad, A., Sibte-e-Ali, M., & Malik, A. A. (2022). The job satisfaction of academic staff in higher educational institutes. *Journal of South Asian Studies*, 10(1), 95-101.
3. Ahmad, I., Deeba, F., & Raza, M. A. (2023). Examining undergraduates' perspectives on course-based outcomes of service-learning from vocational education context, 11(1), 155-165.
4. Ahmad, I., & Gul, R. (2023). Impact of online service-learning on civic and social justice behavior of undergraduate laboratory-based graduates. *Human Arenas*, 6(3), 639-654.
5. Ahmad, R., Begum, S., & Ahmad, I. (2022). Impact of service-learning on communication skills development of students of vocational schools. *Development in Language Studies*, 2(2), 41-49.
6. Alscher, P., Ludewig, U., & McElvany, N. (2022). Civic education, teaching quality and students' willingness to participate in political and civic life: Political interest and knowledge as mediators. *Journal of Youth and Adolescence*, 51(10), 1886-1900.
7. Beatty, J. E. (2010). For which future? Exploring the implicit futures of service-learning. *International Journal of Organizational Analysis*, 18(2), 181-197.
8. Blevins, B., LeCompte, K. N., & Bauml, M. (2018). Developing students' understandings of citizenship and advocacy through action civics. *Social Studies Research and Practice*, 13(2), 185-198.
9. Bringle, R. G., & Clayton, P. H. (2012). Civic education through service learning: what, how, and why?. In *Higher education and civic engagement: Comparative Perspectives* (pp. 101-124). New York: Palgrave Macmillan US.
10. Caspersz, D., & Olaru, D. (2017). The value of service-learning: The student perspective. *Studies in Higher Education*, 42(4), 685-700.
11. Chang, D. F., Chang, T. N., & Chen, C. C. (2021). Exploring the Effect of College Students' Civic Engagement on Transferable Capabilities during the COVID-19 Pandemic. *Sustainability*, 13(19), 11074.
12. Clark, L. A., & Watson, D. (1995). Constructing validity: basic issues in objective scale development. *Psychological Assessment*, 7(3), 309-319.
13. Dapena, A., Castro, P. M., & Ares-Pernas, A. (2022). Moving to e-Service Learning in Higher Education. *Applied Sciences*, 12(11), 5462.
14. Deeley, S. J. (2010). Service-learning: Thinking outside the box. *Active Learning in Higher Education*, 11(1), 43-53.
15. Derreth, R. T., & Wear, M. P. (2021). Critical online service-learning pedagogy: justice in science education. *Journal of Microbiology & Biology Education*, 22(1), 10-1128.
16. Fitzgerald, J. C., Cohen, A. K., Maker Castro, E., & Pope, A. (2021). A systematic review of the last decade of civic education research in the United States. *Peabody Journal of Education*, 96(3), 235-246.
17. Furr, R. M. (2011). *Scale Construction and psychometrics for social and personality psychology*. New Delhi, IN: Sage Publications. <https://doi.org/10.4135/9781446287866>

17. Gul, R., Ahmad, I., & Tufail, M. (2022). Understanding the pedagogical role of service-learning for preparing citizen leaders in higher education. *Africa Education Review*, 19(2), 25-39.
18. Hoggan-Kloubert, T., & Mabrey III, P. E. (2022). Civic education as transformative education. *Journal of Transformative Education*, 20(3), 167-175.
19. Ihsan, M., Sherazi, Z., & Hayat, K. (2023). Effect of higher education in fostering civic values among university students. *Global Educational Studies Review*, 8(8), 37-42.
20. Iqbal, M., Mahmood, A., & Iqbal, M. Z. (2023). Analysis of Pakistan studies curriculum for secondary classes in the context of civic education. *Voyage Journal of Educational Studies*, 3(2), 163-176.
21. Jain, S., Cohen, A. K., Kawashima-Ginsberg, K., Duarte, C. D. P., & Pope, A. (2019). Civic engagement among youth exposed to community violence: Directions for research and practice. *Journal of Youth Development*, 14(1), 24-47.
22. Karliani, E., Kartadinata, S., Winataputra, U. S., & Komalasari, K. (2019). Indonesian civic engagement among college students. *Journal of Human Behavior in the Social Environment*, 29(5), 582-592.
23. Kramer, C. S., Lester, A. J., & Wilcox, K. C. (2021). College, career, and civic readiness: Building school communities that prepare youth to thrive as 21st century citizens. *Theory & Research in Social Education*, 49(4), 602-629.
24. LeCompte, K., Blevins, B., & Riggers-Piehl, T. (2020). Developing civic competence through action civics: A longitudinal look at the data. *The Journal of Social Studies Research*, 44(1), 127-137.
25. Levine, P. (2014). A defense of higher education and its civic mission. *The Journal of General Education*, 63(1), 47-56.
26. Naval, C., Villacís, J. L., & Ibarrola-García, S. (2022). The transversality of civic learning as the basis for development in the university. *Education Sciences*, 12(4), 240.
27. Nurmanita, M., & Ridwan, R. (2023). Application of Service-learning model to shape learners' civic engagement in junior high school. *Jurnal Paedagogy*, 10(4), 973-981.
28. Makmur, C. S. (2023). Fostering civic dispositions in the digital era 4.0 through local wisdom-based civic education. *Journal of Humanities and Civic Education*, 1(1), 61-69.
29. Macías Gomez-Estern, B., Arias-Sánchez, S., Marco Macarro, M. J., Cabillas Romero, M. R., & Martínez Lozano, V. (2021). Does service learning make a difference? Comparing students' valuations in service learning and non-service learning teaching of psychology. *Studies in Higher Education*, 46(7), 1395-1405.
30. Miles, J. (2021). The ongoing crisis and promise of civic education. *Curriculum Inquiry*, 51(4), 381-388.
31. Mühleck, K., & Hadjar, A. (2023). Higher education and active citizenship in five European countries: How institutions, fields of study and types of degree shape the political participation of graduates. *Research in Comparative and International Education*, 18(1), 32-54.
32. Norell, E. (2022). Civic engagement meets service learning: Improving wikipedia's coverage of state government officials. *PS: Political Science & Politics*, 55(2), 445-449.
33. Nuryadi, M. H., & Widiatmaka, P. (2023). Strengthening civic literacy among students through digital literacy in society 5.0. *Journal of Education and Learning (EduLearn)*, 17(2), 215-220.
34. Owusu-Agyeman, Y., & Fourie-Malherbe, M. (2021). Students as partners in the promotion of civic engagement in higher education. *Studies in Higher Education*, 46(6), 1241-1255.

36. Payne, K. A., Adair, J. K., Colegrove, K. S. S., Lee, S., Falkner, A., McManus, M., & Sachdeva, S. (2020). Reconceptualizing civic education for young children: Recognizing embodied civic action. *Education, Citizenship and Social Justice*, 15(1), 35-46.
37. Rak, J., & Rezmer-Plotka, K. (2022). Civic education for democracy during crisis: Measuring state media engagement. *The New Educational Review*, 69, 82-94.
38. Rehman, Z. U., Majoka, M. I., & Naz, S. (2018). Role of universities in developing citizenship among students: The case of Pakistan. *Global Social Sciences Review*, 3(3), 142-157.
39. Resch, K., & Schritteser, I. (2023). Using the service-learning approach to bridge the gap between theory and practice in teacher education. *International Journal of Inclusive Education*, 27(10), 1118-1132.
40. Ribeiro, Á., Aramburuzabala, P., & Paz, B. (2021). Reflections on service-learning in European higher education. *RIDAS. Revista Iberoamericana de Aprendizaje-Servicio*, (12), 3-12.
41. Salam, M., Awang Iskandar, D. N., Ibrahim, D. H. A., & Farooq, M. S. (2019). Service learning in higher education: A systematic literature review. *Asia Pacific Education Review*, 20, 573-593.
42. Saleh, M., Komalasari, K., Sapriya, S., & Masyitoh, I. S. (2022). Students' perceptions of civic engagement in ICT skills-based citizenship education learning. *European Online Journal of Natural and Social Sciences*, 11(4), pp-1363.
43. Sánchez Agusti, M., & Miguel Revilla, D. (2020). Citizenship education or civic education? A controversial issue in Spain. *Journal of Social Science Education: JSSE*, 19(1), 154-171.
44. Shea, L. M., Harkins, D., Ray, S., & Grenier, L. I. (2023). How critical is service-learning implementation?. *Journal of Experiential Education*, 46(2), 197-214.
45. Shek, D. T., Li, X., Yu, L., Lin, L., & Chen, Y. (2022). Evaluation of electronic service-learning (e-service-learning) projects in mainland China under COVID-19. *Applied Research in Quality of Life*, 17(5), 3175-3198.
46. Sundberg, A. D., & Koehler, E. N. (2023). Bridges to civic health: Enhancing shared service-learning collaboration in nursing and history. *Journal of Experiential Education*, 46(3), 261-280.
47. Sze-Yeung Lai, C., & Chi-leung Hui, P. (2021). Service-learning: Impacts of learning motivation and learning experience on extended social/civic engagement. *Higher Education Research & Development*, 40(2), 400-415.
48. Tinkler, A., Tinkler, B., Reyes, C., & Elkin, S. (2019). Critical service-learning: Learning through experience to advance teacher education. *Journal of Experiential Education*, 42(1), 65-78.
49. Torney-Purta, J., Cabrera, J. C., Roohr, K. C., Liu, O. L., & Rios, J. A. (2015). Assessing civic competency and engagement in higher education: Research background, frameworks, and directions for next-generation assessment. *ETS Research Report Series*, 2015(2), 1-48.
50. Waldner, L. S., Widener, M. C., & McGorry, S. Y. (2012). E-service learning: The evolution of service-learning to engage a growing online student population. *Journal of Higher Education Outreach and Engagement*, 16(2), 123-150.
51. Wiersma-Mosley, J. D., & Garrison, M. B. (2022). Developing intercultural competence among students in family science: The importance of service learning experiences. *Family Relations*, 71(5), 2070-2083.
52. Widodo, M. (2023). Exploring the role of educational technology in promoting civic education in Indonesia: Current state, challenges, and opportunities. *Advances in Educational Technology*, 2(1), 25-34.