Development and Validation of Service-Learning Management Scale in Pakistani Setting

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Abstract

Service-learning is an emerging teaching and learning field. Many scales are available that measure service-learning outcomes, effects and implications. There was a dearth of scale for measuring service-learning management. In this study, we report the process of developing and validating of service-learning management scale in Pakistani context in vocational education field. The scale development and validation comprised of two phases. In the first phase, we reviewed literature and generated a 62 item scale. For content validity, experts were consulted from the relevant field. In the light of their feedback, the scale was refined. In the second phase, we ensured reliability by piloting the scale as well as for item retention and reduction. The items were reduced to 52 based on corrected item total correlation. Exploratory Factor Analysis (EFA)was used to explore the factor structure. In this way, through application of EFA 10 factors were identified. These factors were: need analysis, learning goals, planning, training, implementation, evaluation, decision-making, coordination, relationship and responsibility which accounted for 72 % of the variance in the scale. Varimox Rotation with Principal Component Analysis was applied to evaluate the factor structure of the scale. Cronbach's alpha coefficient for factors ranged from .64 to .86. The results showed that the Service-Learning Management Scale is a useful instrument for measuring management issues in service-learning field. It is recommended that the scale may be tested in other fields for getting more robust results.

Keywords: *Validation, exploratory factor analysis, vocational education, indigenous scale*

Introduction

The management of service-learning is complex, dynamic and multidimensional in nature (Butin, 2010). Different people are involved in the designing, administration and implementation of service-learning such as academic administrators, student activity staff, volunteer service coordinators, student leaders, campus personnel and faculty (Johnston *et al.*, 2016; Rue, 1996). There is a need to work closely on the part of these people in order to organize the service-

learning program. There is also need to establish productive relationship with the community organizations, government officials, elected representatives; local government and non-governmental organizations (Bucco & Busch, 1996).There are many administrative structures available for managing service-learning programs. Some have comprehensive service-learning centers with many staff members to run the programs. Some provide coordination through student development unit or academic administration unit. In some institutions, individual faculty members and campus ministers hold the responsibility (Bruening *et al.*, 2015). However, despite all these, and regardless of the model, administrative issues are vital to be explored and resolved for the successful management of service-learning program (Rue, 1996).Service-learning is conducted in multiple contexts, so a number of challenges are always faced by the administrators in managing the programs. The faculty, student and community have its own political realities that ultimately shape the environment for the conduction of service-learning (Bringle & Clayton, 2012). To understand these political realities, building key relationships, planning and coordination and developing meaningful partnerships are essential to successfully administer service-learning programs (Bringle, Hatcher*, et al.*, 2012). There is a need to make informed decisions for laying the foundation of service-learning programs to establish clear goals and sound evaluation procedures (Rue, 1996).

There are many measuring instruments available in the existing literature related to service-learning experiences (Moely*et al.,* 2002; Phillips, 2011). However, these instruments mostly focus on the students" outcomes of service-learning from students" perspectives. Little instruments exist that actually explore and measure managing issues in service-learning field from faculty perspective. The current research on service-learning has mostly explored students" perspectives of their service-learning experiences, whereas faculty members are ultimately responsible for implementing and supervising the service-learning.

Review of Literature

Managing service-learning is a complex matter. There are several ways through which the management of service-learning and its desired goals can be achieved (Bucco& Busch, 1996; Buti, 2010). The administrators of service-learning must have a complete understanding of the community, it resources, challenges, key constituencies, partners and the political dynamics. They should also know how to balance it with the institutional goals of promoting students" learning and development (Rue, 1996). In order to balance the tensions between education and administration, the administrators must mediate between institutional subcultures and solve the issues related to faculty autonomy and administrative accountability (Bringle, Clayton*, et al.*, 2012). In the initial face, the administrative challenges vary and depend on the needs for the program development. It is necessary that the service-learning program must have the support of all the key people such as the institutional administrators, faculty, students and community members (Vogel *et al.*, 2010).

Administrators can help in determining to what extent coordination and support can be created between all these who are involved in the service-learning program (Rue, 1996).The administrators need to have a clear idea of how to plan and set goals for service-learning program development and implementation. Planning and goal setting is one of the key factors in determining the effective administration of a service-learning program. Strategic planning provides a useful framework for program development (Middleton, 2005). It helps in identifying the weaknesses and strengths, external threads and opportunities for achieving the mission and

goals of the program. The presence of all the stakeholders in the planning stage is necessary to develop a clear framework for program development and implementation, to solve the challenges and political problems. Goal setting helps in developing consensus among all the stakeholders at the planning phase. It allows the institution to be clear about the resources, time and space available and what to be accomplished and how to achieve the priorities (Bringle & Hatcher, 1996; Butin, 2006). The successful administration of service-learning program depends on effective coordination between the community and the institution (Roakes & Norris-Tirrell, 2000). Many challenges arise due to individual initiatives without the knowledge of all the service- learning stakeholders. Through effective coordination, the program administrators will be able to overcome many challenges and share their experiences, knowledge and evolving information with the communities that can contribute towards the service-learning program development (Rue, 1996). Lack of coordination may create a loss of credibility of the institution in the community. Institutional coordination should include coordination among academic unit, residence life, campus ministry, student leadership, student-community service organizations and faculty bodies. A better coordination and strategic planning may be provided by the service-learning advisory board that includes representation from faculty, students and community members with support from the service-learning administrators. The coordination may also come from service-learning curriculum committee. It may provide support for approval of new and enrichment of the existing service-learning courses (Zhang *et al.*, 2011).

Developing community partnership is another key element of the service-learning program. The success and failure of a service activity depends on the nature of partnership between the institution and the community. The service-learning administrators must find out the nature of the relationships, the type, mission and traditions of the institutions (Gelmon *et al.*, 2018). A critical administrative challenge is how to minimize the disruptions caused by the academic year cycle. This issue is a hindering factor in the effective community involvement as the typical student"s service-learning involvement is either semester based or week over. At the end of the term, students" participation ends and community issues and realities remain unfulfilled. Thus the administrators must plan to provide sustainable support to the communities through service-learning program. For this purpose, such program should be designed which have longer duration and cyclical transitions (Rue, 1996).Program evaluation is another key component of the service-learning program. One of the challenges faced by the service-learning administrators is assessment of service program. Evaluation helps in assessing worth of the program and in key decision-making. The evaluation is normally conducted for two purposes, for student learning and development and to judge the value of the service-learning from the community perspective (Battistoni, 2017).

According to Butin (2006), there are seven common pitfalls of the evaluation projects such as poor planning, complex evaluation design, lack of attention to the details of data collection, inexperienced evaluators, failure to use the collected data, focus on program protection rather than program improvement and poor presentation of results. It is necessary for the success of service-learning program that the administrators must link the evaluation to the program goals and desired outcomes. Another important challenge is service-learning program termination. It is believed that one of the most difficult decisions in front of service-learning administration is to decide when to terminate a service-learning program (Jacoby, 2003).Researchers (Rue, 1996; Butin, 2010) advise that such decisions must be based on the program mission, capability of the service-learning program to meet the community needs, the available resources and student

learning goals. It is further advised that the program termination must be decided in different conditions: when it is confirmed that the students have lost their interest in the service activity, when community participation seems to decrease, when the program fund dries up, when the matching between the challenges, when the available resources no longer remains or when the program evaluation shows little or no impact as per the desired mission or goals. This is the appropriate time to terminate the program for the sake of maintaining the long term community relationship. In order to avoid such situations, most of the successful administrators constantly seek for resources, create strong link between the program evaluation and the fund raising process, meet with community members for alternative resource generation and motivate some community members or students to assume reasonability or volunteer for some of the administrative tasks involved in the service-learning activity. Rue (1996) further argues that service-learning administration needs to create a strong balance between accountability and autonomy. The essential matters related to accountability are safety and security, commitments and use of the institutional resources. The matters related to availability of opportunities for student voice, leadership role and decision-making. Administrators must be careful that more accountability may discourage student leadership and too much autonomy may result in inadequate standards that may harm the community members and students. To overcome this situation, administrators may do an assessment of the prevailing institutional leadership culture and also identify some advising strategies that may help.

It has been observed that students resist the leadership roles during the service-learning program implementation. They want to spend their time more in service rather than in dealing with the administrative responsibilities. These issues if not resolved at the very outset may lead to major complications and neglect of many important tasks. So to overcome this situation, administrators may encourage students groups to develop a rotating leadership model to perform the administrative responsibilities. This model is very challenging to be used. However, it may help in providing the students opportunity for learning about leadership roles. In this regard, administrators may also encourage the students to interview the service providers and the organizers about the quality of the service and its benefits. Another difficult challenge is advising the student groups to assist in leadership transition (Billig, 2011). Poor successive planning and failure to provide adequate training the students for their leadership roles may results in a failed and ill-equipped program. To overcome this situation, there is a need for placing in effective leadership development activities for those students who are interested in leadership roles rather than imposing on them (Bucco & Busch, 1996).

There are many administrative issues involved in taking decisions about the service-learning graduation. For this purpose, it is important that administrators must identify those who unwilling clients, students, staff and volunteers at the service site. There is a need that the institutions must decide about the placement and monitoring system of the students and others who are involved in the service-learning before starting a program (Delve *et al.*, 1990). Implementation of intensive service-learning in distant places may create administrative challenges in terms of finances, travel and transportation, housing, food, supplies climate, communication, health, matching community needs with students learning outcomes. To deal with such a situation, administrators may liaise with some government officials or agency members by collecting information that can be provided to students before placing them in such situations. The administrators must also try to strike a balance between the community needs and student learning outcomes throughout the designing, development and implementation of the service-learning program (Zhang et al, 2011).

The literature discussed above revealed a high discrepancy in service-learning management in different cultures and contexts due to its dynamic and complex nature. The fact remains that service-learning implementation produces different results in different places as different factors affect its implementation and management. This situation warrants for a valid, indigenous relevant scale for measuring service-learning management. To carry out research on such a complicated and challenging without a valid and reliable scale would not give any promising results to researchers, administrators and practitioners. The present study aimed to develop or validate a scale to measure service-learning management scale in vocational education. Although some rating scales are available this does not fully support the cultural, conceptual and contextual needs and variation in Pakistani society. Moreover, there are many deep rooted socio-politico, economic and religious disparities between western and eastern societies which management needs to consider while implementing service-learning. There was a paucity of such a scale which could meet these requirements. Hence, this present research was purposefully designed to develop a multidimensional, reliable and valid indigenous service-learning management scale. Many scales are available for assessing the outcomes of service-learning in the general education field. However, there is lack of valid and reliable indigenous scale for measuring service-learning management. This study attempts to bridge this gap in the current literature by developing and validating an instrument for measuring service-learning management in the context of vocational education of Pakistan.

Methodology

A quantitative survey approach was used to conduct the study. Exploratory Factor Analysis (EFA) was employed as a technique to explore perspectives of teachers about the issues and challenges. In exploratory factor analysis, normally a sample size more than 100 is considered adequate. The EFA is a factor analysis approach that helps in exploring latent dimensions in a data set (Phillips, 2011).Data were collected using a questionnaire from teachers working in three regions of Punjab province. All 315 teachers were sampled based on purposive sample technique involved in the vocational institutions in Punjab province. These teachers were trained for supervising students during service-learning activity. Using EFA was used as a exploratory technique. Before employing the EFA technique, Kaiser Olkin Meyer (KMO) and Bartlett"s Test of Sphericity were conducted to ensure sample adequacy (Fraser, 1998; Hensley,1999; Hinkin, 1995). In general, KMO above 0.50 and Bartlett"s Test of Sphericity 0.00 are acceptable ranges for conducting EFA (Hair *et al.*, 2011). In this study both the assumptions were fulfilled as shown in Table 1.

Based on EFA technique, a three factor model was identified that were underlying the data set. The factor structure was identified using Principal Component Technique (PCA). In fact, PCA is an exploratory technique used to explore the relationship between observed variables and its latent factors. The factor were extracted based on eigen values more than1 criteria (Hinkin, 1995). In this research, the three factors were identified and varimox was as rotational method as explained below in Table 2. As discussed above, the target population of this study was teachers of vocational training institutes. We used a purposively selected sample of 315 teachers who participated in the service-learning implementation in these institutes. In this study, we did not compare the perceptions of male versus female teachers. Rather, we gathered information irrespective of gender difference, because, we aimed to collect data on teachers" perception of service-learning management in vocational training institutes.

Scale Development

We used a common three stage approach of Fraser (1998) for developing the service-learning management scale. The scale was developed in three stages. In stage 1, we reviewed related literature on service-learning management and administration. In stage 2, we selected important and prominent statements and quotes from the review for making items and prepared the first draft. In stage 3, we field tested the selected items using item analysis based on validation procedures. These stages are discussed in detail below.

Stage 1- Reviewing Related Literature

This stage further consisted of four steps. The first step involved reviewing a vast amount of literature on service-learning management and administration. For this purpose, different types of books, journals, magazines and other related material was reviewed. We identified several key components of service-learning management which have been highlighted and indicated by various researchers, practitioners. As a second step, we reviewed various previously developed scales and instruments related to service-learning management which could be modified for developing the SLMS. In the third step, we classified the newly constructed scale into ten dimensions to ensure that all the dimensions are adequately covered. As a fourth step, we set of preliminary scales for reviewing of a panel of experts. The scales remaining after the review of experts were: planning, training, evaluation, decision-making, need analysis, implementation, learning goals, coordination, relationship and responsibility.

Stage 2- Item Generation

In this stage we generated items based on the review of literature. Selected important and prominent statements and developed items. We grouped together based on certain important themes that we identified during the review process as discussed above. We found these themes being repeated in the service-learning management. After preparing the initial draft having all the selected items, we showed these items o a panel of experts for face validity. In the light of the review feedback, we further narrowed down the items and simplified the items. We removed double barrel items.

Stage 3- Pilot Testing

During stage 3, we field tested the instrument with a purposively selected 60respondents (teachers) from the vocational training institutes for collecting sufficient response for carrying out the statistical analysis. First, we carried out internal consistency or reliability by applying Cronbach's alpha coefficient for measuring internal consistency of inter-correlation among all the items in the subscales in the instrument. We used .40 as the minimum threshold criterion to keep the items in the subscales. Those items which were not highly correlated and were below .40 were removed and alpha coefficient was maximized. Thus, those items which were within or above .40 were retained (Hinkin, 1995). In this way, we gathered evidence regarding the overall reliability and factorial validity of the subscales in the instrument.

Reliability and Validity

In the development of the Service-Learning Management Scale, we used the intuitive rational strategy and retained only those items which had higher international consistency in the final instrument. The instrument also relied upon the internal strategy of Hase and Goldberg (1967) which provides that items with higher factor loadings on their own scales and low loadings on

other scales are also kept in the final instrument. Although, we did not use any such scales due to dearth of scales on service-learning management. The following section describes the factor analysis for the SLMS.

Exploratory Factor Analysis

We used principal component analysis with varimax rotation and Kaiser normalization for investigating construct validity of the scale. Factor analysis ensures in identifying the underlying factor structure of large set of variables (Beavers *et al.*, 2013).It provides basic information that all the items in that scale are the representative items of the same scale and no other scale. Hence, only those items having .40 were kept in the scales. The poor items which were removed were below .40 threshold line. Thus, 10 subscales were originally created for SLMS through field testing and after factor analysis. These sub-scales were: planning, training, evaluation, decision-making, need analysis, implementation, learning goals, coordination, relationship and responsibility.

Results

As mentioned above, as an assumption of EFA, before data analysis, first KMO and Bartlett"s Test of Sphericity were conducted for Service-Learning Management Scale (SLMS) using SPSS 20. The KMO value was 0.919 which was higher than the mentioned threshold point 0.50. The test also fulfilled the Bartlett"s Test of Sphericity which was significant at .000 as illustrated in Table 1

Table1: KMO and Bartlett's Test of Sphericity (SLMS)

Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy		0.84
Approx. Chi-Square		1863.134
Bartlett"s Test of Sphericity	Df	451
	Sig	.000

Basically, KMO shows the proportion of variance in variables which might cause due to underlying factors. High values closer to 1.0 show that the factor analysis is useful with the data. However, values less than 0.50 is considered not useful for factor analysis. In this study, the values were above .50 which means that factor analysis done for extracting various factors for SLMS and principal component analysis used was an appropriate extraction method. Also, eigen value criterion and scree tests were used as criteria for determining the number of factors (Hinkin, 1995). Under the eigen value rule, the researcher retained only those factors that explained more variance then the average amount explained by an original item as suggested by (DeVellis, 1991). Based on the criterion of Kaiser (1999), as mentioned in (Osborne & Costello, 2009) those factors were retained which were found having eigen values greater than 1.

Principal Component Analysis

Table 2 indicates the results of principal component analysis (PCA). The scale SLMS was factorised into 10 components. The total variance of the construct is 71.85 based on the ten factors. The first component shared 18.61 of the common variance and second factor shares 9.68 in the common variation. The third factor shares 7.44 of the common variance, factor four, five,

six, seven, eight, nine and ten having 7.44, 7.28, 6.80, 6.70, 4.79, 4.63, 3.14 and 2.75 respectively.

Table 2Principal Components Analysis

Scale	Factor	Common Variation	Cumulative	KMO	Chi-Square	df	Sig.
	Planning	18.61	18.61				
	Training	9.68	28.29				
	Evaluation	7.44	35.74				
	Decision-making	7.28	43.02				
SLMS	Need analysis	6.80	49.82	0.919	16176.55	1326	0.000
	Implementation	6.70	56.52				
	Learning goals	4.79	61.32				
	Coordination	4.63	65.95				
	Relationship	3.14	69.09				
	Responsibility	2.75	71.85				

Scree Plot

The scree plot in the plotting of eigen value in descending order against their factor numbers determining where the eigen value level off. The inflection point between the steep slope and the levelling of the eigen value shows the number of meaningful factors. The first scree plot also shows that 10 components with eigen values greater than 1 of the 52 variables were extracted through factor analysis for SLMS as shown in Figure 1.
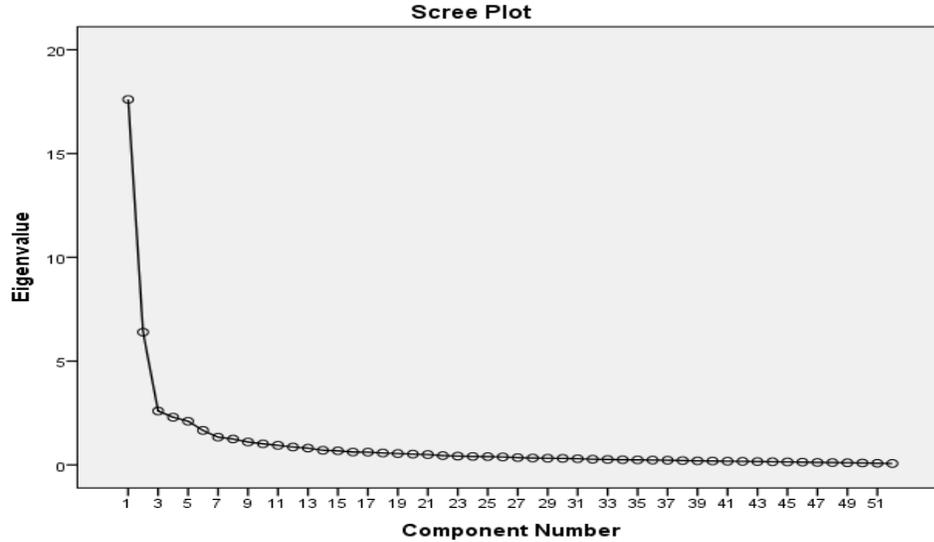
Figure 3.4 Scree Plot

4.4.4 Rotated Component Matrix

The rotated component matrix (RCM) refers to the matrix having factors which are loadings for each variable into each other. The rotation varimox was performed with Kaiser Normalization and the extractions were done by PCA. The RCM indicates ten components extracted from the SLMS that comprises 52 items. Based on the EFA, 10 components were generated for SLMS. Table 3 indicates the factor loadings for SLMS and instrument. Varimox was used in this study for the interpretation of extracted factors because it is most commonly used orthogonal rotation method. It is also helpful in understanding effects in the original data and minimizing the number of variables with high loadings. The factor loading for individual item determines whether to an item should be retained in a factor or removed. Generally, loading factor having .40 is often as the criterion for retaining items in a factor (Hinkin, 1995). In this study factor loadings lower than .40 cut-off were deleted. Table 3 illustrates the number of items after factor rotations for the two scales: SLMS instrument.

Table 3: Rotated Component Matrix for SLMS

Items	Components									
	1	2	3	4	5	6	7	8	9	10
Q1	.773									
Q2	.807									
Q3	.796									
Q4	.783									
Q5	.798									
Q6	.641									
Q7										.588
Q8						.759				
Q9						.560				

Q10					.433				
Q11					.601				
Q12					.571				
Q13	.495								
Q14		.608							
Q15									.587
Q16			.649						
Q17			.587						
Q18			.511						
Q19			.588						
Q20			.668						
Q21			.610						
Q22			.480						
Q23			.623						
Q24									.767
Q25								.665	
Q26		.714							
Q27								.632	
Q28		.544							
Q29	.812								
Q30	.814								
Q31	.864								
Q32	.867								
Q33	.833								
Q34		.791							
Q35		.765							
Q36		.648							
Q37								.488	
Q38							.514		
Q39								.470	
Q40							.815		
Q41							.813		
Q42						.688			
Q43						.721			
Q44						.435			
Q45					.529				
Q46						.470			
Q47					.679				
Q48					.612				
Q49		.575							
Q50				.751					
Q51				.745					
Q52				.740					

| Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. a. Rotation converged in 23 iterations. |

Table 3 shows the results for rotated component matrix showing factor loadings for each of the10 sub-scales which were identified through PCA as major components or dimensions of the SLMS. The first sub-scale "Planning Scale" has six items (Q1, Q2, Q3, Q4, Q5, Q6). The factor loadings for this scale range from.64 to.80 having a common variance of 18.612. The second sub-scale "Training Scale" has5 items (Q8, Q9, Q10, Q11, Q12). The factor loadings for this scale ranges from .56 to .75 having a common variance of 9.68. The third sub-scale "Evaluation scale" has seven items (Q14, Q26, Q2, Q34, Q35, Q36, Q49). The factor loadings for this scale range from .57 to .79 having a common variance of 7.44. The fourth sub-scale "Decision-making Scale" has eight items (Q16, Q17, Q18, Q19, Q20, Q21, Q22, Q23).The factor loadings of this scale range from .48 to .66 having a common variance of 7.28.The fifth sub-scale has three items "Need Analysis Scale" has three items (Q50, Q51, Q52). The factor loadings for this scale range from .74 to .75having a common variance of 6.80. The sixth sub-scale "Implementation Scale" has eight items (Q8, Q9. Q10, Q11, Q12, Q45, Q47, Q48). The factor loadings for this scale range from .43 to .57 having a common variance of 6.70. The seventh scale "Learning Goal Scale" has four items (Q42, Q43, Q44, Q46). The factor loadings for this scale range from .47 to .68 having a common variance of 4.79. The eight scale "Coordination Scale" has three items (Q38, Q40, Q41). The factor loadings for this scale range from .51 to .81having a common variance of 4.63. The ninth scale "relationship Scale" has four items (Q25, Q27, Q37, Q39). The factor loadings for this scale range from .47 to .66 having a common variance of 3.14. The tenth scale "Responsibility Scale" has three items (Q7, Q15, Q24). The factor loadings for this scale range from .58 to .76 having a common variance of 2.75 in the overall scale.

Reliability Analysis
In developing the SLMS instrument, we assessed the internal consistency of each of the sub-scale. Table 4 illustrates the alpha reliability for the sub-scales in the instrument. The internal consistency of the subscales ranges from .64 to .90 for the ten sub-scales. Based on a rule of thumb this range is considered between acceptable to excellent ranges. The internal consistency and reliability for ranged from 0.70 to 0.64 for the four sub-scales: Learning Goal (.70), Coordination (.67), Relationship (.66) and Responsibility (.65) which is acceptable (George &Mallery 2001). The alpha reliability for the three sub-scales: Decision-making (.77), Need Analysis (.74 and Implementation (.71) which is considered „good". The alpha reliability for the three sub-scales: Planning (.90), Training (.83) and Evaluation (.80) which is considered excellent" based on this rule of thumb.

Table 4: Cronbach's Alpha Coefficient for SLMS

Sub-scales	Number of items	Reliability alpha
Planning	6	0.90
Training	5	0.83
Evaluation	7	0.80
Decision-making	8	0.77
Need analysis	3	0.74
Implementation	8	0.71

Learning goals	4	0.70
Coordination	3	0.67
Relationship	4	0.66
Responsibility	3	0.64
Overall	51	0.89

Discussion

We found good psychometric properties for the service-learning scale as a new tool in the context of Pakistan. The scale acceptability was found good with more than 70% reliability for majority of the items with a national sample. The overall correlations among the most of the sub-scales for majority the items was found between 0.71- 0.90 which is a strong and satisfactory evidence about the acceptability of the instrument. However, some of the subscales showed weaker correlations showing between 0.64-0.70 in the scale. It may be due to sample size or response biased factors. However, this aspect could be rechecked in other context with more sample size. According to Hinkin (1995) sample size does have an effect on the results of the analysis. We suggest that this scale should be tested in other context to explore more reliable and valid results of the instrument using more number of respondents as sample.

Research has also indicated that sample differed significantly on country and contextual basis. In this study, we believe that this aspect might have influenced the results as well. To our best knowledge, this scale type of scale has not been developed in other context and research (Hinkin, 1995) also supports the argument that in developing new scale reliability between 0.50 - 0.70 is also considered a healthy and useful finding. So, the Cronbach"s alpha reliability for most of the sub-scales remained above 0.70-0.90 showing an acceptable internal consistency for the SLMS instrument. The overall SLMS instrument reliability was found to be strong at 0.89 showing more than satisfactory results for internal consistency. Despite this, the study has some limitations. First limitation was that the scale was developed in a developing country context where service-learning approach is very popular and is in its embryonic stage. The second limitation was the smaller number of sample. It is suggested that the instrument should be tested more rigorous approach like confirmatory factor analysis to ensure construct validity of the instrument and to get more valid results in terms of validation.

Conclusion

As a conclusion we may say that SLMS instrument is an important scale that demonstrated good psychometric prosperities as a new tool. It can be used in the other cultural and social context as a tool to assess management role and contributions where service-learning is integrated as a educational method, course or strategy in the educational curriculum. Management, faculty members may also use it for improving the academic performance of students and system of education. Further, the instrument may be tested in other contexts. This new SLMS is based on a solid theory and also demonstrated highly acceptable results in terms of its reliability as an instrument in the field of vocational education. It can be further test in other country to get more comprehensive theory evidence for its practicality and applications as a measuring tool in the field of service-learning.

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