

Validation of Organizational Solidarity Scale in Public Schools of Iran

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Abstract

Objective: The main aim of this study was to validate organizational solidarity scale in public schools of Iran.

Method: The scale consists of social-emotional and Structural -instrumental as two sub scales and 18 items with a Likert spectrum. Statistical population included all primary (3958 individuals) and secondary (5350 individuals) school teachers in Shiraz of whom 369 people were selected by random-stratified sampling method (based on the educational course) and Cochran's formula. To measure the validity of the questionnaire, two methods of cluster analysis and first order and second order confirmatory factor analysis were used and also Cronbach's alpha method was used to measure its reliability.

Results: Results of the item analysis indicated that each items have a significant correlation with the sub-scale of corresponding dimension. Result of the first and second order confirmatory factor analysis showed that each Items had a high degree of validity for explaining the corresponding dimension and organizational Solidarity. Also, based on the Cronbach's alpha values, the reliability of the scale and the corresponding sub-scales is desirable.

Conclusion: Overall, the obtained results approved the applicability of the prepared scale for field studies in this subject area.

Key words: Organizational solidarity, scale, validation, public schools

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Introduction

In a hyper-competition era, organizations face an environment which is mainly characterized by increasing complexity and dynamic globalization. Meanwhile, the realization of organizations existential philosophy, their meaningful function and organizational and environmental desirability and, requires a kind of organization internal coordination and integrity which is interpreted as “solidarity”. Organizational solidarity is the elixir of organizational life which allows organizations to be more compatible with environment, and finally create harmony among members and leads to achieving goals. Therefore, organizations not only organize themselves based on solidarity, but also organize various units to create solidarity among members (Shoham, 2008). Solidarity indicates common and coordinate actions of groups and individuals in organizations (Einwohner, Kaire, Sinclair-Chapman, Subramanian & et al., 2016) in which individuals and groups attempt to obtain their common interests. Even if, it is contrary to their direct interests (van Oorschot, 2014).

In general, organizational solidarity has two dimensions including social- emotional solidarity and instrumental (structural) solidarity (Seyed Javadin, 2007; Banting, Johnston, Kymlicka & Soroka, 2011) and its most important advantage is to increase the organization ability to meet environmental conditions. In a sense, creating solidarity in an organization, lead to share common ideas, values, attitudes and interests (Ribiere, 2001). Performance of the members improve continuously and the system try to response environment (Rezaeian, 2004). Hence, researchers believe that the degree of solidarity determines the degree of success in group activities in various economic, social, cultural and organizational aspects (Sapran, 2010; Harun & Mahmood, 2012). On the other hand, literature of the conducted researches about solidarity show that solidarity is strongly associated with organizational citizenship behavior at individual and group levels (Chen, Lam, Schaubroeck & Naumann, 2002; Organ, Podsakoff & MacKenzie, 2006; Paine & Organ, 2000) reduction of destructive conflicts (Jehn & Mannix, 2001; Nibler & Harris, 2003) and improvement of performance at the individual level (Chang & Bordia, 2001; Langfred, 1998) and at the group level (Dion, 2000; Light Shields, Gardner, 1997) and also innovation in groups and organizations (Mumford & Hunter, 2005) and personnel absence (Sanders, 2004; Sanders & Nauta, 2004).

According to what has been said and considering the positive outcomes of organizational solidarity including creating a common standard perspective, decision making based on a common perspective, importance of organizational health more than organizational units and individuals, clarity of the organization's mission and identifying behaviors that prevent organization progress (Seaker, 2000); Organizational solidarity has a constructive nature. Therefore, organizations which seek success should be able to develop solidarity mechanisms to improve their organizational effectiveness. In fact, success of an organization depends on integrity, solidarity and having high efficiency (Fazayeli & Shamshiri, 2013).

Accordingly, more efforts are necessary in recognizing the level of solidarity as the central core of organizational activities (Lee, 2004) and dimensions, its factors and outcomes in system; in a way that ignorance can make a lot of damage to the social systems in long term. So, it is worth to

provide a tool which is developed and validated within an indigenous space. In this regard, an organizational solidarity scale was developed locally by Torkzadeh, Taghizadeh and Moharrar (2012) for the first time in Iran, and its validity and reliability have been measured. The aforesaid scale consisted of 30 items categorized as a five-choice Likert spectrum, completely agree (5), agree (4), I have no idea (3), disagree (2), completely disagree (1). In this study, we tried to develop and validate a summarized scale because answering to all items is time consuming and makes the responder unwilling. In this case, it is also easier to use this measuring tool in field studies and to help researchers, managers and authorities in organizations in identifying organizational solidarity. On this basis, in this study first, Torkzadeh, Taghizadeh and Moharrar (2012) organizational solidarity scale was summarized and then it was implemented in Shiraz public high schools as a case study after testing its validity and reliability. Thus, in the present research, we tried to answer the question as to whether the summarized form of organizational solidarity scale has the necessary validity and reliability.

Literature review

Conceptual framework of solidarity

The concept of solidarity was raised by Emile Durkheim, a nineteenth-century French traditionalist, for the first time in the history of social science (van Oorschot, 2014). And it didn't last long that it attracted the attention of scholars and academics. This word is one of the most amazing and complete words in the political life of the twentieth century, which basically means the feeling of interdependence and mutual responsibility among members of a group, and comes with "love" and "friendship." (Wilde, 2007). In fact, solidarity means cooperative behavior among individuals and groups with a commitment based on mutual value and trust (Leites, Pereira, Rius, Salas & Vigorito, 2017).

According to Lights et al. (2017), solidarity is a sense of sodality and mutual responsibility among the members which leads to fulfillment of common goals, which refers to the extent that the subdivisions of an organization are interdependent (Rahman Seresht, Ramrad & Golvani, 2011). Therefore, when all individuals are systematically concentrating to achieve a collective goal, they are said to be collaborating. In a way that more solidarity means a higher degree of collaboration (Seyyed Javadin, 2007). Accordingly, individuals behave in accordance with the established values, rational and ethical principles that are relevant to all members of the organization, and will have less resistance to the decisions and goals of their group (Gelfand, Lim & Raver, 2004) Results of the conducted studies indicate that generally researchers have proposed two dimensions including social-emotional solidarity and instrumental solidarity for the organizational solidarity structure. These dimensions include features that help to improve the relationships of members of the organization, or provide them with guidelines for their duties and responsibilities.

Social-emotional dimension

Social-emotional solidarity is a kind of solidarity that, as a result of the existence of common value systems, creates a sense of shared identity among members of the group and society (Wallace &

Wolf, 2006), whereby common beliefs is shared and will create positive emotions in relationships of individuals and among groups. (Woosnam, Shafer, Scott & Timothy, 2015). In other word, solidarity and conformity of individuals and working groups and their ability to face negative effects and external threats is called social-emotional solidarity (Taghizadeh, 2012), which ensures individuals, institutions, organizations and different executive groups at different levels, to reach a common mental state (common mental models) and having capability of interacting with each other (Heidari Sareban, 2015). According to Koudenburg (2014) this kind of solidarity is considered as a bottom-up process in which a sense of identity is shared among all members of a group. This kind of solidarity can be measured by the extent people trust and help each other, and also the extent of their sense of belonging to a group; and also, it can be created and improved through shared motivations, favorable external image, efficient task division system, joining people to fulfill goals, a sense of happiness and satisfaction resulting from cooperation, collaboration and supporting participation (Taghizadeh, 2012).

Structural-instrumental dimension

Structural solidarity, is a sense of being together and it develop due to the mutual dependence of the members (Seyyed Javadin, 2007). In fact, structural solidarity is any orientation, arrangements and organizational mechanisms to advance and achieve the goals of a system (Torkzadeh, 2009). In other words, structural solidarity refers to the extent of individuals' sodality and collaboration to work on duties that is assigned to them by the organization (Haron & Mahmood, 2012). This kind of solidarity leads to communal participation, by which sense of being is realized in the organization (Benting et al., 2011). In order to create structural-instrumental solidarity, the goals of the group must be fully clarified and tasks should be divided, working groups and individuals should be joined together to achieve common goals, and their participation should be encouraged and supported. In this sense, structural solidarity is created and enhanced as a behavioral system by applying specific structures and mechanisms. This variable consists of three fundamental aspects, including strategic orientation, organizational plan (Cummings & Worley, 2014) and a cultural context (Torkzadeh, 2009).

Strategic orientation

In fact, they are principles that affect organization activities and strategy, and they are used to create appropriate behaviors that lead to better performance (Kheyri & Roshani, 2013). Indeed, in the current organizational environment, competition on the one hand, and continuous change on the other, face organizations with complicated situations; in this context, strategy acts as a useful tool and determine a certain direction and orientation for organization (Rahimnia & Sadeghian, 2011). Therefore, strategic orientation is consistent with the conditions of the external and internal environment, and to follow these, leads to the solidarity and integrity of work units and individuals (Torkzadeh, 2009).

Organizational plan

It refers to how to construct and modify a structure to fulfill organizational goals in line with strategic orientation (Robbins, 2015). For this purpose, four factors can be identified (Torkzadeh & Nekomand, 2014; Torkzadh, 2009).

- Special system for preparing the context
Supporting and directing efforts to develop the desired strategy.
- Structuring system

The basis for division of task, collaboration and coordination of systems, units and individuals and activities (direct, indirect) are in line with organizational goals.

- learning system and knowledge management

To evaluate the activities and the obtained results, organized learning is created from experiences, the development or production and publishing local knowledge.

- Human resources system

Includes efficient mechanisms for selection, placement, training, improvement, performance evaluation and rewarding individuals in line with strategy.

Cultural context

To create and strengthen a suitable cultural context, as the basis of guiding and orienting perceptions, thoughts and actions, attempt should be done through using methods and scientific tools and facilities correctly, to establish basic assumptions, shared values, and norms (Torkzadeh, 2009).

Results of researches suggests that systematic solidarity has been studied in a number of studies, some of which are referred to below. Barilunawugah, Eketu & Needorn (2018), in a research about the relationship between emotional intelligence of the leaders and solidarity of working groups in the state polytechnic river, showed that emotional intelligence of organization leaders improves the integrity of teamwork and solidarity among employees. Results of the researches conducted by Itzkovich & Heilbrunn (2016), indicated that solidarity of colleagues act as a preconception for deviant behaviors and deviations in organization, and the solidarity between colleagues reduces monopoly and immoral behaviors; while increase the organizational deviation. Based on the findings of Haron and Mahmood (2012) the extent of solidarity has a positive and significant relationship with organizational performance, and both types of solidarity i.e. Structural and social solidarity are predictive of performance. In addition, Chang, Duck & Bordia (2006), also investigated the relationship between system solidarity with performance, findings showed that structural solidarity is predictive of performance at individual level and social solidarity is predictive of system availability. Also, social solidarity was predictive of the performance of working groups. Chaw & Bruce (1999), in their research, found that high levels of structural solidarity is related to behavior leadership style, democratic style, and high levels of social solidarity with a democratic leadership style, social support, and positive feedback.

Based on the conducted researches in Iran, the following results were obtained: The results of a research by Najafi (2018) about predicting the ability to respond to environment based on the

leadership world view through organizational function in elementary and secondary schools in Shiraz, showed that organizational solidarity is a positive and significant predictive of ability to response to environment. Therefore, this kind of organizational solidarity has a mediating role between leadership world view and the ability to response to environment in schools.

The results of the study of Honarmandrad (2015), "The Study of Organizational Cohesion and Integration and Its Relationship with Organizational Effectiveness in the Executive, Governmental and Sports Agencies of Kerman", showed that there is a relationship between cohesion and organizational integrity and effectiveness. The results also showed that there is a relationship between the components of organizational cohesion and integration (coordination, fundamental values and agreement of organizational members) with organizational effectiveness and all components of organizational cohesion and integrity can positively predict organizational effectiveness and have an increasing effect. Marzoghi and Heydari (2016), at University of Medical Sciences in Shiraz found that organizational solidarity showed a positive and significant effect on the innovative behavior of employees.

Keshavarz (2015), also in his research found that there is a positive and significant relationship between organizational solidarity dimensions and dimensions of job motivation potential (job skill diversification, job identity, job importance, independence, feedback). Other results of the research were that emotional-social solidarity is a positive and significant predictor of job motivation potential due to independence. But it does not significantly predict the motivational potential of the diversity of job skills, job identity, job importance, feedback. Also, instrumental solidarity is a positive and significant predictor of job importance. But it does not significantly predict the motivational potential diversity of job skills, job identity, job importance, feedback. Memarbashi Aval, Sabri Nazarzadeh and Abdkhodaei (2012), in their research mentioned that by increasing the degree of sense of solidarity and self-esteem, the degree of job performance among employees also increases.

According to what have been said and considering the importance of organizational solidarity in effectiveness and accountability of social systems, it is necessary that managers and authorities of these systems, have a comprehensive tool in this regard, in order to fulfill the goals and desires of the members and organization, and to provide necessary basis for organizational solidarity, they should take necessary measures to achieve these goals, and then take the necessary actions to promote and achieve solidarity; To provide necessary basis to respond to environment. Therefore, in this study we attempted to provide an accurate and comprehensive tool for researchers, planners and authorities of organizations through validating the summarized form of organizational solidarity scale presented by Torkzadeh, Taghizadeh and Moharrar (2012); It was tried to codify a useable tool in the public schools involved in the study so that schools try to attempt more for the effectiveness of their plans with simple assessment of solidarity level.

Methods

The general purpose of this research was to validate the summarized form of organizational solidarity scale in public schools of Iran. The statistical population of the study included all primary

school teachers (3958 people) and public high school teachers (5350 people) in Shiraz during the academic year 2017-2018. Using a random stratified sampling method (according to the study period) and based on the Cochran formula, 369 people were estimated. In the Table 1 the number of participants as sample is shown based on their educational level.

Table 1: Frequency and percentage of research sample size

Row	Educational level	Sample size	Percentage
1	Elementary	157	42/5
2	First course of secondary school	126	23/3
3	Second course of secondary school	86	34/2
4	Total	369	100

In order to investigate the organizational solidarity status, the summarized form of organizational solidarity scale presented by Torkashade, Taqizadeh and Mohrarr (2012) was used. This summarized form consisted of 18 items and includes the two social-emotional and instrumental sub-scales. To answer these questions a five choice Likert spectrum was used and they were numbered as follow: completely agree (5), agree (4), I have no idea (3), disagree (2), completely disagree (1). These dimensions and items are mentioned in the Table 2.

Table 2: Dimensions and items of organizational solidarity scale

Sub-scales	Items
Social-emotional	1-3-6-8-10-13-14-16
Structural-instrumental	2-4-5-7-9-11-12-15-17-18

Findings

Investigating the validity and reliability of organizational solidarity scale

A) Item analysis and Cronbach's alpha

First to evaluate the validity of each of this scale dimensions, using item analysis method, the correlation among each item with each dimension of the scale was calculated and results are shown in Table 3 as the lowest and highest correlation coefficient. To calculate the reliability of the scale Cronbach's alpha method was used. The Cronbach's alpha coefficients, are approved and at the desired level considering the number of items in each of the dimensions.

Table 3: The validity and reliability of the summarized form of organizational solidarity scale

Sub-scales	Correlation coefficient spectrum	Significant level	Reliability
Social-emotional	0.65-0.75	0.0001	0.85
Instrumental	0.62-0.78	0.0001	0.89
Total score	0.59-0.75	0.0001	0.93

A) First confirmatory factor analysis

In the following, the factor model and the significant coefficients of the first order confirmation factor analysis are presented:

The contents of Figure 1 shows that in this scale, in the social-emotional dimension, the highest coefficient is related to the 13th item (Dynamic and Coordinated Human Relationships among the Members) (0.74) and the lowest coefficient is related to Item 3 (Common Identity in School) (0.58), in the structural- instrumental dimension, item 17 has the highest coefficient (general agreement about guidelines and rules) (0.87) and the lowest coefficient is related to item 7 (general belief about the need for coherence in school) (0.52). All materials of scale have a positive and significant load on their factor, at the level of $P < 0.0001$.

Dimensions of Solidarity

Items

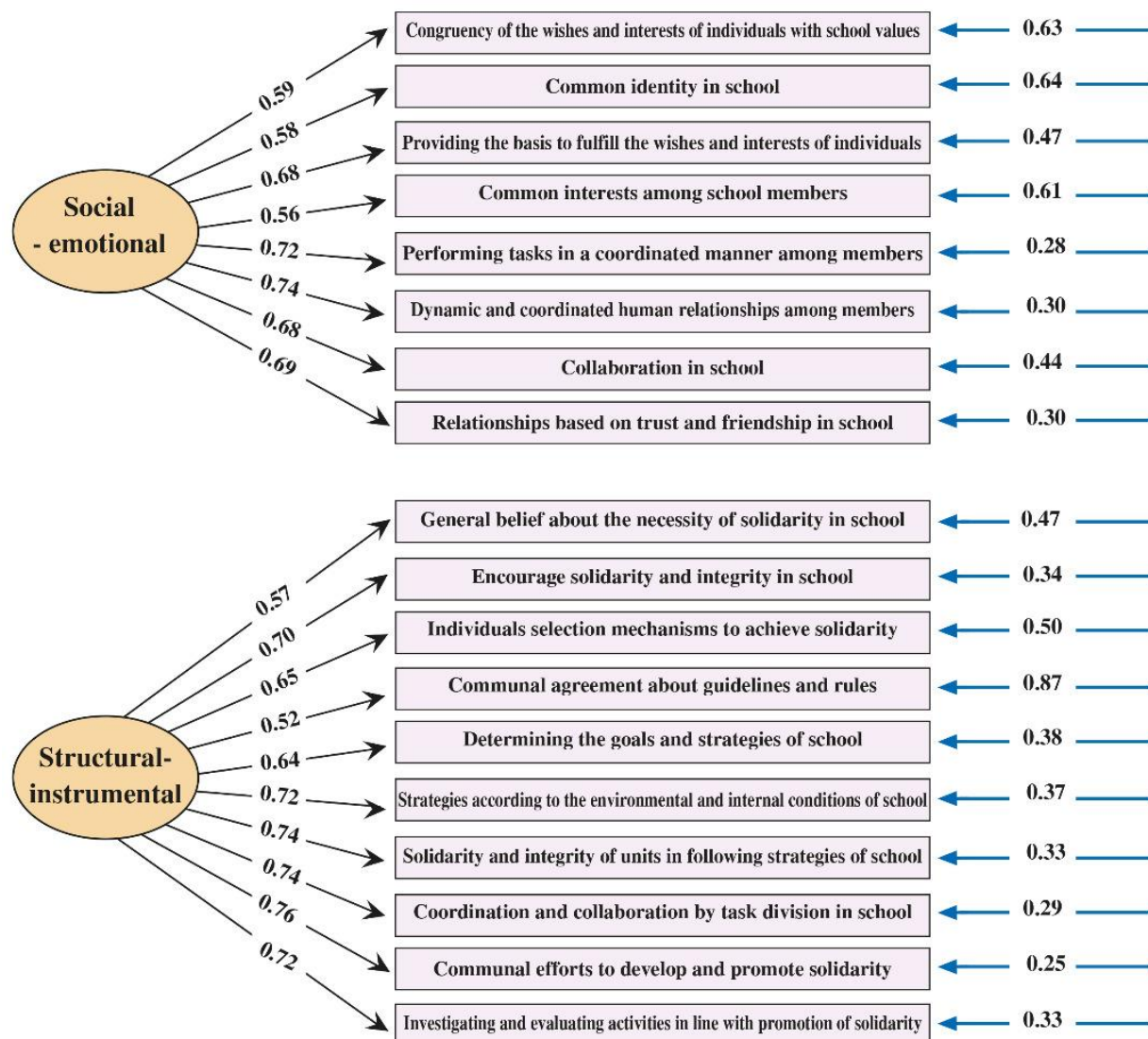


Figure 1: Coefficients obtained from the first confirmatory factor analysis

Table 4. Fit indices of organizational solidarity factor model

Index	χ^2	Df	χ^2/df	CFI	PCFI	RMSEA
Before modifying the model	467.6	128	3.65	0.90	0.76	0.08
After modifying the model	295.2	116	2.54	0.95	0.72	0.06

As shown in Table 4, the values of χ^2/df , CFI, PCFI, and RMSEA indices for organizational solidarity scale in this study are consistent with the indicators and criteria for appropriate values of fit indices.

B) Second confirmatory factor analysis

Second confirmatory factor analysis of organizational solidarity scale

Figure 2, shows the factor load of organizational solidarity scale dimensions. The results of this analysis showed that each of the dimensions has a high validity. Thus, the social-emotional dimension with a factor load of 0.99 and structural-instrumental dimension with a factor load of 0.95 explain the organizational solidarity scale.

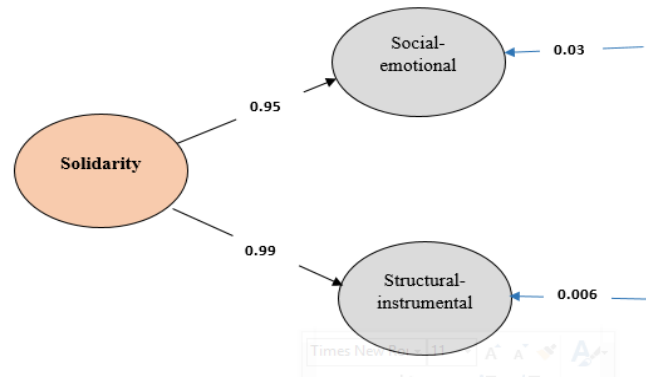


Figure 2: Coefficients obtained from second confirmatory factor analysis of organizational solidarity scale

Table 5- Fit indices of organizational solidarity factor model

Index	χ^2	Df	χ^2/df	CFI	PCFI	RMSEA
Before modifying the model	454	127	3.57	0.91	0.76	0.08
After modifying the model	331.2	118	2.80	0.94	0.72	0.07

As shown in Table 5, the values of χ^2/df , CFI, PCFI, and RMSEA indices for organizational solidarity scale in this study are consistent with the indicators and criteria for appropriate values of fit indices.

Discussion and Conclusion

Undoubtedly, being responsive and preserving or acquiring responsiveness in different contexts is a permanent challenge for organizations. Organizations need to be effective in order to be significantly responsive. This means that while having the potential and actual skill and dynamism appropriate to the level of complexity of the environment, in an interactive process with environment, they control its unfavorable effects on the organization and, at the same time, consciously influence it. In this regard, all organizations must first change themselves to create change and impact the environment, and by removing contradictory goals and objectives and creating common goals and perspectives, provides solidarity and coordination of the members and makes it dynamic. As a result, members think about fulfillment of organizational goals more willingly and enthusiastically and in fact they know that fulfillment of organizational goals and desires will lead to the fulfillment of their own goals. On the other hand, the existence of solidarity, creates interest and common attitudes, friendly interactions among organization members and necessary flexibility between working units; and individuals and unites conflicts are minimized and as a result effectiveness and organizational responsiveness increases.

Considering the importance of solidarity as the central core of organizational activities (Lee, 2004) and preserving the organization's existence (Foroughi Asl, 2002), sustainability of organizations of a society depends on the solidarity and integrity of its organizational constructive elements. In these organizations, affairs are not separating and conflicting with each other, but they are also in line and productive of each other. Therefore, organizations that seek to succeed should be able to develop solidarity mechanisms, thereby enhancing the organization's capabilities and efforts to provide effectiveness and accountability. Hence, providing basis for creating solidarity and its preservation and sustainability are considered as functions of effective management that due to its significant impacts on organizational procedures, need more attention from organizations managers and authorities. In this regard, it is necessary to have a codified, comprehensive and valid tool for continuous evaluation of solidarity to be available to organizations; thus, in this research we attempted to validate the summarized form of organizational solidarity scale presented by Torkzadeh, Taghizadeh & Moharrar (2012). Results of the conducted evaluations of the first and second confirmatory factor analysis indicated that the developed items in this scale clearly explains the dimensions of organizational solidarity. Also, results indicate the desirable validity and reliability of this scale, this scale is now available in the presented form in following and it can be used and exploited by managers, researchers, and all people in organizations to evaluate organizational solidarity.

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Appendix

Organizational solidarity scale

❖ Guide: Please consider your attendance at this school and mark the option that is closer to your view.¹

Row	<u>In our school</u>	Point of view				
		Completely disagree	Disagree	Not agree and not disagree	Agree	Completely agree
1	Demands and interests of individuals and the school values are congruent.					
2	There is a general belief about the importance and necessity of communal solidarity in the school.					
3	Manager, teachers and other school staff have a common identity.					
4	Our school encourage people for communal solidarity and integrity.					
5	The school has certain mechanisms for the selection and placement of individuals in order to achieve communal solidarity and integrity.					
6	The school provides the basis for the fulfillment of the desires and interests of individuals.					
7	Procedures, instructions and rules of the school are confirmed by all individuals.					
8	There are common interests among all members in our school.					
9	The school goals and strategies are determined and clarified for all individuals and working units.					
10	The manger, teachers and other school staff are trying to work in a coordinated manner.					
11	The school has determined and appropriate strategies fit to internal and external environment.					
12	Following and obeying school strategies lead to the connection, solidarity and integrity of units.					
13	There are coordinate and dynamic human relations among all members in our school.					
14	Collaboration is often seen in our school.					
15	There are a good coordination and cooperation among unites and individuals in our school as a result of work division.					
16	The relationships of school members are based on trust and friendship.					
17	In our school, the majority of people are working to develop and promote solidarity.					
18	All the performed efforts and activities are in line with the promotion of the level of solidarity in the school are reviewed and evaluated.					

¹. Using this scale is only allowed while mentioning the name of System Solidarity Scale and the name of authors (Torkzadeh & Najafi) and referencing to this article.