

## **Empirical Study on Interorganizational Coordination**

### **(Evidence Case: Organizations of Job and Employment in Iran)**

*Hassanali Aghajani<sup>1</sup>, Fereshteh Amin<sup>2</sup>, Mohsen Abasgholipour<sup>3\*</sup>*

*1. Associate Professor, Faculty of Economics & Administrative Sciences, University of Mazandaran, Iran*

*2. Assistant Professor Faculty of Management, University of Tehran, Iran*

*3. Student of Master, Business Management, University of Tehran, Iran*

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#### **Abstract**

Interorganizational coordination (IOC) is a critical part of planning, because planning mostly involves multiple organizational interactions. Investment and employment are considered as multi-dimensional and multi-sectional challenges that the management of them requires intersectional and interorganizational cooperation. The goal of this research is the investigation of the interorganizational coordination among the investment and employment organizations in Iran. Statistical samples are 491 people who are mostly from managers of the organizations of the employment and investment in Iran and experts in investment. Data-collecting instrument was related to a questionnaire consisting of some standard questions with the reliability level of 0.76. The collected data related to the variables were analyzed by a model of path analysis Regression and T-Student and Friedman tests. The research findings indicate that the six studied variables are affected by interorganizational coordination directly and indirectly. Therefore, mutual trust (1.22) had the highest direct effect, and other variables such as ease of mutual communication (0.37), goal-orientation (0.36), mutual interests, and group thinking (0.20) were considered important respectively. The variable compatible organizational cultures had no direct effect on the subject, while all of the six variables affected the interorganizational coordination directly. Finally, based on these results, some suggestions were given on how the managers and authorities can improve the interorganizational coordination among the investment and employment organizations in Iran.

#### **Keywords:**

Coordination, Employment, Interorganizational, Organization.

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\* Corresponding Author Tel: +98-9113231080 Email: m\_abasgholipour@yahoo.com

## Introduction

Shared action by two or more organizations in order to solve their shared problems is called coordination (Galbraith, 1977, P.18). Interorganizational coordination is the process in that two or more organizations design and perform the plans and policies to achieve a shared goal (Kilgor & Ellefson, 1982). Generally, interorganizational coordination emphasizes on the collaboration and assistance in compiling and organizing the plans in order to achieve shared objectives and goals of two or more organizations. With respect to the networks and interaction techniques among organizations, interorganizational coordination is a process whereby the organizations make decisions and share interests (Warren, 1969). Today, the problems are getting so complicated that organizations cannot make decisions and act in the society's problems individually. The limitations of sources, personnel, facilities and especially multi-dimensional characteristics of problems such as tourism, employment, social services, etc. make it necessary for the organizations to be collaborated and coordinated. Without sufficient budget and facilities, no individual organization can provide the societies with all their needs, because in this case, the costs of intraorganizational coordination will increase incredibly (Mulford and Klomlan, 1982). Thus, to solve some of the multi-dimensional problems such as employment, it is necessary to use interorganizational coordination. Emergence of networks is another reason for paying more attention to the new interorganization structures (Toole, 1997). There are many challenges in the society which solving and managing them requires collaboration of several organizations. Some of them are employment, tourism, health care and urban services. Because of the lack of the financial and informational resources, increasing environmental problems and multi-dimensional nature of the problems, a network consisting of different organizations is required to make the decisions (Coward *et al.*, 1994; Selin & Beason, 1991; Crandall *et al.*, 1990; Shortell *et al.*, 1996). Indeed a new insight and method is needed to manage the great and multi-dimensional challenges in societies.

According to the points mentioned above, the goal of this research is to investigate the interorganizational coordination among the investment and employment organizations in Iran with respect to the

six variables: mutual trust, goal orientation, collective thinking, mutual interests, consistent organizational cultures, and ease of communications.

### **Background and Hypotheses**

Lack of interorganizational coordination may have negative effects on the quality and results obtained from public service. Interorganizational collaboration and coordination suggest important innovations in managing and solving the challenges and multi-dimensional problems in societies. Coordination and structures of networks have an important effect on collaboration (Williams, 2005). Suitable decision-making mechanisms in organizations and ability in making liberal relations to other organizations are other important factors of achieving shared objectives (Whetten & leung, 1979). Interorganizational relation and coordination with respect to their formation may have various forms (Hall *et al.*, 1977). Successes and failures of interorganizational networks on national, regional and local scales depend on the complications in networks and technical considerations affecting the operation of organizations (Mutch, 1996). Organizational and environmental factors have important effects on the effectiveness of interorganizational collaboration and coordination (Schumacher, 2002, p.392). Formal and informal learning behaviours of the employees in organizations can affect the organizational learning (Janowicz-Pan Gaitana & Noorderhaven, 2008).

So far, various studies have been done on the interorganizational coordination in different multi-dimensions like tourism, social services, health services, urban services, environmental problems and transit (Coward *et al.*, 1994; Mulford & Klonglan, 1982; Bailey & Koney, 1996; Selin & Beason, 1991; Aghajani, 2002, p.101; Jamshidian & Mehdipoor, 2000, p.7). The explication of interorganizational relationship and coordination among the organizations of the healthcare affairs, that use just one criterion is not possible (Paulson *et al.*, 1980). Determinant factors results and structural orders are based on the three criteria that explicate interorganizational collaborations and coordination among non-governmental organizations in Pakistan (Gulzar & Henry, 2005). The

most important factors affecting the formation of interorganizational relations and coordination can be divided into three groups of organizational and environmental factors and also characteristics of board of directors in organization (Fried *et al.*, 2005). For creating coordination among organizations, five practical actions are required that includes: primary decisions, individual organizational decisions, common organizational decisions, common actions, and the appraisal of the effectiveness of creating interorganizational coordination (Mulford & Klomglan, 1982). The effectiveness of interorganizational coordination is based on three groups of positional, process and structural factors (Van de ven, 2001). The mutual collaboration between independent organizations increases their individual competition advantage (Cravens *et al.*, 1993). Four prerequisites including incentive, willingness, ability and coordination capacity have a significant positive relationship with the effectiveness of interorganizational coordination (Einbinder *et al.*, 2000). Organizations should pay attention to the interorganizational factors, such as competition and preparedness of shared organizations, to create an effective interorganizational system (Lin, 2006).

Absorption of only twenty percent of the potential income of transit in Iran is the lack of coordination among the transit organizations (Aghajani, 2002, p.101). Interorganizational coordination activities take place to manage multi-dimensional problems in the society in order to exploit various differences and capabilities among organizations (Caker, 2008). Communicative activities and information technology have a significant relationship with the effectiveness of a variation strategy and interorganizational coordination (Shyh-Rong, 2008). The characteristics of organizations, the type of relationships and the way of interaction among them have a positive effect on the costs of interorganizational coordination and relations (Agndala & Nillssonb, 2009). The evaluation of effectiveness in interorganizational relations and coordination should take place in levels such as society and networks of organizations (Babiak, 2009). The process of collaboration among several organizations that concern innovation may cause the development and improvement of innovation in interorganizational relations (Bossink, 2007). Environmental factors and perception of the members and

shared organizations of the benefits gained through collaboration have a key role in the success of an interorganizational collaboration and coordination (Yao *et al.*, 2007). In electronic government the interorganizational information systems with respect to the operational, organizational and governmental factors are very important for managing public issues and presenting better services (Schooley & Horan, 2007). Interorganizational and interpersonal networks have a positive effect on the capabilities and strategic conformability capacities of the companies (Ma *et al.*, 2009). In the economic environment of the countries, the basis of interorganizational collaboration can be due to the economic interchanges, the responsibilities and liabilities of organizations (Weber & Gobel, 2010). The organizations would be more successful, effective and sustainable if they had more collaboration instead of threatening each other (Jiong, 2009). The size, structure, variety and trust among the members are effective in the success of the interorganizational relationships (Van de ven & Ferry, 1980; Kogut & Singh, 1988; Alter & Hage, 1993; Alexander, 1995). The factors that emphasize on the interorganizational relationship and coordination consist of: volunteer exchange among organizations (Mulford & Rogerd , 1982; Pfeiffer & Salamick, 1978; Benson, 1975), informal coordination (Hall *et al.*, 1977), mutual communications (Van de ven & Walker, 1984) and availability of foreign sources (Proven *et al.*, 1980), intermember coexistence (Alexander, 1995), dependence in intermember relationships (Selznick, 1949), open and flexible management systems, and the importance of technologies conforming with change in sheeting (Thompson, 1967), organizational self-praising (Knoke, 1988). Based on the above literature review, below hypothesis will be investigated and tested in this research.

### **Hypothesis**

There is interorganizational coordination among the investment and employment organizations in Iran with respect to the six variables including mutual trust, goal orientation, collective thinking, mutual interests, consistent organizational cultures, and ease of communications.

## Methodology

### Sample

Statistical population consists all managers of the employment and investment organizations in Iran. The total quantity of employees in statistical population was 26000 of whom 491 were selected by both stratified sampling and random methods. In the sample, 77 percent were over 40 years old, 96 percent had more than 15 years of working experience, and 97 percent had higher educations (bachelor degree and higher).

### Data and Scale

The tool used for data gathering was questionnaire. A standard questionnaire (Cunningham and Lischeron, 1991; Ho and Koh, 1992; Morris and Trotter, 1990; Koh, 1996; Kuratko, 1998; Gürol & Atsan, 2006; Rasmussen, 2006; Papayannakisa *et al.*, 2008; Postigo, 2002; Kaushik *et al.*, 2006; Kiggundo, 2002; Sohn *et al.*, 2007; Wang & Lin, 2008; Yapp & Fairman, 2006; Sun *et al.*, 2005) was given to the participants for collecting data. The questionnaire included 18 questions with interval scales of 10 choices from very low to very high. In using factor analysis tests with (KMO = 0.60) and 81 percent explanation of variance, the questions were reduced to six variables including mutual trust, goal orientation, collective thinking, mutual interests, consistent organizational cultures, and ease of communications among Iranian organizations of employment. As achieving objective criteria for functions in organizational units is practically impossible (Matsuno *et al.*, 2002), therefore effectiveness of interorganizational coordination can be measured through computing and measuring the functional gap between the existing and desired status with respect to the perception of experts in an interorganizational collaboration (Schumaker, 2002, p.393), That is because measurement scales for subjective function have significant relationship with measurement scales for objective function (Jaworski & Kohli, 1993; Li & calantone, 1998; Narver & Slater, 1990). The designed questionnaire was given to the members of the sample in all provinces, in order to confirm or reject the hypothesis Friedman and T-student tests were used.

### **Validity**

In order to validate the questionnaire of research, the procedure of literature review and then extracting the components of measuring variants, the specialist ideas and a primary sample have been used. So the designed questionnaire has been offered to ten professors and experts in the form of a pre-test (Hult & Ferrel, 1997; Bazargan *et al.*, 1998, pp.166-171; Sarookhani, 2003, p.139). Then after taking reformed opinions and modifying some cases of them, again it has been offered to 31 persons of the members of population as a primary sample, and also according to this group's reforming opinions, it was driven certain that the questions are related to variables.

### **Reliability**

There are different ways to determine the reliability of measuring instrument, that one of them is the measurement of its internal harmony (Conca *et al.*, 2004). The internal harmony of measuring tool can be measured by the coefficient of Cronbach Alpha. Cronbach's Alpha is used to measure the reliability of questionnaires (Cronbach, 1951). This is a way that is applied in most researches (Peterson, 1994). Although the least acceptable quantity for this coefficient must be 0.7 but 0.6 and even 0.55 are acceptable (Van de ven and Ferry, 1997) (Nunnally, 1978). In this research, the reliability of measuring tool was 0.76. Collected data were analyzed by one-sample T-test and Friedman test and Pearson correlation test by SPSS and LISREL software. By the way, Friedman's test has shown that the subjects have answered the questions without any prejudice and they have properly perceived the difference among the questions.

### **Findings**

#### **Path Diagram Model**

In this section, a regression model of path diagram (structural equations model) of the six variables explicating interorganizational coordination is presented by using the Lisrel software. Note that from the various indices determining suitability of a model of structural equations, indices RMSEA, GFI, and NFI are among the best known and can determine the suitability of a model of structural equations sufficiently.  $RMSEA < 0.10$  indicates this model has an acceptable

proportion to suitability with the real world (Joreskog & Sorbom, 1989). In this study RMSEA = 0.043, GFI = 0.95, AGFI = 0.82, NFI = 0.94 and NNFI = 0.83 were obtained. Therefore the study model has the regressed suitability and is totally confirmed, because RMSEA was <10% and NFI and GFI were >90% and the six variables can explicate 82% of the unclear main variable study, that is, interorganizational coordination among the organizations of employment directly or indirectly.

The structural equation model of relations among the six clear variables and the unclear variable of interorganizational coordination among the employment and investment organizations are shown in Figure 1. Variables in the structural equations have two types of direct and indirect explicating relations. As seen in T-Value diagram, in the section of direct relations, the fifth variable is not confirmed while the rest of the variables are confirmed both in direct and indirect sections. In the other two diagrams, standard regression coefficients and direct/indirect estimation (non-standard) of the structural equation model are presented and the detailed explanations of clear and unclear variables, direct standard and non-standard coefficients and T-value of the structural equation are given in the Table 1.

As seen in the below table and diagram, the five direct relations and all of the indirect relations between clear variables and interorganizational coordination among the investment and employment organizations are confirmed. Because according to the output of Lisrel software only the relation of the fifth variable in T-value coefficient has been read. Thus, in extracting a structural equation, it is required that all direct and indirect relations, except for direct relation of the fifth variable to be entered into the general structural equation of interactive relations among the variables (direct and indirect impacts) is as follows: Structural equation model= direct effects + indirect effects.

As noted in Figure 1, structural equation model explicating interorganizational coordination among the investment and employment organization based on standard coefficients (only direct relations) is as follows:

$$F = (1.22 F1 + 0.36 F2 + 0.20 F3 + 0.32 F4 + 0.37 F6)$$



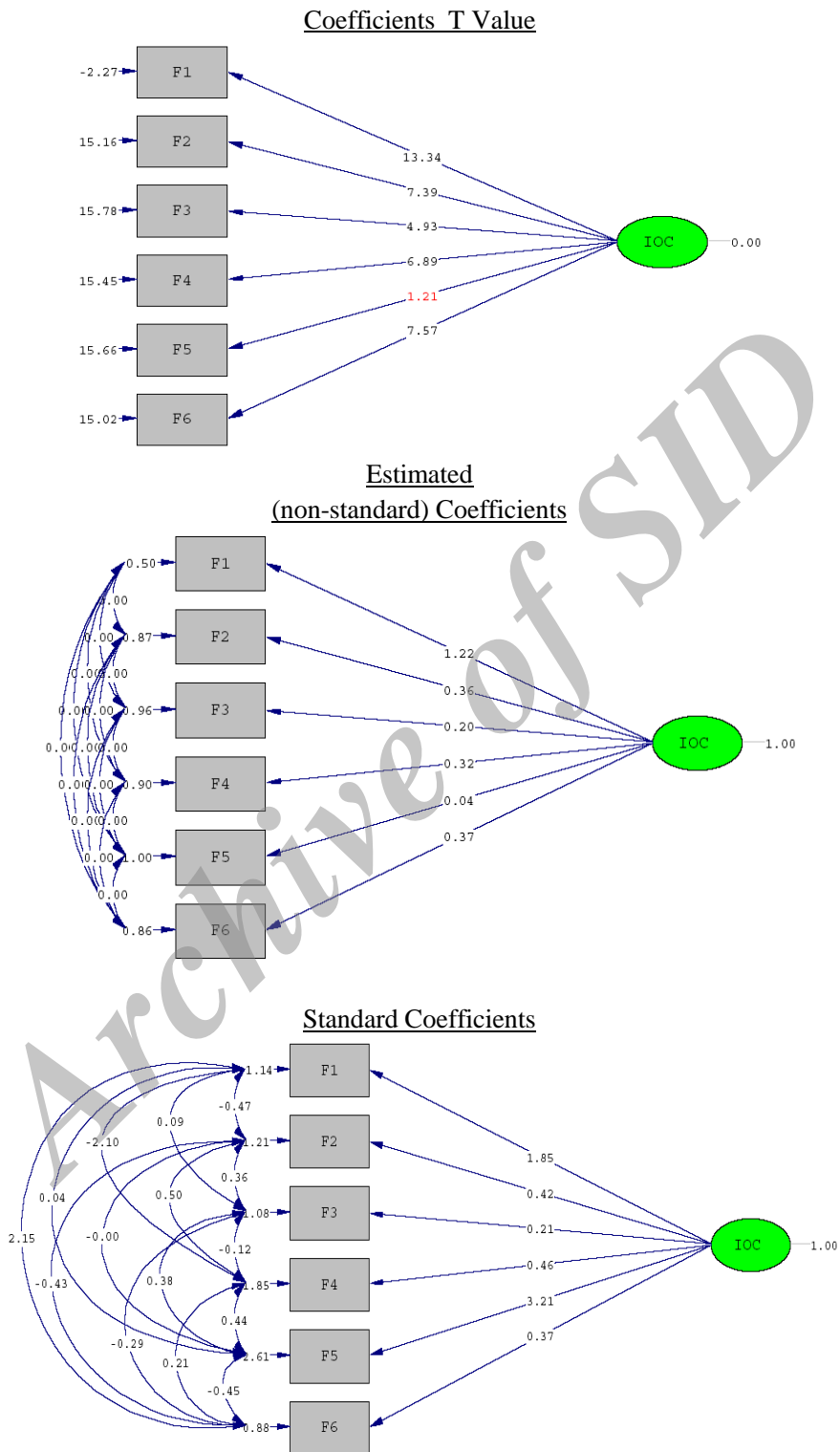


Fig. 1. Lisrel Output

Table 1. Tests Results

Unclear Variables	Clear Variables	Abbreviations	T Value	Standard Coefficients	non-Standard Coefficients	Confirmation of Model	Confirmation of Relations		Direct Influence Ranking
							Direct	Indirect	
Inter organizational coordination on the organization of employment-IOC	Mutual trust	F <sub>1</sub>	13.34	1.22	1.85	RMSA= 0.043 GFI = 0.95 AGFI = 0.82 NFI = 0.94 NNFI = 0.83 model is confirmed	Confirmation	Confirmation	First
	Goal orientation	F <sub>2</sub>	7.39	0.36	0.42		Confirmation	Confirmation	Third
	Collective thinking	F <sub>3</sub>	4.93	0.20	0.21		Confirmation	Confirmation	Fifth
	Mutual interests	F <sub>4</sub>	6.89	0.32	0.46		Confirmation	Confirmation	Fourth
	consistent organizational cultures	F <sub>5</sub>	1.21	0.04	3.21		Rejection	Confirmation	=
	Ease of mutual communication	F <sub>6</sub>	7.57	0.37	0.37		Confirmation	Confirmation	Second

Moreover, the structural equation model explicating interorganizational coordination among the investment and employment organizations, based on non-standard coefficients is as follows:

$$F = (1.85 F_1 + 0.42 F_2 + 0.21 F_3 + 0.46 F_4 + 0.37 F_6)$$

$$F_1 = (-0.47 F_1 \times 0.42 F_2) + (0.09 F_1 \times 0.21 F_3) + (-2.10 F_1 \times 0.46 F_4) + (2.15 F_1 \times 0.37 F_6)$$

$$F_2 = (-0.47 F_2 \times 1.85 F_1) + (0.36 F_2 \times 0.21 F_3) + (0.50 F_2 \times 0.46 F_4) + (-0.43 F_2 \times 0.37 F_6)$$

$$F3 = (0.09 F3 \times 1.85 F1) + (0.36 F3 \times 0.42 F2) + (-0.12 F3 \times 0.46 F4) + (-0.29 F3 \times 0.31 F6)$$

$$F4 = (-2.10 F4 \times 1.85 F1) + (0.50 F4 \times 0.42 F2) + (-0.12 F4 \times 0.21 F3) + (0.21 F4 \times 0.37 F6)$$

$$F6 = (2.15 F6 \times 1.85 F1) + (-0.43 F6 \times 0.42 F2) + (-0.29 F6 \times 0.21 F3) + (0.21 F6 \times 0.46 F4)$$

F= (direct effect of six variables)

F1= (indirect effect of mutual trust)

F2= (indirect effects of goal orientation)

F3= (indirect effects of collective thinking)

F4= (indirect effects of mutual interests)

F6= (indirect effects of ease of mutual communications)

Based on the above equations, any change and improvement in interorganizational coordination among the organizations of investment and employment can be investigated and explicated with respect to those six variables mentioned above and the above mathematical relations.

### Hypotheses Test

Noting the orientation of the study hypotheses, in the following T-student test, based on the measuring scale interval (1-10), the least mean acceptable for confirming the hypotheses is considered as 70% of the scale, that is T-value. However, values 0.60 and 0.55 are also acceptable (Van de ven & Ferry, 1979, p.38; Nunnally, 1978, p.62). Table 2 shows tests results for the six hypotheses.

Table 2. Tests Results

		One sample T-test						Test Result
		Index number =7 Hypothesis acceptance level: T, more than-1.64						
		T	df	Sig (2-tailed)	Mean of differences	Confidence interval % 95		
upper limit	lower limit							
Hypotheses	Mutual trust	-44.14	490	0.000	-3.01	-2.88	-3.14	Rejected
	Goal orientation	-54.25	490	0.000	-2.89	-2.78	-2.99	Rejected
	Collective thinking	-27.56	490	0.000	-1.32	-1.23	-1.41	Rejected
	Mutual interests	-52.36	490	0.000	-3.40	-3.27	-3.52	Rejected
	Consistent organizational cultures	-37.42	490	0.000	-2.73	-2.59	-2.88	Rejected
	Ease of mutual communication	-60.40	490	0.000	-2.76	-2.67	-2.85	Rejected

It is seen that, based on each of the six variables determining interorganizational coordination; there is no coordination among the investment and employment organizations. In each of the hypothesis, it is required to be higher than -1.64 Ts for the confirmation of interorganizational coordination existence. However, in 'T' column, it is seen that values for T are much less than -1.64. While, despite the unsuitable situation of all variables, the group-thinking variable is rather in a better situation than the other variables

### Correlation and statistics

Table 3 shows the correlation (level 0.01) and the descriptive statistics of the six variables.

The down correlation coefficients indicate that the variables such as "mutual trust" and "goal-orientation" have no significant relations with the consistent organizational cultures, and there is no significant relation between the variables group thinking and mutual interests, while the other variables are significant. The last three columns of the table 3 show that in spite of rather equal distribution of five these variables compared with each other, the variable group thinking has better condition than the other variables.

Table 3. Tests Results

	F <sub>1</sub>	F <sub>2</sub>	F <sub>3</sub>	F <sub>4</sub>	F <sub>5</sub>	F <sub>6</sub>	Mean	Standard deviation	Coefficient of variation
F <sub>1</sub> =Mutual trust Sig	1 0.000	0.45 0.000	0.23 0.000	0.45 0.000	0.05 0.27	0.40 0.000	3.99	1.51	0.38
F <sub>2</sub> = Goal orientation Sig		1 0.000	0.35 0.000	0.36 0.000	0.02 0.760	-0.14 0.002	4.11	1.18	0.44
F <sub>3</sub> = Collective thinking Sig			1 0.000	-0.02 0.775	0.24 0.000	-0.19 0.000	5.68	1.1	0.19
F <sub>4</sub> = Mutual interests Sig				1 0.000	0.21 0.000	0.23 0.000	3.61	1.44	0.40
F <sub>5</sub> = Consistent organizational cultures Sig					1 0.000	-0.27 0.000	4.27	1.62	0.38
F <sub>6</sub> = Ease of mutual communication Sig						1 0.000	4.24	1.01	0.24

## Discussion

Limitations related to time and place in humanism and social sciences have caused the research findings to be significantly different in spite of the similarities among the variables and utilized methods. Thus, it is necessary to localize the results with respect to time and place conditions so that the applications of results can be authentic. As it is mentioned in the background, interorganizational coordination among organizations depends on several different factors such as structural orders (Gulzar & Henry, 2005), collaboration capacity (Einbinder *et al.*, 2000), environmental limitations (Fried *et al.*, 2005), organizational factors (Schumaker, 2002), information (Shyh-Rong, 2008), perception (Stern *et al.*, 1975), formal and informal learning (Janowicz-Panjaitana & Noorderhaven, 2008), interaction among organizations (Agndala & Nilssonb, 2009), relations among organization managers (Kauremaa *et al.*, 2009), conformability capacity (Ma *et al.*, 2009), collaboration (Jiang, 2009), interpersonal trust (Alexander, 1995), and volunteer exchange of sources (Mulford & Rogers, 1982). Current study has shown that the above factors have significant effect on interorganizational coordination among the investment and employment organizations. It is distinguished that there is coordination among the investment and employment organizations in Iran.

## Conclusions

As noted before, there are many problems and challenges in the society that solving them requires collaboration of organizations. These include employment, tourism, health care services, civil services etc. Because in all of the problems such as lack of financial and information sources, increasing environmental complications, and multi-dimensional problems a network of various organizations is required to make decisions. In general, according to the literature review, there is an interorganizational coordination among organizations regarding their time and place. Results of this research reveal that there is a coordination among the organizations related to the investment and employment in Iran with respect to the six independent variables consisting of mutual trust, goal orientation,

collective thinking, mutual interests, consistent organizational cultures, and ease of communications. Mutual trust had the highest direct effect on interorganizational coordination. The variables such as ease of mutual communication, goal-orientation, mutual interests, and collective thinking were considered important respectively, and the organizational cultures had no direct effect. Meanwhile, all of these six variables affected interorganizational coordination indirectly. Based on the findings, it is concluded that in order to improve the interorganizational coordination among the organizations related to the investment and employment in Iran, a necessary actions can be taken with regard to their explicating variables in real world conditions. In this respect, the variable consistent organizational cultures require more attention while other variables need attention afterwards. According to thirteen percent rate of unemployment in Iran (Statistical Centre of Iran, 2012), more attention, collaboration and support of the governmental and private organizations of the employment is required. In order to improve the interorganizational collaborations among the governmental organizations, managing the challenges, and use the opportunities, it would be better to design interorganizational information systems.

Considering the above article, the following issues articles are suggested for future studies:

- The explication of an interorganizational coordination among the organizations relate to every other multi-dimensional problem or challenge like tourism, transit, health care services etc, in various times and places.
- The planning, development and explication of models and patterns in order to improve the components of interorganizational coordination.
- The recognition of existing multi-dimensional issues and problems in a society that require interorganizational collaborations and coordination among various, independent organizations.

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