Research Journal of Management Reviews. Vol., 4 (1), 1-11, 2018
Available online at http://www.rjmrjournal.com
ISSN 2149-9168 ©2018

Study of Organizational Agility Capabilities (Case Study of Zahedan Municipality)

Somaye Ranjbar Shahraki

Master of Public Administration, Human Resources Orientation, Islamic Azad University, Zahedan Branch, Iran

*Corresponding Author Email: srshahraki@yahoo.com

Abstract: The purpose of this present study was to investigate the structural capabilities of the organizational agility in Zahedan Municipality. This research is applied in terms of the purpose and is also a descriptive survey type in terms of the method. The statistical population of the study consisted of all 367 employees of Zahedan Municipality. Using Krejcie and Morgan's Table, 188 employees were selected by simple random sampling method and they were studied. The instrument for data collection was a questionnaire for the structural agility of the organizational agility with 29 questions in 7 components. The content validity ratio (CVR) of the questionnaire was evaluated by experts and evaluated as 0.81 and content validity index (CVI = 0.78). Also, the Cronbach's alpha value in the reliability analysis of the questionnaire of the organizational structure agility capabilities is 0.972, indicating that the questionnaire has a good reliability. To analyze the data, data analysis was performed using inferential statistics such as single-group T test, I-NEDPENDEN SAMPLEST TEST ANALYSIS, ANALYSIS OF VARIANCE ANOVA, Pearson correlation, Friedman test and regression analysis were performed by SPSS and LISREL software. The results of the study after performing the confirmatory factor analysis in the first level (by 29 indicators), the seven components of the organizational structure, coherence and coordination, team building and simultaneous engineering, continuous improvement, the formation of knowledge-based organization, the ability to modernize, the formation of virtual organization as the variable capabilities of the organizational agility were identified and introduced and after performing the factor analysis, the second level of the results was that the correlation of the structures with the agility of the organization is good and the seven components of the formation of knowledge-based organization, team building and simultaneous engineering, continuous improvement, formation of the organization virtualization, renovation, coherence, and organizational structure had a priority 1 to 7, respectively.

Keywords: Structural Capabilities, Agility, Municipality, Zahedan.

Introduction

At the beginning of the 21st century, the achievement of success and survival of the organization becomes more difficult, and this is due to the emergence of a new era of business, which is a major change. This situation has led to a major overview of business priorities, strategic vision, survival, and methods. In today's worlds, more emphasis is on adaptability to changing environments, and a proactive approach to understanding customer and market needs, new collaborative approaches such as virtual organizations and organizational agility in the concept of

a step forward and creating new meanings for better performance and success. It is also a strategic approach to the new environment as the complex world today is a continuum of age; the rapid growth and evolution of technical and technological knowledge and the expansion of the consumption market has abandoned the use of past experiences and solutions from humans. Other past experiences and solutions do not work for the current and future issues of organizations. One has to think differently and look for new ways to deliver services in the same quality as the customer wants. Finding innovative ways to respond to today's turbulent environment and the achievement of the success of the organizations requires the use of new approaches and a new approach to the organization. In the last decade, the organizations have been successful in identifying their needs and delivering fast and inexpensive services have depended on their needs. In the meantime, today, "agility" as the dominant business paradigm in the third millennium and as the best option for the survival of the organizations has become a concern for public service and manufacturing organizations. Following this attention, efforts have been made to achieve a desirable and proportional level of the agility in these organizations. In the current economy, which the achievement of profitability requires to pay attention to changes in customer needs and, in other words, to implement the agility approach in the organization, municipalities as the organizations, which play an important role in the economy and the prosperity of a country, must take effective and useful steps to examine the needs of customers, environmental changes. In the meantime, what guarantees the survival and continuity of both sectors is to provide services in a desirable, secure, fast, affordable, and proportionate manner so that they can result in their satisfaction and loyalty by meeting the needs and expectation and demands of customers, satisfaction and loyalty they cause. This will not be possible unless the municipalities in this competitive competition create the agility and agility culture in the structure of the organization and among their employees.

Today, the corporate environment is waiting for changes, opportunities and challenges that can be expected from the organizations by their ability to deal with them. On the one hand, having a strategic look at the changes and opportunities brought about by the changes, and, on the other hand, improving the organization capabilities and infrastructure can be a good mechanism for the long-term and sustainable success of the organization in a competitive market that needs to be developed and improved flexibly as well as the organization accountability (St. John et al., 2001). Today, many organizations and companies are faced with increasingly uncertain competition that has intensified through technological innovations, changing market environments, and changing customer needs. This critical situation has led to major reforms in the strategic vision of the organization, business priorities, and the revision of traditional models and even relatively contemporary models. In other words, previous approaches and solutions have their own capability to face organizational and environmental challenges; or it's better to replace new approaches and perspectives. For this reason, most scholars, the cause of the changes in the business world are the increased availability of technology, the intense competition in technological development, the globalization of markets and competition of business, rapid growth of technology access, change in terms of salaries and wages and occupational skills, environmental responsibility, resource constraints and, above all, the growing expectations of customers and they believe that in such an environment, the organizations cannot be traced and controlled in a traditional way in the past, but to provide an effective and useful response. These changes and gaining the competitive advantage of their opportunities are to achieve the organizational agility as a new paradigm for the engineering of firms (Shahaei & Sobhaninejad, 2006). For the agility, the organization must be considered as stimulus and capability. It is assumed that the stimuli are the main factor requiring the agility and capabilities such as employees, technology, communication, organizational structure etc., along with the capabilities help face with change, chaos and uncertainty. It seems that the employees in Zahedan municipality are more concerned about changes, uncertainties and predictions in their business environment, and so on. The issues that may arise from the volatility and market instability (due to the small part of the market, the plurality of presentation of new products, as well as a decline in product life cycle), intense competition (due to the rapidly changing market, rising cost pressures, increasing competitiveness, and the short-term development of new products), changes in customer needs (due to custom demand, increased quality expectations and faster delivery times), the pace of change of technological advances (introduced by the introduction of new and efficient manufacturing facilities, the integration of hardware and software systems) and social changes (which are emerging for environmental protection, labor market expectations and legal and regulatory pressures). At the same time, considering the interest and the studies conducted, we are looking to explore the structural agility of agility in Zahedan municipality as one of the service, technical and economic institutions of the city and state in a region of our vast country (which, besides the two countries of Pakistan and Afghanistan, they enjoyed a lot of linguistic, religious and ethnic diversity such that deprivation of other border provinces has doubled), and by examining the magnitude of this impact, scientific and practical proposals to the managers of the organization provide a reflection on the decision making, proper setting up to enhance the attitude and awareness of the staff of the subset is an organizational agility as one of the most obvious and obvious indicators of the effectiveness of the organization for the desirable service of the inhabitants of

this region in order to promote the culture of productivity. In fact, in this research, we are looking to identify that what are the factors that make structural changes in Zahedan municipality?

Materials and Methods

In terms of purpose, nature and method, the present research is based on the applied, descriptive and survey type. The statistical population in this research is all 367 employees working in Zahedan municipality, which they are busy doing the job by sex, education level, marital status, service record and different ages in the queue and office areas. The total sample of 188 employees was selected through random sampling as the sample size. In this research, the organizational agility questionnaire has been utilized. The questionnaire has 29 questions and has 7 dimensions (organizational structure, coherence and coordination, team building and simultaneous engineering, continuous improvement, knowledge-based organization formation, the ability to modernize and formation of the virtual organization), which for each of the dimensions is 5, 3, 4, 4, 5, 4, and 4 questions respectively, and the question is based on the Likert spectrum (very low, low, moderate, high, very high) and is designed using existing resources. It has a value of 1 to 6, respectively. There are no reverse questions in the questionnaire. The structural agility questionnaire of the organizational agility in terms of using experts' experiences and using the method of credit assessment by collective judgment was given to five management thinkers in Sistan and Baluchestan National University and Islamic Azad University of Zahedan. The content validity ratio (CVR) was 0.81 and the content validity index (CVI = 0.78), and was confirmed in terms of thematic relationship.

Results

Data were analyzed using SPSS statistical software. First, we examine the demographic variables such as sex, age, marital status, grade and service years as tables and Figures.

1. What is the status of dimensions of structural capabilities of organizational agility of Zahedan Municipality?

1-1 What is the organizational structure of Zahedan municipality?

Table 1. Frequency Distribution and Frequency Percentage of Organizational Structure Components.

Likert Spectrum	Frequency	Frequency Percentage
Very low	0	0
Low	12	6.4
Moderate	72	38.3
high	71	37.8
Very high	33	17.6
Total	188	100

Of the 188 subjects, 0 (0%) are very low, 12 (6.4%) low, 72 (38.3%) partially and 71 (37.8%) high and 33 (17.6%) very high. The lowest frequency was related to the very low (0%) and the most frequent option was the average option (8.54%). The level of organizational structure in the Municipality of Zahedan has been moderate.

2-1 What is the degree of coherence and coordination in Zahedan Municipality?

Table 2. Frequency Distribution and Frequency Percentage of Coherence and Coordination Component.

Likert Spectrum	Frequency	Frequency Percentage
Very low	0	0
Low	20	10.6
Moderate	54	28.7
high	75	39.9
Very high	39	20.7
Total	188	100

Of the 188 subjects, 0 (0%) are very low, 12 (6.4%) low, 72 (38.3%) partially and 71 (37.78%) high and 33 (17.6%) very high. The lowest frequency was related to the very low (0%) and the most frequent option was the average option (8.54%). The level of coherence and coordination in Zahedan Municipality has been high.

3-1 What is the role of team building and simultaneous engineering in Zahedan municipality?

Table 3. Frequency Distribution and Frequency Percentage of Components of Team Building and Simultaneous Engineering.

Likert Spectrum	Frequency	Frequency Percentage
Very low	0	0
Low	12	6.4
Moderate	56	29.8
high	113	60.1
Very high	7	3.7
Total	188	100

Of the 188 subjects surveyed, 0 (0%) are very low, 12 (6.4%) low, 56 (29.8%) moderate and 113 (60.1%) high and 7 (3.7%) very high. The lowest frequency was related to the very low (0%) and the highest frequency (60.1%). The amount of teambuilding and simultaneous engineering in Zahedan municipality has been high.

4-1 What is the rate of continuous improvement in Zahedan municipality?

Table 4. Frequency Distribution and Frequency Percentage of Continuous Improvement.

Likert Spectrum	Frequency	Frequency Percentage
Very low	3	1.6
Low	16	8.5
Moderate	64	34.0
high	82	43.6
Very high	23	12.2
Total	188	100

Of the 188 subjects, 3 (1.6%) are very low, 16 (8.5%) low, 64 (34%) moderate and 82 (43.6%) high and 23 (12.2%) very high. The lowest frequency was related to the very low (1.6%) and the highest frequency (43.6%). There has been a lot of improvement in Zahedan municipality.

5-1 What is the rate of formation of knowledge-based organization in Zahedan Municipality?

Table 5. Frequency distribution and Frequency Percentage of knowledge organization formation.

Likert Spectrum	Frequency	Frequency Percentage
Very low	3	1.6
Low	9	4.8
Moderate	49	26.1
high	79	42.0
Very high	48	25.5
Total	188	100

Of the 188 cases studied, 3 (1.6%) are very low, 9 (4.8%) low, 49 (26.1%) moderate and 79 (42%) high and 48 (25.5%) very much. The lowest frequency was related to very low (1.6%) and the highest frequency (42%). The formation of a knowledge-based organization in Zahedan Municipality has been high.

6-1 What is the amount of modernization in Zahedan Municipality?

Table 6. Frequency Distribution and Frequency Percentage of Refreshment Capability.

Likert Spectrum	Frequency	Frequency Percentage
Very low	3	1.6
Low	10	5.3
Moderate	30	16.0
high	113	60.1
Very high	32	17.0
Total	188	100

Of the 188 cases studied, 3 (1.6%) are very low, 9 (4.8%) low, 49 (26.1%) moderate and 79 (42%) high and 48 (25.5%) very much. The lowest frequency was related to very low (1.6%) and the highest frequency (42%). The amount of modernization has been high in Zahedan Municipality.

7-1 What is the amount of virtual organization in Zahedan Municipality?

Table 7. Frequency Distribution and Frequency Percentage of Virtual Organization Formation.

Likert Spectrum	Frequency	Frequency Percentage
Very low	3	1.6
Low	21	11.2
Moderate	58	30.9
high	74	39.4
Very high	32	17
Total	188	100

Of the 188 subjects, 3 (1.6%) are very low, 21 (11.2%) low, 58 (30.9%) moderate and 74 (39.4%) high and 32 (17%) very high. The lowest frequency was related to the very low (1.6%) and the highest frequency (39.4%). The amount of virtual organization in Zahedan Municipality has been high.

The main research question

What are the structural factors enabling the agility in Zahedan Municipality?

Structural equation modeling is a cohesive statistical method that analyzes the relationships between observed variables and hidden variables, and is somewhat similar to multiple regressions that uses this kind of modeling as a powerful method for evaluating the interaction between variables, nonlinear relationships between them. The relationships between independent variables and the measurement error are taken into account.

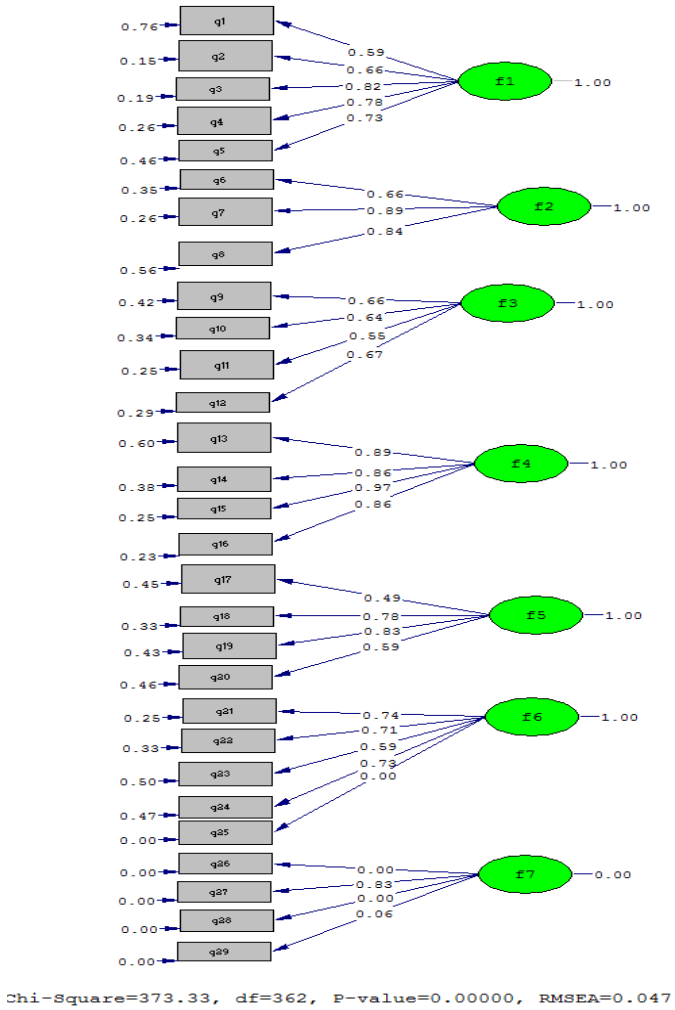

Figure 1. Second-order confirmation factor analysis of the second time of structural agility organizational agility in meaningful state of parameters.

Table 8. Fitted indicators to the model by using structural equations in Laserl.

Fit indices	Index name	Abbreviation	Modified model
Absolute fit indices	Chi 2 covered index	χ^2/df	1.06
	Goodness fit index	GFI	0.91
	Modified goodness fit index	AGFI	0.90
Adaptive fit indices	Normalized fit index	NNFI	0.95
	Normal fit index	NFI	0.91
	Comparative fit index	CFI	0.90
	Incremental fit index	IFI	0.93
Reduced fit index	Normal fit index reduced	PNFI	0.90
	Mean root of squares of estimated error	RMSEA	0.047
	Chi 2 normalized to degree of freedom	CMIN/df	4.2

The confirmatory factor analysis determines whether the data is consistent with a certain factor structure or not. This analysis has been carried out in two stages in two standard and significant parameters of the parameters. The first-order confirmation factor analysis shows whether the final design we have chosen for introducing machines really represents it or not. This concept can also be expressed in terms of whether the measurements of each structure really measure that structure. Therefore, from the first-order confirmatory factor analysis, the researcher finds out whether the questions of the questionnaire measure the mechanisms of the research model or not. This, in fact, is the

same construct validity as we mentioned in the narrative section of the questionnaire. The second-order confirmatory factor analysis shows the correlation of the mechanisms with the main research variable. That is, whether the mechanisms really represent the main variable of the research or not. In examining each of the models, the fundamental question is whether this model is suitable for other criteria for fitting the model to χ. To answer this question, three indicators should be checked. This is a suitable model that has the following optimal modes:

- The value of $\chi 2$ / df should be less than 3.
- The AGFI and GFI tests must be more than 90%.
- The RMSEA test should be less than 0.08.

Based on the conceptual model, this study has 29 variables that measure seven components (organizational structure, coherence, coordination, team building and simultaneous engineering, continuous improvement, knowledge-based organization, ability to modernize and formulate virtual organization). For the use of this test, Lisrel has been used in the sense that after examining theories of the variables that could be useful for Laser modeling, seven components related to the hidden variable of structural agility of organizational agility were identified that according to Table 4 13. The Goodness Fit Index (GFI) is 0.91 and the Adjusted Goodness Fit Index (A GFI) is 0.90, both of which are close to one and the model has a goodness fit. Also, other fit indices, as in Table 4-13, such as the NNFI, are 0.95 and Normal Fit Index (NFI) is 0.91 and the Comparative Fit Index (CFI) is 0.90 and the Increased Fit Index (IFI) is 93.03 which is more than 0.9 and represents a goodness fit of the model. The RMSEA index is the root of the mean squared estimate. The models that have a RMSEA or root mean square of RMSEA of less than 0.1 fit well. For models that have a good FU performance, they are less than 0.05. The value of the RMSEA index is the root mean square of the estimate is 0.047, which shows the goodness fit of the model. As a result, the first-order factor analysis is confirmed.

Sub-Question

How is the prioritization of the impact of each dimension of structural capabilities on the organizational agility in Zahedan Municipality?

Second-order confirmatory factor analysis of research model

The following graph shows the second-order confirmation factor analysis of the structural capabilities of organizational agility in the standard estimation. The estimated results (the underside of the figure) $\chi 2$ / df are indicative of the suitability of the fit model. According to the Laser output, the value is 1.99, which is less than 3 and is a decent amount. The low level of this indicator indicates a slight difference between the conceptual model of the research and the observed data of the research.

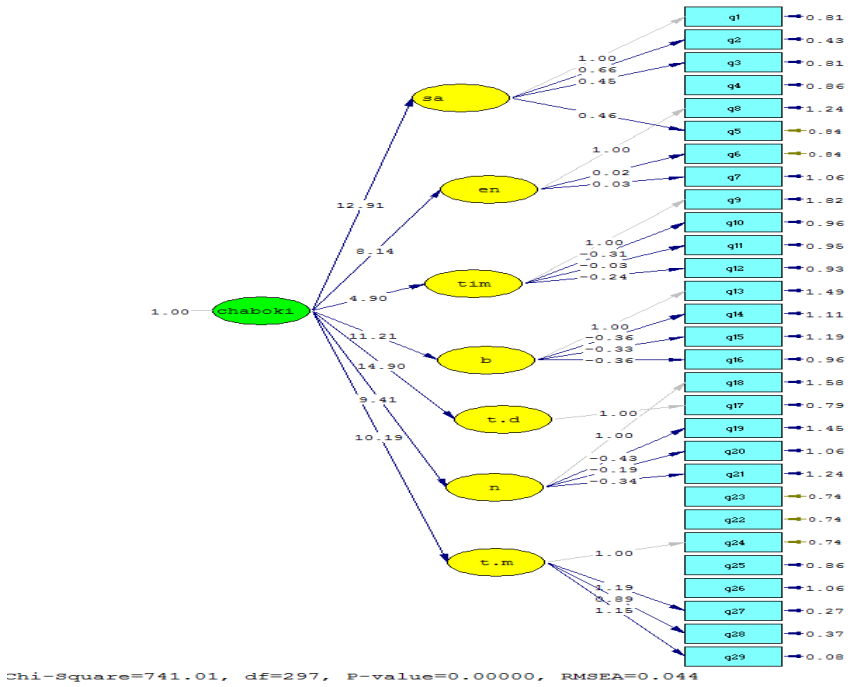

Figure 2. Second-order confirmation factor analysis of structural capabilities of organizational agility in meaningful state of parameters.

Table 9. Results of the fit of model of second-order verification factor analysis of structural capabilities of organizational agility.

Fit indices	Index Name	Abbreviation	Modified Model
Absolute fit indices	Chi 2 covered index	χ^2/df	2.49
	Goodness fit index	GFI	0.91
	Modified goodness fit index	AGFI	0.90
Adaptive fit indices	Normalized Fit Index	NNFI	0.91
	Normal fit index	NFI	0.92
	Comparative fit index	CFI	0.90
	Incremental fit index	IFI	0.91
Reduced fit index	Normal fit index reduced	PNFI	0.90
	Mean root of squares of estimated error	RMSEA	0.044
	Chi 2 normalized to degree of freedom	CMIN/df	4.1

Also, in Table 14-14, other fit indicators have been presented as a confirmatory factor analysis model for structural agility of organizational agility, which confirms the model. According to Table 4-13, the Goodness Fit Index (GFI) is 0.91 and the Adjusted Goodness Fit Index (AGFI) is 0.90, both of which are close to one and the model has a goodness fit and also other fit indices included in Table 4-13, such as the Non-Normalized Fit Index (NNFI), are 0.91 and the Normalized Fit Index (NFI) is 0.92 and the Comparative Fit Index (CFI) is 0.91 and the Incremental Fit Index (IFI) is 0.91 which is more than 0.9% and represents a goodness fit of the model. The RMSEA index is the root of the mean squared estimate. Models that have a RMSEA or root mean square of RMSEA of less than 0.1 fit well. For models that have a good FU performance, they are less than 0.05. The value of the RMSEA index is the mean root of the squares estimated to be 0.044, which indicates the goodness fit of the model. As a result, the second-order factor analysis is confirmed.

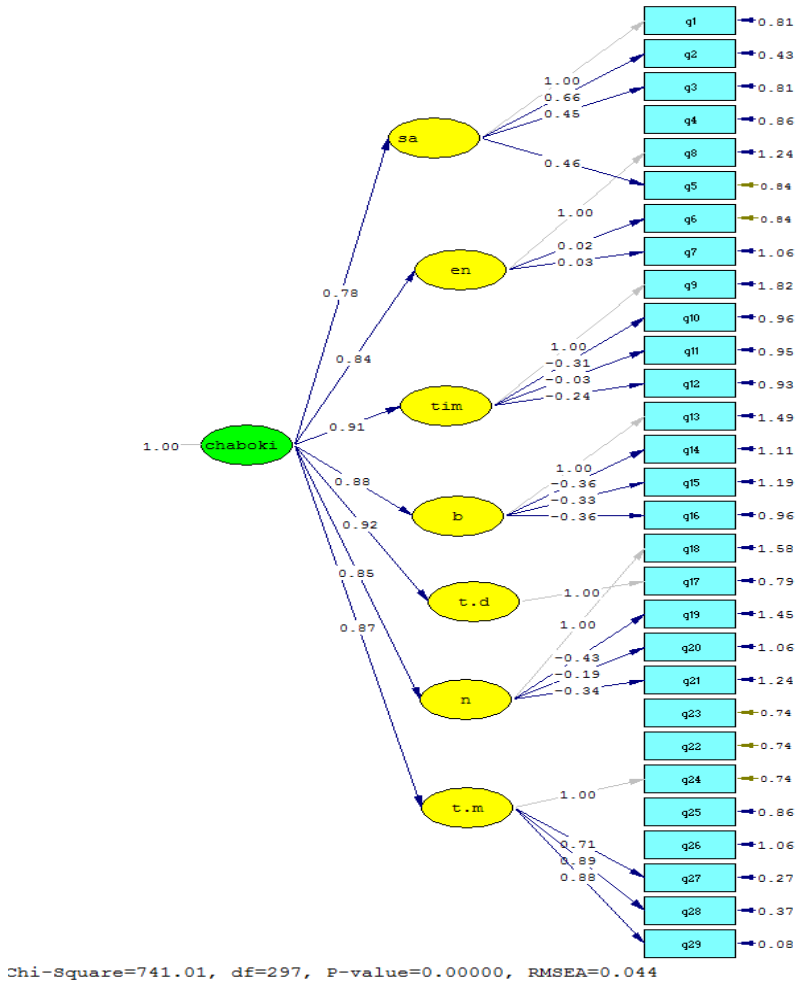

Figure 3. Second-order confirmation factor analysis of organizational capabilities of structural agility in standard estimation state.

Therefore, the structural factors of the organizational agility capability, their impact and their prioritization are as follows:

Table 10. Structural capabilities of the organizational agility in Zahedan municipality and their prioritization.

Factor	Impact rate	Prioritization
Knowledge-based organization	0.92	1
Team building and simultaneous engineering	0.91	2
Continuous improvement	0.88	3
Formation of virtual organization	0.87	4
Renovation ability	0.85	5
Coherence and harmony	0.84	6
Organizational Structure	0.78	7

According to Figure 4-8, structural capabilities of organizational agility in Zahedan municipality and its prioritization have been determined that the formation of a knowledge-based organization as the first priority has the highest ratio of the standard 0.92 among other components and dimensions affecting the organizational agility and team building and engineering simultaneously have a standard coefficient of 0.91 as the second most important factor in the organizational agility. Continuous improvement, the formation of a virtual organization, the ability to

modernize, coherence and coordination, and organizational structure, in the next priorities, were the priorities in organizational agility, respectively.

Discussion and Conclusion

In this research, the confirmatory factor analysis and path analysis were used to identify hidden variables from the revealing variables and to evaluate the fit of the research model. After confirming the factor analysis, it was concluded that the indicators that were identified as indicators for identifying the structural factors of the agility empowerment were confirmed. 29 indicators for identifying variables of organizational agility variable were classified into seven groups. These seven components are:

- Organizational Structure
- Coherence and harmony
- Team building and simultaneous engineering
- Continuous improvement
- Knowledge-based organization
- Renovation ability
- Formation of virtual organization

After the factor analysis of the first level, the factor analysis of the second level was carried out and it was concluded that the correlation of the structures with the agility of the organization was good. According to the research literature, 7 factors were identified and after the confirmation factor analysis, all seven factors were approved and accepted. These seven factors are:

Table 11. Structural Capabilities of Organizational Agility in Zahedan Municipality.

Knowledge-based organization
Team building and simultaneous engineering
Continuous improvement
Formation of virtual organization
Renovation ability
Coherence and harmony
Organizational Structure

According to the second factor analysis, the prioritization of the effective indicators in the structural capabilities of the organizational agility in Zahedan Municipality was identified and the following results were obtained.

Table 12. Prioritization of structural capabilities of organizational agility in Zahedan municipality.

Factor name	Prioritization
Knowledge-based organization	1
Team building and simultaneous engineering	2
Continuous improvement	3
Formation of virtual organization	4
Renovation ability	5
Coherence and harmony	6
Organizational Structure	7

According to the above Table, it became clear that the formation of a knowledge-based organization was the most important factor. This conclusion is consistent with the results of Youssuf et al (1999), one of the factors influencing agile production by knowledge-based enterprises. Youssuf et al (1999), while explaining the empowerment dimensions and its relationship with the agility of the organization, believes that the re-designing of the functions and the ability to benefit from the employee participation as components of competency are influential in the creation and creation of the job satisfaction. The use of skills, knowledge and information of all employees of the organization in Goldman et al (1995), Kettunen's studies (2009), Youssuf et al (1999), Lane et al (2006)) have been proposed.

According to the above Table, it became clear that the factor of team building and co-engineering is the second important factor that one of the factors influencing agile production based on rapid response is teamwork and most agility models point to this factor.

According to the above table, it was found that the continuous improvement factor was the third important factor. This result is consistent with Sharp et al (1999), one of the most influential factors in the production of agile responses based on continuous improvement.

According to the above table, it became clear that the formation of the virtual organization was the fourth important factor. This result is consistent with Sharp et al (1999) and Youssuf et al (1999), one of the most influential factors in acquiring agile responses based on virtual responsiveness. Also, Seyyed Yaser and Seyyed Mahmoud Ebrahimian Jelodar (2011) in a research entitled "Organizational Agility: Responsiveness and Organizational Flexibility" found that traditional organizations cannot respond to customer needs and changes in their environments. In the future, their survival is impossible, and in virtual learning organizations, they can compete with the environment more consistently, due to the fact that they have the characteristics of agile organizations better and faster.

Regarding the above table, it was found that the factor of modernization is the fifth important factor. This conclusion is consistent with the results of research by Youssuf et al (1999). In this research, the foundations of agility competitiveness are considered to be speed, flexibility, innovation, predictability, quality and profitability. In this framework, Youssuf et al differentiate among the three factors of agility at different levels of the organization. Agility refers to individual resources (people, machinery and management), the agility of the wisdom to the organization, and the agility of the organization to the intermediate level. This framework consists of four key concepts of agile production: core competency management, formation of virtual organization, redevelopment and reorganization, and knowledge-based organization.

According to the above Table, it became clear that the factor of coherence and coordination is the sixth important factor that considers the general principles of agile organization designing as follows: development of a resource strategy, resource management, competency building, leadership development and identification, the pivotal process, the construction of an information system-based structure, and coherence and order in the context of readiness for change.

According to the above Table, it was found that the factor of organizational structure is the seventh important factor. Arteta and Giachetti (2004) in a study of complexity, one of the dimensions of organizational structure, have suggested organizational agility as a substitute for agility. They concluded that organizations that have less complexity in their processes make change easier and, therefore, they are more agile and on the contrary, creating change in organizations with complex processes is harder and these organizations are less agile.

Conflict of Interest

The authors declare no conflict of interest.

References

Arteta, B. M., & Giachetti, R. E. (2004). A Measure of Agility as the Complexity of the Enterprise System, Robotics and Computer - Integrated Manufacturing, 20(6), 495-503.

Ebrahimian Jelodar, S. (2011). Organizational agility: Accountability and Organizational Flexibility, Two Journals of Human Development of Police, Eighth Year, 39.

Goldman, S. L. N. R. N., & Preiss, K. (1995). Agile Competitors and Virtual Organizations: Strategies for Enriching the Customer, New York: Van No strand Reinhold.

Kettunen, P. (2009). Adopting key lessons from agile manufacturing to agile software product development: A comparative study, technovation, 29, 408-422.

Shahaei, B., & Sobhaninejad, M. (2006). Learning Organization (Theoritical Principles of Research and Measurement Model), First Edition, Yastoroun Publishing, Tehran.

Sharp, J. M., Irani, Z., & Desai, S. (1999). Working towards agile manufacturing in the UK industry, International Journal of Production Economics, 62(1-2), 155- 169.

St. John, C. H., Cannon, A., & Pouder, R. (2001). Change drivers in the new millennium: an agenda for operations strategy research, J Oper Manage, 19,143-60.

Youssuf, Y., Sarhadi, M., & Gunasekaran, A. (1999). Agile Manufacturing: The drives, concepts and attributes; international journal of Operation economics, 62, 33-43.