

Explaining an Organizational Agility Development Model

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Abstract. Nowadays, organizational agility is a subject that its study has a significant impact on the growth and improvement of organizations. Present research in terms of purpose is applied and in terms of methodology is descriptive-exploratory. According to the theoretical hypotheses explained in the research, organizational, strategic, human, and technological factors were identified in this research as the factors explaining the organizational agility development model. The results obtained from the statistical analysis at the descriptive level demonstrated that average of

organizational agility, human, organizational and strategic factors are greater than the average level and average of technological factors is at the average level. At the inferential level, which used confirmatory factor analysis, the results indicated that organizational, human, strategic, and technological factors are influential on the organizational agility development.

Keywords: Organizational Agility, Organizational Factors, Strategic Factors, Human Factors, Technological Factors.

1. Introduction

In this turbulent and disordered age when the slightest change can lead to radical and significant consequences, the traditional methods and paradigms are can no longer respond to problems. Educational system needs various forms of agility. Agility tells the educational system that the age of management through hierarchical objectives or predetermined rationality and exact controlling is at an end (Abbaspour et al. 2012). With the advent of the 21st century, it is more difficult for an organization to be successful and survive, and this is because of the emergence of a new commercial era one of whose main characteristics is change. This has led to a radical revision of commercial priorities, strategic approaches, ability to survive, and methods. Nowadays, the emphasis is more on the ability to adjust with changes in the commercial environment, and new cooperation methods such as virtual organizations are among the pre-action methods for understanding customer and market needs. The emerging paradigm is called agile manufacturing which refers to going a step further and developing new concepts and meanings for better performance and success in commerce in theory, and a strategic approach in production and consideration of the new conditions of the commercial environment in practice. Responding to changes and considering their advantage through making strategic use of production and managerial methods and tools, are the most central and essential concepts of agile manufacturing (Zhang & Sharifi). Educational system is among the systems that need significant change and evolution with regard to organizational agility.

2. Literature review

Organizational agility is among the subjects the clarification of whose various aspects in different industries can prepare the conditions for the growth and improvement of their performance on different levels. Accordingly, and in order to adjust themselves with the levels of change around them, educational organizations also require themselves (beside clarifying the position of each of their stakeholders in the macro pattern of organizational agility) to identify the strengthening factors and prepare the procedural system for achieving their purposes (Farsijani, 2013). In the previous decade, most companies chose the rebuilding and re-engineering approaches in order to respond to the environmental challenges and changes, although these approaches were not always successful. However, today many organizations and companies are facing a steady, growing, and uncertain competition which is intensified by technological innovations, changes in market environments, and the growing needs of the customers (Souder, 2010). This critical situation has led to significant reforms in organizations' strategic perspectives, commercial priorities, as well as revision of traditional and even rather contemporary patterns (Dove, 2009). It can be said that approaches and solutions belonging to the past are no longer capable of facing contemporary challenges caused by organizations or imposed by them from the outside, and that it is better to replace them with new approaches and viewpoints. Thus, agility is one way to respond to these factors of organizational change and evolution. In fact, agility is considered a new paradigm for engineering competitive organizations and firms. On the one hand, the need for this new paradigm is based on the increase in the coefficient of change in an environment which forces firms and organizations to respond rationally and intellectually to changes. On the other hand, markets and customers want products that are inexpensive, suitable to their needs, and quickly accessible. Thus, agility can result in success in making profits, achieving share in the market, and attracting customers in competitive markets (Shahaei, 1384). The very quick development of education in the last few decades is in fact a convincing answer to the educational needs of the organization. It should be noted that effective educational activities have a major connection with the process for the organization's strategic planning process.

Accordingly, the influence of human resources managers on organizational decisions are gradually growing, and as a result, the new position of the human resources managers can be considered under the title of "chief learning manager" (Meredith, 2011). With the quick developments in the electronic learning and the technologies for the electronic development of human resources, the educational system is turning into a stimulus for conceptualization, implementation, and assessment of learning opportunities in the working environment. However, since we are still in the middle of the stage for the changes and evolution with regard to the shape and objectives of the organization of education, its final shape is not still completely clear to us (Arteta, 2008). In the last decade, considering the growing importance of agile organization for responding to the needs of the society's members, there have been many studies conducted on this subject. For example, Karmi (2002) in his MA thesis entitled "Proposing a New Methodology for Implementing Organizational Agility in Manufacturing", first explains agile manufacturing and the concepts related to it which had been so far considered by scholars, and then, propose a practical framework for the implementation of the concept of agility in organizations. This study was supervised by Shahandeh and conducted in the Isfahan University of Technology. Pourshahabi (2009) in his MA thesis entitled "Investigating Organizational Agility Using A. T. Kearney's Model and Fuzzy Logic: Case Study of the Administration Office of Standard and Research of the Sistan and Baluchestan Province" uses a combination of the A. T. Kearney's model and fuzzy logic in order to investigate organizational agility. This study was supervised by Dr. Dahmardeh and conducted in the Islamic Azad University, Zahedan branch. Baqeri Karachi et al. (2016) in a paper entitled "Level of Practicing Components of Organizational Agility in Universities" seek to determine the level of using organizational agility components among the faculty members of public universities of the Fars province based on 5 agility components including stimuli, capabilities, facilitators, obstacles, consequences. Results of this study demonstrate that the level of using organizational agility components in the public universities of the Fars province is below the average level. Safari et al. (2013) in a research entitled "Conceptual Model for Agility Strategy and Work Organization Using

Structural Equations Model in the Iranian Fabric Industry" found that there is a positive and significant relation between agility strategy and work organization in the Iranian fabric industry. In (2012), in Georgia, Avilisen conducted a research aiming at determining the impact of organizational agility on companies' competition capability in international markets. Results of Avilisen's research showed that based on speed, flexibility, innovation, quality, and profit, agility enables companies for timely competition in international markets with a more effective method for conquering them, and this allows companies to establish and solidify a good competitive industrial situation for themselves. The possible rationality behind this theory is that agility allows companies to face environmental changes through speed, quality, flexibility, and responsibility, and stay competitive. The factors mentioned above are the key components of agility. Unexpected shocks in the supply chain have a high cost, and so, more than ever, agility turns into quick response to a crisis. In this research, in order to propose a pattern for the organization agility of the North Khorasan province's organization of education, the model by Aqaei (2014) was used, with components including organizational factors, human factors, strategic factors, and technological factors as the factors influencing organizational agility in the North Khorasan province's organization of education.

3. Method

Since in the present research, we sought to evaluate theoretical concepts and the results of the research can be used in order to reinforce organizational agility in the North Khorasan province's organization of education, the present research is of the practical type regarding its objective. Furthermore, regarding categorization of researches based on the data collection method, the research is descriptive, because the present research seeks to study and identify factors affecting organizational agility using the factor analysis technique. Thus, considering the facts above, we may conclude that the present research is practical with regard to its objective, and descriptive-exploratory regarding its method. It should also be noted that the questions the research seeks to answer are as follows: What is an appropriate pattern for developing organizational agility in the North Khorasan province's

organization of education? What is the level of organizational agility in the North Khorasan province's organization of education? What are the factors influencing organizational agility in the North Khorasan province's organization of education? Statistical population of the present research includes all the heads of the educational organization in the North Khorasan province whose number, according to the statistics provided by the North Khorasan province's administration of education, is 996, and, using the Cochran sampling formula, 227 were chosen as the statistical sample. Furthermore, the stratified random sampling method was used for the purposed of this research. Standard questionnaire by Sharifi and Zhang (2001) was used to collect information for this research. Results from the Cronbach's alpha test demonstrate the internal coordination and alignment of the items in the evaluation tool; the value of the Cronbach's alpha for all the items of the variables under evaluation in the research is found to be higher than 0.7.

4. Findings

In order to confirm the resulting factor structure, strength test, and the share significance of each of the variables in the scale of the appropriate pattern of organizational agility, a confirmatory factor analysis was conducted and it is provided in the figures 1 and 2.

In Table 1, which is provided for the investigation of the impact of hidden endogenous variables on the observed variables, the questions 1, 14, 29, and 34 are considered fixed scale variable, and its t-values are not reported, and according to the information in Table 1, the estimated coefficients of all routes are significant. Values of the standardized parameter for each of the observed variables (markers) demonstrate the strength of factor loading on the factor (latent variable), and the t-values larger than 1.97 show this share significance.

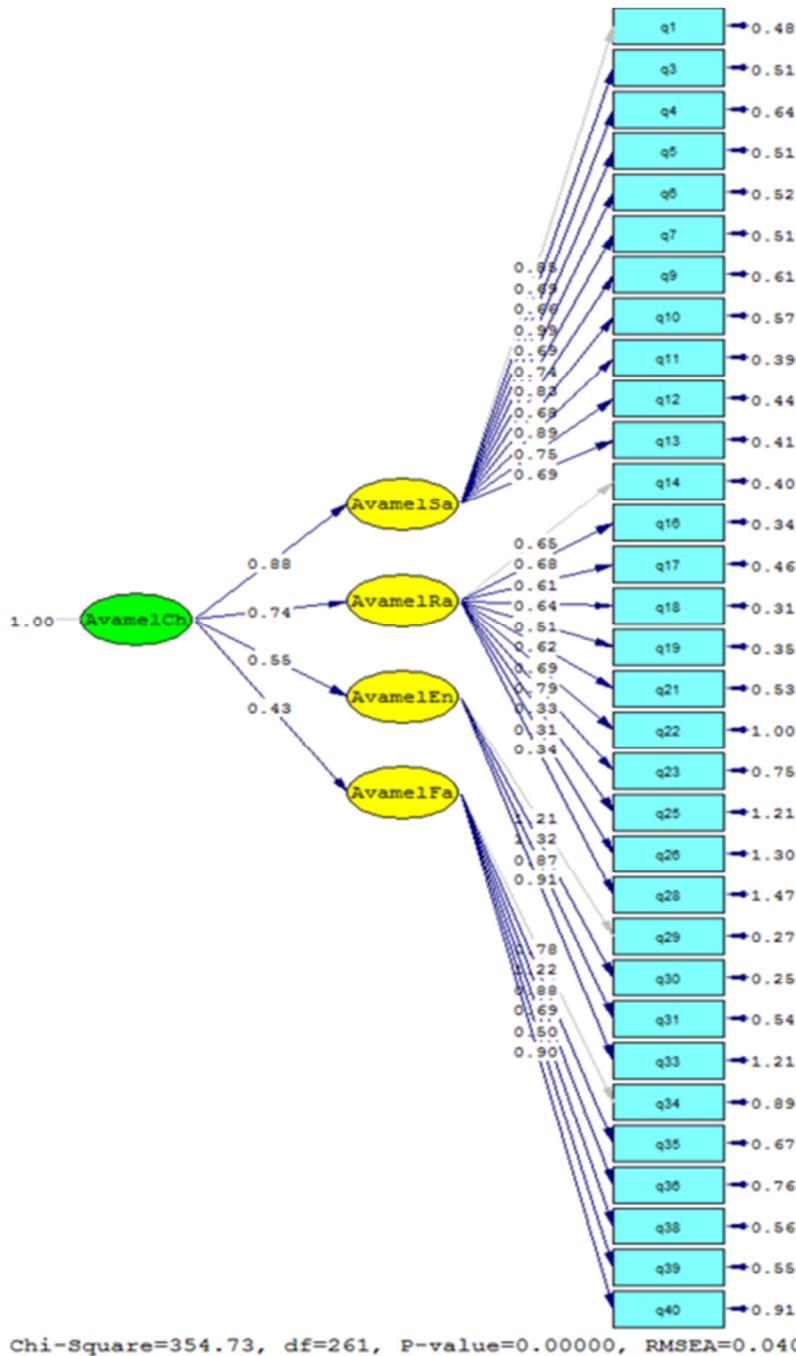


Figure 1. Second order confirmatory factor analysis based on factor loading

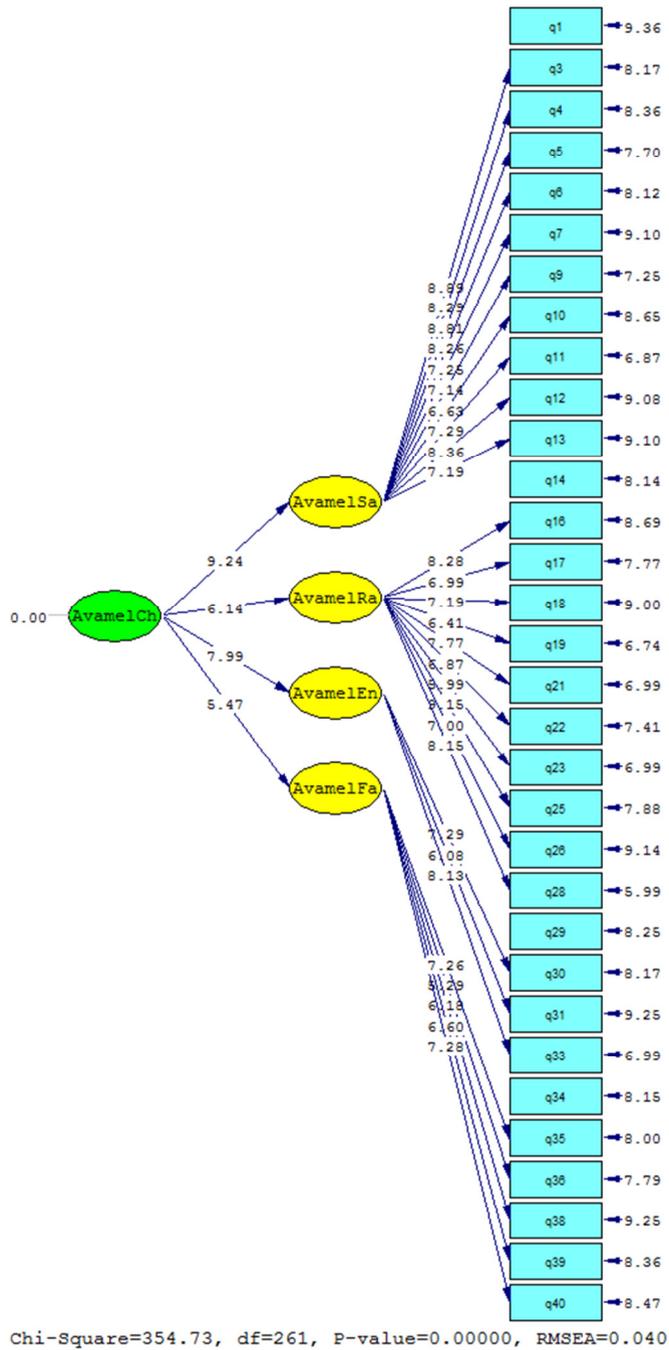


Figure 2. Second order confirmatory factor analysis based on the significance coefficient

Table 1. Impact of the hidden endogenous variables on the Y observed variables (LAMBDA-Y, $y\lambda$)

Parameters Items and Factors	Estimation of the Parameter b	Standard Error	Standardized Parameter	T
Organizational Factors				
Flexible Organizational Structure	0.84	0.90	0.85	----
Updating Staff Skills	0.69	0.82	0.69	8.89
Effective Staff Training	0.65	0.84	0.66	8.29
Flexibility	0.97	0.75	0.99	8.81
Quick Response	0.68	0.52	0.69	8.26
Quantity and Quality of the Organization's Services	0.74	0.72	0.74	7.25
Culture of Change	0.83	0.82	0.83	7.14
Speed in Delivery and Finishing a Task	0.68	0.64	0.68	6.63
Omission of Activities without Added Value	0.87	0.67	0.89	7.29
Unification and Low Complexity	0.74	0.89	0.75	8.36
Learning Organization	0.68	0.47	0.69	7.19
Strategic Factors				
Quick Resource Allocation	0.65	0.60	0.65	----
Strategic Perspective	0.68	0.56	0.68	8.28
Compatibility with Change	0.60	0.58	0.61	6.99
Expenses	0.64	0.72	0.64	7.19
Management of Change	0.50	0.44	0.51	6.41
Improvement of Quality and Continuous Improvement	0.61	0.71	0.62	7.77
Operational Utility and Effectiveness	0.69	0.30	0.69	6.87
Strategic Planning	0.78	0.54	0.79	9.99
Decentralized and	0.32	0.66	0.33	9.15

Parameters Items and Factors	Estimation of the Parameter b	Standard Error	Standardized Parameter	T
Group Decision-Making				
Delivering Value to the Customer	0.31	0.40	0.31	7.0
Style of Leadership	0.33	0.65	34/0	8.15
Human Factors				
Risk Management Capability	1.21	0.72	1.21	----
Staff's Cooperation	1.32	0.83	1.32	7.29
Capable and Multi- functional Staff	0.87	0.45	0.87	6.08
Flexible Staff	0.91	0.40	0.91	8.13
Technological Factors				
Staff's Knowledge of and Access to Information	0.76	0.77	0.78	----
Information Technology Infrastructure	0.22	0.58	0.22	7.26
Compatibility and Acceptance of Technology	0.88	0.53	0.88	5.29
Sharing Clear Information	0.68	0.48	0.69	6.18
Integration Resources and Measures	0.49	0.68	0.50	6.60
Appropriate Technology	0.90	0.50	0.90	7.28

Table 2 demonstrates the impact of hidden exogenous variables (investigation and identification of factors affecting the development of organizational agility).

Table 2. Total impact of hidden exogenous variables (KSI ξ) on endogenous variables (ETA η).

Direction	Parameter Estimation	Standardized Parameter B	t
Investigation and Identification of Factors Influencing the Development of Organizational Agility in the North Khorasan Province's Organization of Education			
Organizational Factors	0.87	0.88	9.24
Strategic Factors	0.72	0.74	7.14
Human Factors	0.54	0.55	7.99
Technological Factors	0.42	0.43	5.47

The t value shows that the impact of investigation and identification of factors affecting the development of organizational agility in the North Khorasan province's organization of education (that are, organizational, strategic, human, and technological factors) are significant with a 95 percent speech accuracy probability. Table (3) demonstrates the goodness of fit criteria for the pattern resulting from confirmatory factor analysis which point to the model's goodness of fit with the observed data.

Table 3. Goodness of fit criteria for the identification of factors influencing the development of organizational agility

Goodness of Fit Criterion	Root Mean Square Error of the Approximation	Significance Level	Degree of Freedom	Chi Squared
0.99	0.040	0.000	261	354.73

As a result, the model identified for the factors affecting the development of organizational agility (with the four organizational, strategic, human, and technological factors) is confirmed and valid.

5. Conclusions

According to the results of the research, it can be asserted that human factors are among the important factors influencing organizational agility. Therefore, we recommend that the managers to undertake the necessary measures with regard to staff involvement, training flexible staff, strengthening skills and abilities of the staff, increasing capabilities

for risk management, and formation of inter-functional teams. Organizational factors are among other factors influencing organizational agility, and so, we recommend that the managers to strengthen the culture of change in educational organizations and do their best with regard to learning and developing learning organizations. Furthermore, we recommend that they take measures with regard to increasing trust and honesty in organizations, effective staff training, increasing flexibility in organizations, quick response, quantity and quality of the organization's services, omission of activities without added value, giving authority to the staff and unification of organizations. With regard to strategic and technological factors, we recommend that the managers and authorities of the organization of education pay special attention to strategic planning in the organization, customer satisfaction, decentralized and group decision-making, flexible style of leadership, developing a strategic perspective, increasing compatibility with change, optimized management of changes in the organization, operational utility and effectiveness, and quality improvement. We hope organizations will pay attention to the factors mentioned so that we will see an organization with a higher agility and compatibility to change.

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