

VALIDITY OF THE WORKFORCE AGILITY (WFA) ATTRIBUTES FOR MEASURING THE PERFORMANCE DEVELOPMENT “EXPLORATORY AND CONFIRMATORY FACTOR ANALYSIS”

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ABSTRACT

Study Purpose

The study is aiming to recognize the investigation the role of Workforce Agility (WFA) Attributes for measuring the performance development through the Exploratory and Confirmatory Factor Analysis among Royal Bahraini Armed Depots.

Study Design, Approach and Methodology

Due to the limited study population, it has been fully taken for the current study of (300) members included all the working specialists (officers, Military beneficiaries, and beneficiaries of local civilian companies) among the (3) Depots (Army Depot, Navy Depot, Air force Depot) in Royal Bahraini Armed Depots. Was using an Exploratory and Confirmatory Factor Analysis (EFA, CFA) of Workforce Agility (WFA) Attributes.

Main Findings

- 1. The Attributes that adopted by the current study have a high level of credibility in the Exploratory and Confirmatory test which it means the possibility of relying on these Attributes in the future studies and linked to other variables.*
- 2. The results of the current study show that the measured attributes are relevance for measuring the Performance Development in a side and conduct comparative studies in other side.*

Study Recommendations

- Activate the role of Workforce Agility (WFA) Attributes in the work level to rise up the performance development in all level of work.*
- Training on Workforce Agility (WFA) Attributes to face the change in the environment for perfect performance development in all level of work.*
- Prepare a new style program for the new military cadet during the military drill to configure them to face the change in the environment during their service.*

Keywords: Workforce Agility (WFA) Attributes Flexibility, Adaptability, Motivation, Training, Participation, Empowerment, Exploratory Factor Analysis "EFA", Confirmatory Factor Analysis "CFA".

INTRODUCTION

The race for distinction between military organizations has become remarkable by reviewing the capability of combat readiness and has become a regional, international and global classification. Many of these organizations have become models of competitiveness and excellence in all their forms, and their access mechanisms are more accurate.

To complete the circle and proof to reach the highly effect of the level work, previous studies had encouraged inserting (WFA) as contemporary and effective variable to stimulate the loop of effectiveness. (Goldman et al., 1995; Sanchez & Nagi, 2001).

Workforce Agility (WFA) Attributes is an environmental responsiveness to the turbulence and sudden change (Breu et al., 2002) to react, adapt the change promptly, and take advantage to

benefit the firm (Chonko & Jones, 2005). According to (Brumfit et al., 2001), (WFA) has an influential role on environmental turbulence that affects the level of work among the competitors. The flexibility, copes with the unexpected internal and external environmental changes (Bosco, 2007), qualify the knowledge and skills to anticipate the dynamics of the environment (Alavi & Wahab, 2013).

By focusing on previously presented about the Workforce Agility (WFA) Attributes and the result of previous studies in increasing the effectiveness the level of work in existence of (WFA), furthermore, the lack of studies to review the role of (WFA) as an effectiveness tool for increasing the level of work so this is a motivation for this research to study and investigate the role of (WFA) to verify their impact on the level of work among Royal Bahraini Armed Depots. This is the motivation of this study to investigate the validity and the benefits of (WFA) to improve the performance development in all level of work among Royal Bahraini Armed Depots.

Problem Statement

The diagnosis of the current study problem is derived from two sources; first source from previous studies, second source is from the practical and field experience

Study of (Alavi & Wahab, 2013), they deduced that there is a lack of study that has not been given much attention during growing global competition although it is an effective tool on behavior of many firms. They recommended continuing the study to find out more impacts of (WFA) on organizational outcomes.

A study by (Sumukadas & Sawhney, 2004) concluded that the (WFA) can be improved and reach the highest performance of the organization by adopting employee involvement practices, especially when there were many of sources literature described these attributes of (WFA) and its effectiveness without examining it on organization outcomes.

Sherehiy (2008) concludes that (WFA) is new approach of enterprise management between many different solutions that are necessary to achieve success and adapt in responding to unpredictable changes of competitive market environments.

The researchers through their practice and field experience interviewed the three Depots crew "Army, Naval, and Air force" of how practice the (WAF) in military organization in kingdom of Bahrain specially it does not rise to the desired ambition of the level of work, despite the existence of a framework, which leads to retreat in the quality performance and decline in the incentive to work.

Based on the above, it is clear how the influences of (WFA), and this subject need giving importance to a deeper study of evaluating the role of (WAF) in the level of work and clarify this concept in military organization, and put it in correct framework and study their importance, impact, and it effectiveness to achieve the desired ambition level of working level.

Objective of the Study

The objectives of the current study are summarized in the following:

1. Providing a conceptual and intellectual framework for the Workforce Agility (WFA) Attributes.
2. Identifying the level of exercising of the Workforce Agility (WFA) Attributes in the Armed Forces Depots "Army, Navy, and Air force".
3. Investigate the validity of Workforce Agility (WFA) Attributes in the Armed Forces Depots "Army, Navy, and Air force" through the Exploratory and Confirmatory Factor Analysis (EFA, CFA).

Significance of the Study

From the Scientific Side

This research deals with studying and analyzing the Workforce Agility (WFA) Attributes in administrative literature. Also the study seeks to examine the nature of Workforce Agility (WFA) Attributes among the Armed Forces Depots "Army, Navy, and Air force" taking into consideration that it is among the few studies in this aspect that will fill the knowledge gap in the

Arab and international library of this kind of studies.

From the Practical Side

To recognize the investigation the role of Workforce Agility (WFA) Attributes to verify their impact on the level of work among Royal Bahraini Armed Depots. The results of this study can benefit the military sectors and category in Royal Bahraini Armed Forces and take into the account development it to direct the work in highest level and achieve the desired ambition.

Limitation

This study was conducting on sector of Armed Forces Depots and the results achieved cannot be generalized to all sectors category of military society in Royal Bahraini Armed Forces because the study deals with a specific sectors and cannot be compared to sectors that differ in their composition and duties, but it is possible to take into account the results and the consequences of the study to develop the performance in all level of work in other sectors in the Armed forces to achieve the desire ambition of performance development in all level of work among Royal Bahraini Armed Depots.

Also this study cannot be applied and generalized to other armies as a result of different policies and strategies in the composition of the armies, but the results can be viewed as a catalyst factor in the continuation and of research on other sectors of the Armies and more broadly.

It is difficult to generalize the results on profit organizations as a result of different policies and strategies in addition to different composition. Moreover, the results of this study depend on the seriousness and credibility of the sample members to the extent of their response to the questionnaire.

Delimitations

1. The scope of the study is composed as follows:
 - Spatial: This research was carried in the Royal Bahraini Armed Forces.
2. Field study: This research was carried on officers, non-commissioned officers, soldiers, and technicians who work in the Royal Bahraini Armed Forces.
3. Time limits: period of application the questionnaire "24/09/2017 – 30/11/2017".

Conceptual and Operational Definitions of Workforce Agility (WFA) Attributes

Muduli (2013), in her conceptual study, states that (WFA) is an attribute of a wide frame that is capable of promoting the competitive environment for confronting sudden environmental change, it has the following attributes "Flexible, Adaptability, Developmental, innovative, collaborative, competent, fast and informative in nature, training, compensation, empowerment, teamwork, and Information systems".

For the study purposes, the (WFA) attributes are complementary features of the Organization, its crews consist of a set of (Flexibility, Adaptability, Motivation, Training, Participation, and Empowerment) for using the respond quickly and flexibly to the sudden change and adapt easily to unexpected external and internal environmental changes.

The definitions of (WFA) attributes "Flexibility, Adaptability, Motivation, Training, Participation, and Empowerment" are presented below:

Flexibility: Depots response to sudden change in the external and internal environment and to perform different tasks in one.

Adaptability: Is a Full compatibility of the Depots to the environmental shift in the tasks to modify and develop patterns and behaviors to better fit the new environment.

Motivation: The engine that drives the Depots crews to do their duties to perform tasks with enthusiasm and mastery to the end.

Training: The process of acquiring the skills, experiences and knowledge of the Depots' workers in their current and future jobs in a way that reflects on their performance and behavior.

Participation: Contribution, participation and involvement in operations to highlight the capabilities and effectiveness of warehouses and their staff as a team in accomplishing tasks.

Empowerment: An authorization of powers in the decision making in the chain of command of duties within a limit to align the Depots tasks.

Theoretical Framework

Evolution of Workforce Agility (WFA):

The movements of any organization business relay to how the organization and its crew meet the new and face the sudden change. Workforce Agility (WFA) is simulating this meaning through a composition of two parts "Agility and Workforce", that is a suggestive word to the rapid response of the organization to sudden environmental change (Zhang, 2011).

The term of this word (WFA) is essentially derived from the Agility that was developed in the 1950s in the field of air combat which means the ability of aircraft to change its maneuver state (Richards, 1996), which soon became a focal reference for manufacturing systems studies.

By increasing the internationalization of competition (Kasarda & Rondinelli, 1998) and the need for cooperative production relationships (Yusuf et al., 1999), the concept of Agility has emerged and popularized in manufacturing in the early 1990s as a new competitive strategy for meeting varied customer requirements in terms of price, specification, quality, quantity and delivery (Katayama & Bennett, 1999).

The organizational agility has been argued to require an agile workforce; agility research has been mainly sought to understand speed and flexibility from an operations perspective (Yusuf et al., 1999). It was a need to recall the concept of Workforce which is described by Drucker in 1959 as "knowledge worker" (Breu et al., 2001), which was described by considering it as the skills, quality, competencies, and capability that are owned by people to manufacture the competitiveness (Pfeffer, 1994).

By combining the two concepts of the two words to have (WFA), will find an integration between both organization and employee would lead to growth the businesses in competitive markets to face continuous and unanticipated change (Gehani, 1995) and be capable to respond rapidly to the market changes and cope flexibly with unexpected change in order to survive unprecedented threats from the business environment (Huang, 1999).

The researcher finds out from the historical sequence in the terms and concepts of (WFA) it reflects importance as vital element to meet the sudden environmental change; this is what the researcher called to address in its extent to stimulate the performance in the work level.

Definition of Workforce Agility (WFA)

Researchers have defined (WFA) in a concise and manner efficient despite a few research have written about it.

It is the skill and vision of people and capabilities to deal with the sudden change in marketplace turbulence by capturing the advantageous side (Zhang & Sharifi, 2000). It is the capability of the organization and people for responding to the rapid environmental changes and adapt to it (Hormozi, 2001).

Sherehiy (2008) assumed it is a reactive and proactive behavior, and understood the significance of organizational characteristics to face the environmental change by using the knowledge and skills to pre-empt the dynamics of the environment.

Workforce Agility is a well-trained and flexible workforce that can adapt quickly and easily to new opportunities and market circumstances (Muduli, 2013), which are integration of resources and appropriate actions in the knowledge environment with fast changes through

providing customer friendly products and services through (speed, flexibility, innovation, quality and profitability) (Rahimi & Moqtader, 2016).

By introducing the definitions of researchers, there has been a convergence in the intellectual essence calls the researcher from his point of view to define (WFA) as the quick response from the organization and its crew to the sudden change in the environment. It could be measured through to what extent of flexibility response of the organization to the change and the reactive of crew to the responding to the change.

Importance of Workforce Agility (WFA)

To create a balanced and accurate work environment to ensures the organization performance, competitiveness, and satisfies the final beneficiary; (WFA)can meet the growing needs of customer demands for products of high quality, low-cost which that require cooperation across functional and organizational boundaries (Forsythe, 1997).

It is necessary to maintain the competitiveness in the market characterized by uncertainty and change (Jackson & Johansson, 2003), so that can support strategic objectives of cost, time, quality, and variety (Hopp & OYEN, 2004).Workforce Agility (WFA) is now considered to increase productivity, profits and market shares for business development in a competitive market of continuous and unanticipated change and for enhancing organizations’ prospects for survival in an increasingly volatile and global business environment (Muduli, 2013).

Workforce Agility (WFA) created for adapting quickly and easily to new opportunities and market conditions that can make the difference through well-trained and flexible workforce (Muduli, 2013).

Owing to importance the use (WFA) and the need for it for quick response to face the sudden change for competitiveness, the researcher directed his effort to investigate the extent of verification quick response to the quality system (LSS) for achieving the (CA) among the Depots of Army, Air force, and Navy in Royal Bahraini Armed Forces.

Attributes of Workforce Agility (WFA)

The selection of (WFA) Attributes in this research comes from the common and consistent between the researchers in previous studies and the most harmony and compatible elements to the researcher field, in addition to the interviews conducted by the researcher that referred to in the problem statement that summarized it in the following table (1).

**Table 1
(WFA) ATTRIBUTES FROM THE PREVIOUS LITERATURE**

Researcher	Year	Dimensions													
		Adaptability	Motivation	Training	Participation	Empowerment	Speed	Flexibility	Innovation	Proactivity	Incentive	Teamwork	Multi task	Skills	Competent
Yusuf et al.	1999						•	•	•	•					
karin et al.	2001				•	•								•	
sumukadas n and sawhney r	2004			•	•	•					•		•		
Ye-zhuang.et.al	2006			•	•	•						•	•		
Vazquez.et.al	2007		•	•					•			•			

Sherehiy	2008	•						•		•					
Ashutosh	2013	•	•	•	•	•	•	•				•			•
Rahimia G and Mansouri A	2016						•	•	•						
Total Grade		2	2	4	4	4	3	3	3	2	1	3	2	1	1

Study Design and Final Results

Study Design

The current study is an Exploratory and Confirmatory research among Royal Bahraini Armed Depots, and has been implemented on the analytical descriptive approach which is the most appropriate method in achieving the objectives of the present study

Study Population and Sample

The Royal Bahraini Armed Forces Depots in the Kingdom of Bahrain are the Population of the present study includes all their specialist, ranks and the beneficiaries related to the Depots of military units and local civil companies of total number (300) distributed in the following table 2.

Results of the Study

Identifying the level of exercising of the Workforce Agility (WFA) Attributes in the Armed Forces Depots “Army, Navy, and Air force”.

Table 2
REVIEWS THE RESULTS OF THE PRACTICE LEVEL OF (WFA) ATTRIBUTES IN ORDER TO ACHIEVE THE SECOND OBJECTIVE

No	Elements	Army Force			Navy Force			Air Force			Overall Workforce Agility "WFA" Attributes				
		m	sd	m%	m	sd	m%	m	sd	m%	m	sd	m%	Level	Rank
1	Flexibility	2.753	0.373	55.06	3.746	0.493	74.92	3.777	0.551	75.54	3.359	0.682	67.18	moderate	1
2	Adaptive	2.600	0.496	52.00	3.633	0.426	72.66	3.493	0.571	69.86	3.173	0.690	63.46	moderate	3
3	Motivation	2.172	0.658	43.44	3.000	0.581	60.00	3.287	0.513	65.74	2.764	0.772	55.28	moderate	6
4	Training	2.694	0.494	53.88	3.500	0.520	70.00	3.530	0.563	70.60	3.188	0.660	63.76	moderate	2
5	Participation	2.275	0.409	45.50	2.946	0.526	58.92	3.407	0.568	68.14	2.831	0.696	56.62	moderate	5
6	Empowerment	2.011	0.679	40.22	3.150	0.785	63.00	3.767	0.518	75.34	2.900	1.010	58.00	moderate	4
	Workforce Agility "WFA"	2.418	0.360	48.36	3.329	0.339	66.58	3.543	0.391	70.86	3.036	0.628	60.72	moderate	

Means description [1 – 2.33 (low), 2.34 – 3.67 (moderate), 3.68 – 5 (high)]

Table (3.1) indicates the values of (m), (sd) and (m %) for (WFA) among the three Armed Forces Depots “Army, Navy, and Air force”, where The Air Force reported the highest mean (3.543) then the Navy Force (3.329) while the Army Force has the least mean (2.418).

It was noted that the highest mean recorded is between all attributes is “Flexibility” for all the Armed Forces Depots, where the Army Force (2.753), Navy Force (3.746), and the Air Force with a mean (3.777). Furthermore, the question representing each (CA) elements were analyzed and the results are included in the following tables.

Overall, it indicates the Workforce Agility attributes “Flexibility” was the greatest ratings element by a mean of (3.359) while “Motivation” expressed the lowest mean (2.764). In general, (WFA) attributes mean was assessed by a value of (3.036) expressing a moderate level of agreement among the respondents. Furthermore, the question representing in each (WFA) attributes elements was analyzed and the results are included in the following tables.

It was using the Exploratory and Confirmatory Factor Analysis (EFA, CFA) to approach the third objective of this study of investigating the validity of Workforce Agility (WFA) Attributes in the Armed Forces Depots “Army, Navy, and Air force”. After treating the data analysis, the results become in the following tables (3), (4) of Exploratory and Confirmatory Factor Analysis of Workforce Agility (WFA) Attributes.

Workforce Agility Attributes	Question No.	Factor Loadings	Eigen value	Explained variance	KMO	Sphericity test (Barlets)	
						Test value	Sig
Flexibility	MV1.1	0.838	2.34	78.10	0.706	438.56	00000
	MV1.2	0.916					
	MV1.3	0.895					
Adaptability	MV2.1	0.856	2.22	74.05	0.718	325.93	00000
	MV2.2	0.850					
	MV2.3	0.876					
Motivation	MV3.1	0.873	2.40	80.23	0.718	482.16	00000
	MV3.2	0.887					
	MV3.3	0.926					
Training	MV4.1	0.891	2.33	77.84	0.725	411.90	00000
	MV4.2	0.899					
	MV4.3	0.856					
Participation	MV5.1	0.780	1.99	66.47	0.644	222.41	0.000
	MV5.2	0.876					
	MV5.3	0.786					
Empowerment	MV6.1	0.954	2.71	90.36	0.760	878.22	0.000
	MV6.2	0.936					
	MV6.3	0.962					

- Kaiser-Meyer-Olkin “KMO” test values ranged between (0.644) in Participation attribute and (0.760) in Empowerment. So the mentioned values of “KMO” suggest an acceptable value for data adequacy for the purpose of factor analysis.
- Sphericity test assumes significant probabilities among the factors being used in the correlation matrix. The results of all probability were significant at ($p < 0.001$) level, which it mean the relationships between the factors included in the analysis.
- Loading Factor reflect the concept of convergent validity. Typically an item is said to be convergent if a loading value was (0.40 or greater). Question n_o (MV5.1) in the Participation Attribute assigned the minimum of (0.780), but Question n_o (DV1.4) in the Empowerment Attribute recorded the maximum of (0.962) so these values were above the minimum required (0.50 or greater) suggesting reasonable convergent validity.

Attributes	Question No.	Factor loadings	χ^2	sig	CFI (0 – 1.00)	GFI (0 – 1.00)	RMSEA (0 – 0.08)
Flexibility	MV1.1	0.754	632.09	00000	00900	00901	00000
	MV1.2	0.847					
	MV1.3	0.870					
Adaptability	MV2.1	0.712					
	MV2.2	0.640					

	MV2.3	0.937				
Motivation	MV3.1	0.882				
	MV3.2	0.756				
	MV3.3	0.790				
Training	MV4.1	0.779				
	MV4.2	0.903				
	MV4.3	0.736				
Participation	MV5.1	0.658				
	MV5.2	0.810				
	MV5.3	0.667				
Empowerment	MV6.1	0.928				
	MV6.2	0.888				
	MV6.3	0.960				

- Loading Factor assigned the minimum Question no (MV2.2) in the Adaptability attribute (0.640) but Question no (MV6.3) record the maximum loading value of (0.960). So these values were above (0.40 or greater) suggesting reasonable convergent validity. Typically an item is said to be convergent if a loading value was 0.40 or greater (Hair et al., 2010).
- Chi square “ χ^2 ” testis (632.09) is a significant difference (sig = 0.000) that was < 0.05 resulting as a bad indication, further, the CFI is (0.900) and GFI is (0.901) are almost within the acceptable high range indicating good fitting indicators.
- RMSEA indicator was slightly greater than the desired value of (0.101) suggesting a poor fitting, and as a result the model is considered to be suitable and can't be judged as good nor can't be judged worse so for the purpose of the current research it is considered to be acceptable, Figure (3.1) bellow.

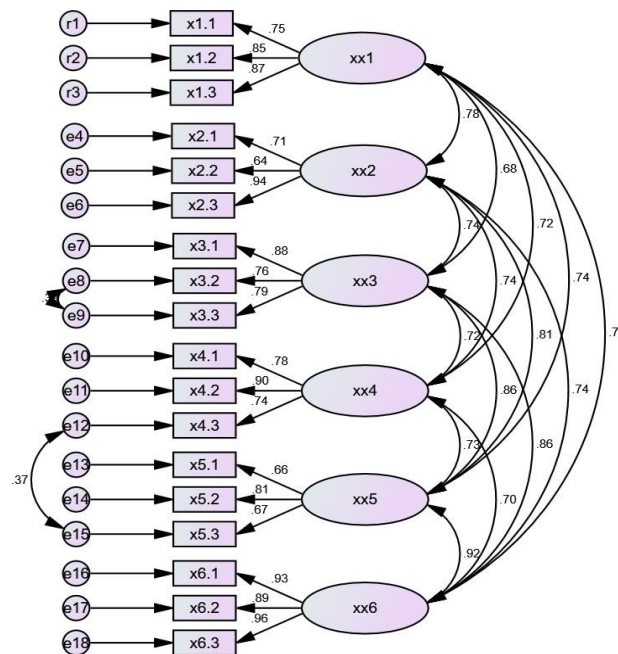


FIGURE 1
CONSTRUCT VALIDITY OF (WFA) ATTRIBUTES

CONCLUSIONS

Workforce Agility (WFA) Attributes is an effective tool were the researcher conclude, considering it an engine variable that contribute to increase the performance development in the level of work especially that many programs are not explicit on the reason composition and the organization's susceptibility to change.

The previous literature has touched the evolutionary definitions of (WFA) Attributes in addition to study it were the current researcher has concluded the Attributes based on the previous literature (table 2.1) and compatible to the field of study “Flexibility, Adaptability, Motivation, Training, Participation, and Empowerment”. Until now there is no agreement among the researchers on a specific suitable (WFA) Attributes for measurement in a reassuring, and this is one of the reason for the current research.

The Attributes that adopted by the current study have a high level of credibility in the Exploratory and Confirmatory test which it means the possibility of relying on these Attributes in the future studies and linked to other variables.

The results of the current study show that the measured attributes are relevance for measuring the Performance Development in a side and conduct comparative studies in other side.

RECOMMENDATIONS

Accredit (WFA) Attributes that tested in the present study in future studies considering it of a highly credibility.

The need to expand the research on (WFA) Attributes which are not yet fully studied, although today, as some studies have indicated, the main pillars in the success of organizations in Performance Development and reaching excellence.

Holding workshops to spread the culture of (WFA) among the military units to support and cover the differences among the Armed Forces to face the change in the environment.

Continuing to train workers in depots on how to invest in the attributes of workforce agility in order to improve the performance.

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REFERENCES

- Alavi, S., & Dzuraidah A.W. (2013). “A review on workforce agility”. *Research Journal of Applied Sciences, Engineering and Technology*, 5(16): 4195–4199.
- Bosco, C.L. (2007). *The relationship between environmental turbulence, workforce agility and patient outcomes*. The University of Arizona.
- Breu, K., Hemingway, C.J., Strathern, M., & Bridger, D. (2002). Workforce agility: The new employee strategy for the knowledge economy. *Journal of Information Technology*, 17(1), 21-31.
- Brumfit, K., Barnes, S., Norris, L., & Jones, J. (2001). *The competitive business environment*. Cheltenham, UK, Nelson Thornes.
- Chonko, L.B., & Jones, E. (2005). The need for speed: Agility selling. *Journal of Personal Selling & Sales Management*, 25(4), 371-382.
- Forsythe, C. (1997). Human factors in agile manufacturing: A brief overview with emphasis on communications and information infrastructure. *Human Factors and Ergonomics in Manufacturing & Service Industries*, 7(1), 3-10.
- Gehani, R.R. (1995). Time-based management of technology: A taxonomic integration of tactical and strategic roles. *International Journal of Operations & Production Management*, 15(2), 19-35.
- Goldman, S.L., Nagel, R.N., & Preiss, K. (1995). *Agile competitors and virtual organizations: Strategies for enriching the customer*. New York, NY. Van Nostrand Reinhold.
- Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E., & Tatham, R.L. (2010). *Multivariate data analysis*, 5(3), 207-219. Upper Saddle River, NJ: Prentice hall.
- Hopp, W.J., & OYEN, M.P. (2004). Agile workforce evaluation: A framework for cross-training and coordination. *Iie Transactions*, 36(10), 919-940.
- Hormozi, A.M. (2001). Agile manufacturing: The next logical step. *Benchmarking: An International Journal*, 8(2), 132-143.
- Huang, C. C. (1999). An agile approach to logical network analysis in decision support systems. *Decision Support Systems*, 25(1), 53-70.

- Jackson, M., & Johansson, C. (2003). An agility analysis from a production system perspective. *Integrated Manufacturing Systems*, 14(6), 482-488.
- Kasarda, J.D., & Rondinelli, D.A. (1998). Innovative infrastructure for agile manufacturers. *Sloan management review*, 39(2), 73.
- Katayama, H., & Bennett, D. (1999). Agility, adaptability and leanness: A comparison of concepts and a study of practice. *International Journal of Production Economics*, 60, 43-51.
- Muduli, A. (2013). Workforce agility: A review of literature. *IUP Journal of Management Research*, 12(3), 55.
- Pfeffer, J. (1994). Competitive advantage through people. *California management review*, 36(2), 9.
- Rahimi, G.H.R., & Moqtader M.A. (2016). The relation between the organizational intelligence and organizational agility (case study: employees of municipality of Tabriz). *International Academic Journal of Organizational Behavior and Human Resource Management*, 3(10), 32-38.
- Richards, C.W. (1996). Agile manufacturing: beyond lean? *Production and Inventory Management Journal*, 37(2), 60.
- Sanchez, L.M., & Nagi, R. (2001). A review of agile manufacturing systems. *International Journal of Production Research*, 39(16), 3561-3600.
- Sherehiy, B. (2008). *Relationships between agility strategy, work organization and workforce agility*. University of Louisville.
- Sumukadas, N., & Sawhney, R. (2004). Workforce agility through employee involvement. *Iie Transactions*, 36(10), 1011-1021.
- Yusuf, Y.Y., Sarhadi, M., & Gunasekaran, A. (1999). Agile manufacturing: The drivers, concepts and attributes. *International Journal of production economics*, 62(1-2), 33-43.
- Zhang, D.Z. (2011). Towards theory building in agile manufacturing strategies case studies of an agility taxonomy. *International Journal of Production Economics*, 131(1), 303-312.
- Zhang, Z., & Sharifi, H. (2000). A methodology for achieving agility in manufacturing organisations. *International Journal of Operations & Production Management*, 20(4), 496-513.