Studying the Impact of Intellectual Capital on Financial Performance through the Interactive Variables of Dynamic Capabilities in Islamic Azad University of Fars province

Marzieh Heydari[*1]*., Ali Soltani*[2]

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Marzieh Heydari
Department of Educational Sciences, Abadeh Branch, Islamic Azad University, Abadeh, Iran
Ali Soltani
Department of Management, Abadeh Branch, Islamic Azad university, Abadeh, Iran
Corresponding Author
mhidary@iauabadeh.ac.ir

Abstract

The main purpose of this research was to study the impact of intellectual capital on financial performance through the interactive variable of dynamic capabilities in Islamic Azad University of Fars province. The statistical population consisted of Faculty members of Islamic Azad University of Fars province; about 2,000 people and a sample of 384 people according to Cochran formula at 95% confidence level. Also, data collection tool was a 38-items consolidated questionnaire of Singh-Rao (2016), Asiaei and Jusoh (2015), Wang et al. (2014), Mention and Bontis (2013), the reliability of which was confirmed and it was estimated at 73%. In order to analyze the data at the descriptive level, descriptive-consolidated tables were used in SPSS 23 software and structural equation modeling was used at inferential level in component-driven method by using Smart PLS2 software. Finally, the findings of this research showed that intellectual capital indirectly (through dynamic intermediary of dynamic capabilities) influenced the financial performance, and intellectual capital directly affected dynamic capabilities, and dynamic capabilities directly affected the financial performance.

***Keywords*:** Intellectual capital, Financial performance, Dynamic capability

[1] - Department of Educational Sciences, Abadeh Branch, Islamic Azad University, Abadeh, Iran
[2] - Department of Management, Abadeh Branch, Islamic Azad university, Abadeh, Iran
Corresponding Author: mhidary@iauabadeh.ac.ir

Introduction

One of the basic elements of increasing the performance of individuals and organizations is the improvement and expansion of intellectual capital (Hashim et al, 2015). Assets or intellectual capital are non-competitive assets. Unlike physical assets that can only be used to perform a task, especially at a particular time, intellectual capital can be used simultaneously for a number of specific purposes. For example, a customer support system can support thousands of customers at a specific time. This ability is one of the most important criteria for the superiority of intellectual capital over physical assets (Nawaz et al., 2014). Human capital, social capital, and organizational capital as different dimensions of intellectual capital are not capability becoming personal property, but must be shared between employees, customers and suppliers. Therefore, the growth of this kind of assets requires more care and attention. Also, intellectual capital includes that part of the total capital or assets of the company that is knowledge-based, organization holder, and its owner. Therefore, intellectual capital can include self-knowledge (converted to the intellectual property or intellectual capital of an organization) and the final outcome of its transfer process. Intellectual capital thinkers agree that intellectual capital consists of three elements (Teece, 2014). On the other hand, dynamic capabilities as the most important competitive principle in organizations have dimensions such as learning capabilities, integration capabilities, reconfiguration capabilities, and alliance management capabilities. The dynamic capabilities of the organization in the condition of changing the external environment in order to establish a competitive superiority, the organization must renew resources whit its value. Dynamic capabilities allow organizations to effect on these lasting changes. Dynamic capabilities control the amount of organizational resource change and enable the organization's core resources to achieve a competitive superiority. The source is in the broad sense of dynamic capabilities is activities, abilities and skills that enable organizations to generate benefits (Pisano, 2016). Helfat and Petraf (2007) identified the capacity of an organization is purposefully to create, develop, or modify core resources, and from these concepts it becomes clear that, dynamic capabilities are organizational processes, and their role is to change the organization's core resources. Dynamic performance history also shows that dynamic capabilities are not bought from the market, but are created in the organization, and are dependent on the way the organization moves. But what is considered as a concern and a research problem for the researcher of this research is considering this point, whether intellectual capital and its dimensions, such as social capital and organizational capital can result in organizational productivity in the financial sector or in terms of financial performance in the study organization (Islamic Azad University of Fars province)? What is the influence level of each intellectual capital dimensions, or is it the level close or equal, and is there a huge difference between types of capital as intellectual capital dimensions? On the other hand, what relationship dynamic capabilities can have with financial performance? And how much is the dynamic capabilities impact on financial performance of the organization? How much different dimensions of dynamic capabilities are effective on the financial performance of the organization? And is the influence level of the dimensions being close or spaced apart? Finally, which dimensions will have the most and least effect?

In order to achieve the main question and to answer the question, what are the effective variables in direct and indirect way on financial performance Islamic Azad University of Fars province? Which of the variables and dimensions are directly and directly affect the financial performance of the organization under study? This hypothesis is raised that intellectual capital and its dimensions indirectly through its intermediary variable of dynamic capabilities and its dimensions affect the financial performance of Islamic Azad University of Fars province. Therefore, the main objective of this research is to determine the impact of intellectual capital indirectly (through the intermediary variable of dynamic capabilities) on the financial performance of Islamic Azad University of Fars province. A great evidence suggests that there is a positive relationship between intellectual capital and company performance. Bontisti research (1996) in Canada and Bontis et al. research (2000) in Malaysia showed that there is a positive correlation between the elements of intellectual capital (human, structural, and customer), with the performance of industries. Human capital, regardless of the type of industry, affects the company' performance. Structural capital has a positive correlation with financial performance.

Intellectual capital

In the twentieth century, economy was an industry-based. In this century, every company and every country that had more physical capital and material and visible capital was produced more wealth. But the 12th century is a knowledge-based economy. For example, Seetharamen et al. (2002) known human capital as the most important capital of the organization. Therefore, companies with higher intellectual and human capital are expected to have higher financial performance. The intellectual capital is a capital beyond the physical and visible capital. Today, the share of intellectual capital due to produce knowledge and information and, consequently, the production of wealth in a knowledge-based economy can play an important role in creating value added and Gross Domestic Product. For this reason, at the level of economic firms, financial performance of companies can be affected by intellectual capital and human capital. A great evidence suggests that there is a positive relationship between intellectual capital and company performance. Bontis research (1996) in Canada and Bontis et al. research (2000) in Malaysia showed that there is a positive correlation between the elements of intellectual capital (human, structural, and customer), with the industries performance. Human capital, regardless of the type of industry, affects the company performance. Structural capital has a positive correlation with financial performance. The importance of intellectual capital is that market value and stock prices of companies are not just dependent on tangible assets, but also depend on intangible assets such as intellectual capital. For example, Lev (2001) findings showed that around 08% of company market value was affected by market value of intangible assets. Kujansivu and Lonnqvist (2007) investigated intellectual capital for 11 of Finland's largest industries. The results showed that public-benefit companies used the sources of their intellectual capital. Chen Goh (2005) measured intellectual capital in Malaysian banks. The study showed Hong Kong Bank, although having less physical capital than the "Me" bank, but was the most efficient domestic bank due to its highest intellectual capital ratio. Mansouri's research (2018) entitled Intellectual Capital of University Libraries Based on Bontis Model and Its Relationship with Organizational Performance, which was a

descriptive-survey research of quantitative type with two questionnaires of intellectual capital and organizational performance of all university administrators and employees in public and private universities Libraries in Isfahan, Bandar Abbas and Yazd have been surveyed, showing that officials and trustees of universities and training centers with investment and management of intellectual capital can see the further improvement of organizational performance in libraries. Salmani et al. (2019) in the study of developing and explaining the model of intellectual capital maturity in Iranian universities concluded that maturity in intellectual capital is an important requirement for universities that can create the necessary ground to improve their performance.

Financial performance

The optimal performance of the economic and financial system in any entity and company is dependent on the existence a powerful and effective financial sector. In spite of the importance of industrial and manufacturing sectors, the service sector has become very important due to the large turnover and the interactive structure. According to statistics, 60% of the gross national product of industrial countries is related to the service sector. Among today's service organizations, each function has a certain impact factor in society. Among these organizations, given the fact that, on the eve of the century of knowledge and information, any kind of planning, decision-making and finally any vital activity without the application of communication and organizing it based on new information technologies in the field of information, it will be far from the realities of the international community. On the other hand, profits have several meanings, such as accounting profit, operating profit, economic profit, and so on. Measuring financial performance is the basis for many decisions such as directors' rewards, stock prices, stock risk, investment decisions, and many other cases.

Dynamic capabilities

Dynamic capabilities are presented in response to the static property of the source-driven theory. According to a source-orientation view, valuable and precious resources, scarce and rare, irrelevant and irreplaceable, are the source of competitive superiority. This view focuses on how organizations differ in terms of resources and not sufficiently focused on the environment and market changes. But in the condition of changing the external environment in order to establish a competitive superiority, the organization must renew its valuable resources. Dynamic capabilities for the organization make it possible to continuously affect these changes (Pisano, 2016). Many researchers have turned to dynamic capability approach and believe that this approach is more capable of dealing with dynamic and highly changing environments than a source-orientation approach. Dynamic capabilities are the efforts of the organization's managers to modify, integrate and recreate the skills, resources and external and internal competencies of the organization, which is required changing to interact with environments. Generally, dynamic capabilities are processes for building resources, utilizing resources, integrating resources and reconfiguring sources to adapt to environmental changes, resulting in sustainability and increase competitive advantage (Asiaei and Jusoh, 2015). Based on research literature and existing relationships between variables the conceptual model of research is presented as follows

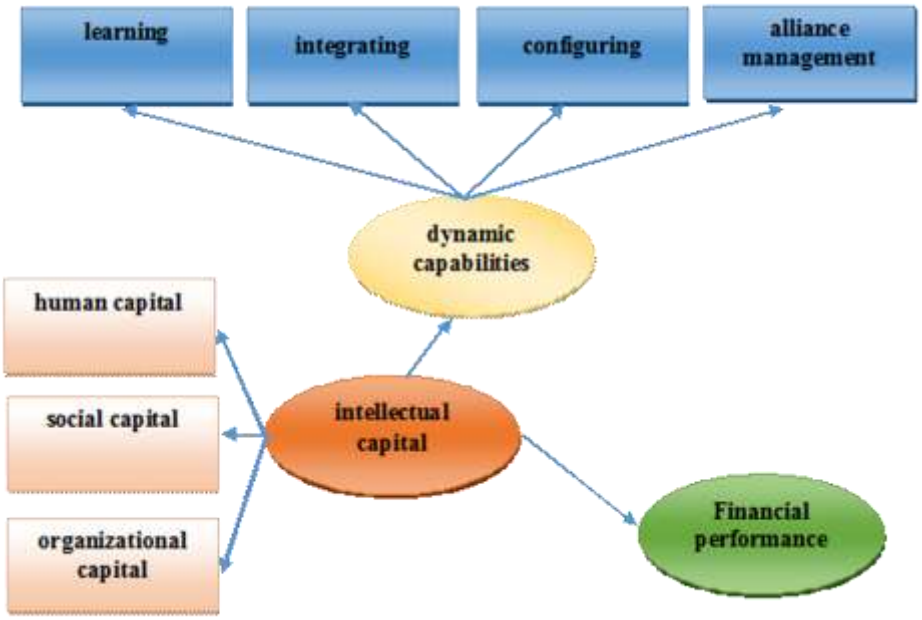

Figure 1- Theoretical-conceptual model of research

Research Methodology

The research method is descriptive (non-experimental) and correlation research is a type of structural equation, because in this research, relations between variables are investigated in the form of causal model.The statistical population consisted of Faculty members of Islamic Azad University of Fars provinc About 2,000 people and a sample of 384 people based on the Cochran formula at 95% confidence level. In order to analyze the data, the researcher was distributed and collected totally 384 questionnaires (50 questionnaires in the pre-test and the remainder in the post-test period of the questionnaire) and after the return, 384 questionnaires were used as the basis for statistical analysis.

Table 1- Results of descriptive statistics in terms of demographic characteristic

Percent	Frequency	Years of service	Percent	Frequency	Age
17.18	66	Under 10 years	25	96	Under 40 years
36.72	141	15-10	39.85	153	40-50
28.13	108	20-15	23.70	91	60-50
17.97	69	Over 20 years	11.45	44	Over 60 years
100	384	total		Gender	
			34.12	131	Men
			65.88	253	women

Measurement tool

In this research, a consolidated questionnaire of Singh-Rao (2016); Asiaei and Jusoh (2015); Wang et al., (2014); Mention & Bontis, (2013) was used to test the questions and to check their rejection or approved. The questionnaire consists of intellectual capital variables with three dimensions, dynamic capabilities with four dimensions, and financial performance with three dimensions. The questionnaire is based on the Likert scale, it means each section consists of seven options to strongly agree, and strongly disagrees.

Data analysis method

The present research is a correlation research using structural equation modeling methods. In the research, the modeling of structural equations modeling is used by the partial least squares to test the measurement pattern and research hypotheses. To analyze the data, SMARTPLS software was used to test the model.

Results

The factor loadings range of the structures and their significance is given in Table 2:

Table 2- Factor loading coefficients of items

Factor loading coefficients	Reconfiguring capabilities dimension		intellectual capital variable (independent variable)
0.841	Q23	0.594	items related to human capital dimension
0.684	Q24	0.584	Q1
0.421	Q25	0.487	Q2
0.485	Q26	0.395	Q3
0.484	alliance management capabilities dimension	0.397	Q4
0.614	Q27	0.412	Q5
0.744	Q28	0.584	items related to social capital dimension
0.656	Q29	0.695	Q6
0.914	Q30	0.845	Q7
0.622	Q31	0.622	Q8
0.491	Q32	0.411	Q9
0.468	Q33	0.399	Q10
0.487	Financial performance (dependent variable)	0.402	items related to organizational capital dimension
0.494	Q34	0.484	Q11
0.847	Q35	0.622	Q12
0.769	Q36	0.744	Q13
0.656	Q37	0.656	Q14
0.671	Q38	0.587	dynamic capabilities (intermediary variable)
		0.951	Learning capabilities dimension
		0.754	Q15
		0.687	Q16
		0.814	Q17
		0.785	Q18

	0.802	integration capabilities dimension
	0.666	Q19
	0.587	Q20
	0.595	Q21
	0.614	Q22

According to the obtained results in Table 2, the majority of factor loads were either higher than 0.4, or 0.4, or close to 0.4. Therefore, without removing the item load, the next step will be followed. Table 3 also shows the composite reliability and Cronbach's alpha coefficients of research structures:

Table 3- Cronbach's alpha coefficients and combined reliability

combined reliability coefficients	Cronbach alpha coefficients	variables
0.700	0.723	intellectual capital variable
0.699	0.702	human capital dimension
0.704	0.725	social capital dimension
0.700	0.701	organizational capital dimension
0.703	0.748	dynamic capabilities variable
0.723	0.789	learning capabilities dimension
0.748	0.805	integration capabilities dimension
0.714	0.738	reconfiguration capabilities dimension
0.709	0.712	alliance management capabilities dimension
0.754	0.730	financial performance variable

The overall reliability of the research was 0.73. According to Table 2, the Cronbach's alpha coefficients and combined reliability for most of the dimensions of the questionnaire were more than 0.7, which is acceptable in the whole.

Fitting structural model

First step: Z significant coefficients

This index is only used to enter the second step of the measurement model and lack of any other value at this step. But for the final stage (general model) it is important. Regarding the inappropriateness of the coefficients that are interred in the dimension of "social capital" and "organizational capital", which is lower than the one of 1.96, then the model will continue to be eliminated by the two dimensions.

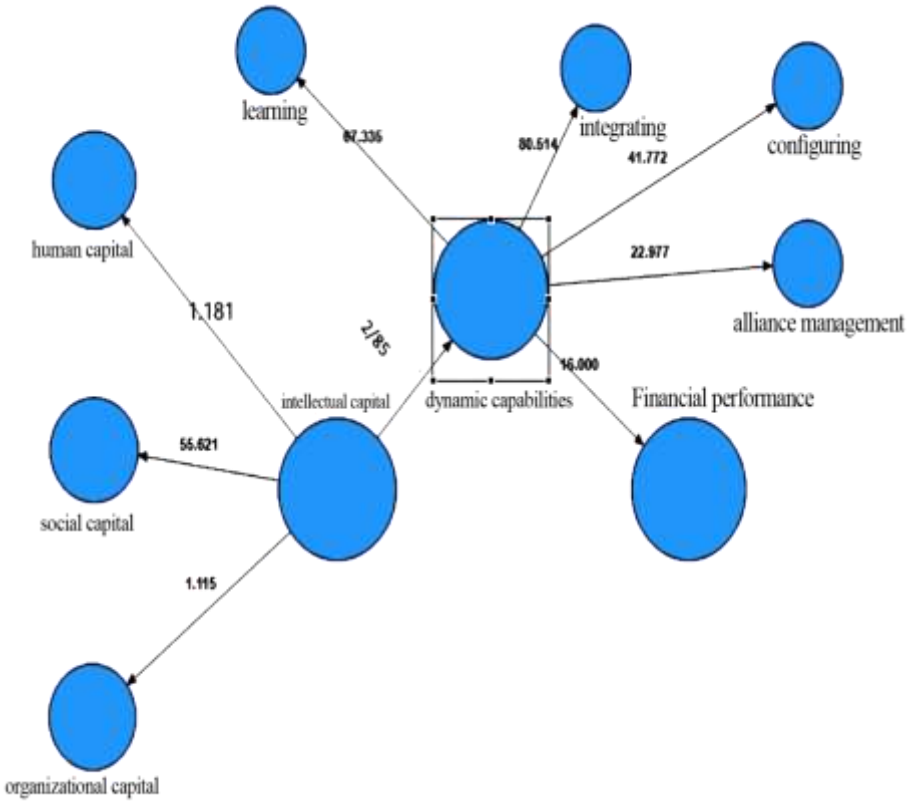

Chart 1- Model with Z meaningful coefficients

Second step: $\mathbf{R^2}$ ***index***

This index shows the effect of independent variable on all dependent variables. Three values of 0.19, 0.33 and 0.67 are considered as a criterion value for weak, moderate and strong values of R^2.

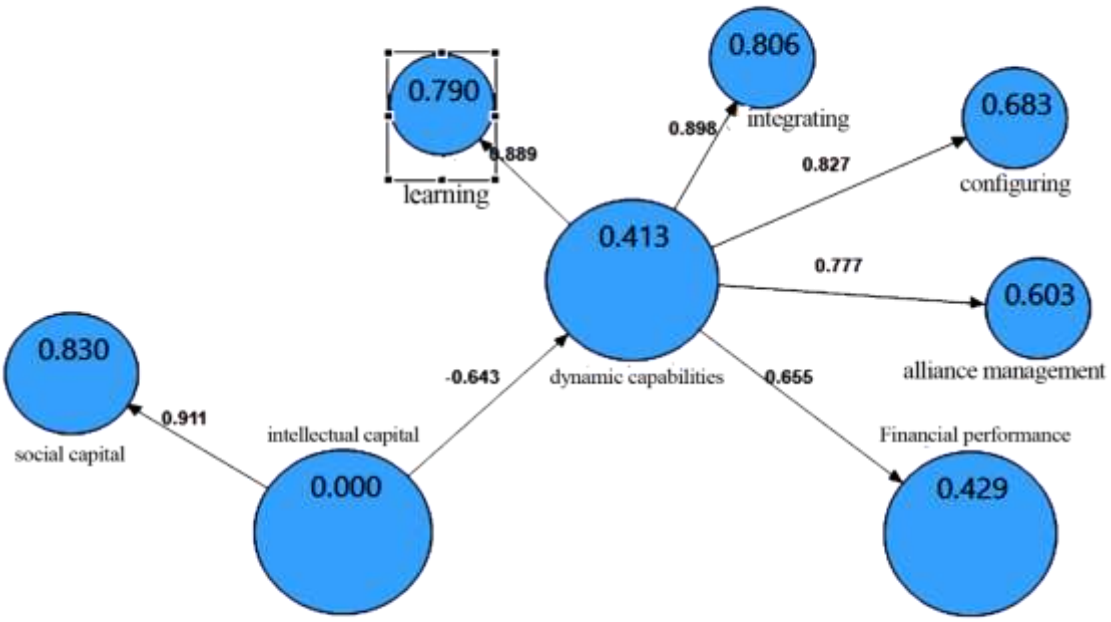

Chart 2- Calculation R^2 coefficients model

According to Figure 2, since the coefficients within the variables circle are above 0.33 and in most cases above 0. 67, this step continues without any changes.

Third step: effect size F2 $\mathbf{R^2}$

Since in the model entered in this study there is an interactive variable (dynamic capabilities), this index is calculated. This criterion determines the intensity of the relationship between the structures of the model and the values of 0.02, 0.15, and 0.35 respectively indicate the small, medium and large effect of a structure on another structure. The value of the coefficient R^2 for effect the independent variable on the dependent variable is equal to 0.409 and the same coefficient is obtained for the effect of the interactive variable of dynamic capabilities on financial performance is 0.486. Below, calculating the impact size for the impact of the independent variable on the dependent is equal to the following equation.

$\frac{0/650-0/409}{1-/650} = 0.688$

The calculation of impact size for effect the interactive variable on the dependent variable equals the following equation.

$\frac{0/650-0/486}{1-/650} = 0.468$

Given that the two-effecting numbers are higher than 0.35, it is quite acceptable.

Four step: Q2 index

This indicator measures the predictive power of the model, and if it is presented in three values of 0.02, 0.15 and 0.35, it shows the weak, average and strong predictive power of independent variables and its dimensions. Since this index is applicable to the model's intrinsic variables, therefore in table 4, only the dependent variable is calculated.

Table 4- Calculation of Q2 criteria

1-SSE/SSO	items
348.0	Financial performance

The numbers obtained from the output of the model in Table 4 show that the Q^2 criterion is above 0.35 and has a good Q^2 index.

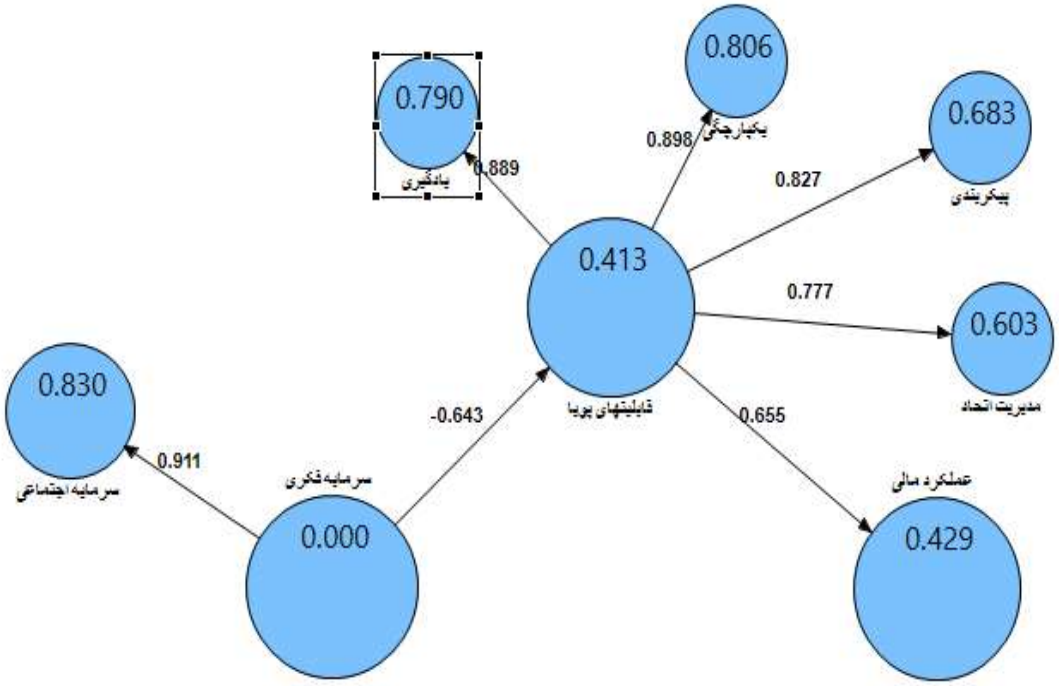

Chart 3- Final model of research (along with factor loading final coefficients)

Table 5. value of direct and indirect influencing and effective variables

Variable status	idirect effects	direct effects	effectiveness	categories
	6%	.....	9%	Social capital
	6%	.....	9%	Learning capability
	6%	.....	9%	Integration capability
	6%	.....	8%	Configuration capability
	5%	.....	8%	alliance management capability
approved	4%	8%	.....	Intellectual capital
approved	.....	6.5%	6%	Dynamic capability
	.....	.....	6.5 - 4%	Financial performance
approved	4%	.....	.....	Intellectual capital through dynamic capabilities

Discussion and conclusion

Considering that the z significant coefficients between intellectual capital and dynamic capabilities, as well as intellectual capital and financial performance were higher than 1.96, it was found that intellectual capital indirectly (through the interactive variable of dynamic capabilities) effects on financial performance of Islamic Azad University of Fars province. It was also found that intellectual capital directly affects the dynamic capabilities. The results of this hypothesis were compatible with the results of Abbasi and Goldi Sedghi (2010), Ghasemiyeh and Nematollahi (2015) which all emphasized the impact of intellectual capital on dynamic capabilities. It seems that the reason for approving this hypothesis is the direct impact of intellectual capital through the increasing and improvement of employee knowledge in the organization, which is always recognized as the basis of the organization and can affect the types of capabilities in the organization. The results also showed that dynamic capabilities directly affect the financial performance. The results of this hypothesis are compatible with the results of Singh-Rao (2016), which all emphasized the impact of dynamic capabilities on financial performance. The reason for approving this hypothesis seems to be the dramatic effects created through the dynamic capabilities in the organization. One of the important issues in this field can be the competitive advantages that are provided by these capabilities in the organization and can prefer financial institutions and financial organizations in the field of competitiveness in comparison to other organizations. On the other hand, dynamic capabilities help to reduce hidden and excessive costs and some of the costs that can be solved with cost management. The various dimensions of dynamic capabilities also confirmed the same issue. Therefore, university and higher education centers for improvement and human-resources organizations main focus is that intellectual capital plays an important role in the development of the country. Culture-oriented intellectual capital in addition to that, creates scientific and educational prosperity that can transform society and lead to development with the approach of improving culture. Acquiring intellectual capital, which is in line with Iranian Islamic culture, can create wealth and play an effective role in improving the financial situation and development of the country.

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