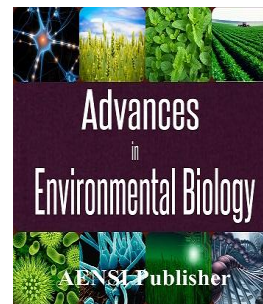




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## Investigation the Effects of Intellectual Capital Management on Organizational Performance in Mellat Bank Staff in Shiraz

<sup>1</sup>Abbas Sabet Maharlouei, <sup>2</sup>Seyed Mohsen Fahandezh Saadi, <sup>3</sup>Ghasem Alipoor, <sup>4</sup>Abedin Eftekhari

<sup>1</sup>Department of Management, Payame Noor University, I.R.Iran

<sup>2</sup>Department of Accounting, Islamic Azad University, I.R.Iran

<sup>3</sup>Department of Management, Islamic Azad University, I.R.Iran

<sup>4</sup>Department of Management, Shiraz University, I.R.Iran

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### ABSTRACT

**Objective:** The present study has been done with aim of finding the effects of intellectual capital management on organizational performance. **Method:** The method of present study is cross-correlation. The statistical population of this study is 650 of managers, employees of Mellat bank in Shiraz. Among this number, 285 were selected based on random stratified sampling and the instrument of collecting data is compilation of two standard questionnaires. 5 Likert questionnaire item was scored. For analysis the data descriptive statistics, factor analysis and structural equation, the software used LISREL 8.5 has been used. **Results:** The results of this study indicate intellectual capital management affect directly and significantly on performance.

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## INTRODUCTION

With the arrival of knowledge of economy, knowledge compared to other factors of production such as land and capital and ... is more preferred. And traditional factors of production are gradually lost its color, so in this economy; knowledge is the most important production factor of calculation. And this has been considered as the most important competitive advantage of organizations. One feature of this is its intangible, it means that it is intangible and untouchable. And valuation and measurement is really difficult because of this, it has been recognized as intangible assets of organization. Nowadays in contrary to past, the main portion of asset in organization are intangible. In today's knowledge-based economy, success is dependent on the ability to manage intangible assets. With the advent of the knowledge-based economy, accessing to new versions of the assets of our organization is required. In general, the assets will be divided into two main categories:

1. Tangible assets: include physical and mental assets which are reflected in companies balance sheet. These assets are used under traditional economic principles and by its overusing, their value will drop.

2. Intangible Assets: The assets are divided into two main categories:

A: Intangible assets that are protected under the law are known as the intellectual property; these assets include patents and copyrights, patents and trademarks. Only some of these are reflected in the balance sheet.

B: Other intangible assets, including the knowledge and intellectual capital operates under the principles of frequency economy. In other words, using them more will not diminish their value and are not usually reflected in the balance sheet [6]. A review of the literature on economic development this result has been obtained that only factors of good production may not guarantee the success in achieving the goals of the organizations and the existence of other assets as intellectual capital are necessary to accelerate the achievement of objectives by exerting catalytic role. In the knowledge economy, knowledge and skilled workforce has the highest portion in wealth creation and this means that human resources are the greatest wealth of any country. Although the traditional factors of production, i.e. labor, capital, raw materials and entrepreneurship remains, knowledge is regarded the key promoter to driving growth, creating new value and create the basis for maintaining the

**Corresponding Author:** Abbas Sabet Maharlouei, Department of Management, Payame Noor University, I.R. Iran.

Contact: 00989106637989

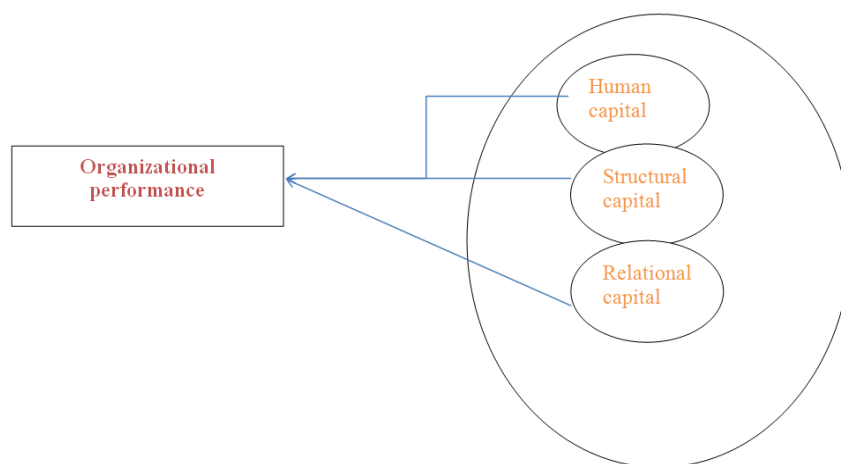
E-mail: [asabetmaharlouei@yahoo.com](mailto:asabetmaharlouei@yahoo.com)

competitive position. This study evaluates the role of intellectual capital management on organizational performance exploitation of oil and gas companies operating in the oil-rich south. And strategies that lead to the promotion of intellectual and organizational performance are identified and presented.

*Need for research:*

By knowing the nature, components, models and methods of assessment, measurement and evaluation of intellectual capital, preparing layouts and optimization, control and supervision of the company is possible. By designing the concept of the value of intellectual capital may be argued that such a large part of the difference between market value and book value of companies and their success rate will be explained by the value of intellectual capital. Achieving the organizational goals and achieving success and improving the performance are the primary purposes of any association or organization. Actually, responses that organizations show to today's business environment should be relied on intangible source which has been paid less. Therefore, examining and investigation of those factors which can be effective in performance improvement and acceleration in achieving the goals are important. The management of intellectual management is an interesting topic that draws the researchers' attention in recent decades. The conducted study in this field has often been done in foreign countries. Performing this study and operating oil and gas companies in the oil-rich south can be meaningful in economy and industry of the country, can help to identify factors contributing to improved organizational performance.

According to the given information, the model and research hypotheses are presented.



The conceptual model of research

*Research hypothesis:*

-the main hypothesis: Management of intellectual capital has a significant impact on organizational performance.

Sub-hypothesis

- Human Capital Management has a significant impact on organizational performance.
- Management of structural capital has a significant impact on organizational performance.
- Relational capital management has a significant impact on organizational performance.

*Methodology:*

Since the present study focused the performance of staff who are practical in nature, and its results are specific and tangible, so based on the objective the present study is applied research which at last help to decisions, policies and planning of managers and organizations. The method and nature of this research is descriptive one because it tends to recognize the precise elements and related variables with organizational performance and determining their relations. Also, the type of this study is correlation because it deals with the relations among variables. The statistical population of this study includes all staff and managers of Mellat bank in Shiraz city that the size of population equals 650.

The method of sampling is random stratified sampling. The size of sample has been determined by Conchran method that is set to 285. Due to type of the research, the extent of statistical population, and complexity of statistical sample and quick access of respondents and evaluation and measurement of variables, questionnaires has been considered the best method of data collection. The questionnaire for assessing and measuring 4 Structure of commitment, human and intellectual capital, structural, relational and organizational performance is a combination of 2 questionnaires. The type of questions is close ones.

To measure the variable of performance and intellectual capital (human, structural, communication) Eunice questionnaires is applied. Regarding the fact that the questionnaires are standard and a relative appropriate correlation can be found among the variables, validity of the questionnaire has repeatedly been confirmed by various researchers. To determine the validity of the measurement instruments and the extent to which these instrument measure the considered variables in the present (the variables in the model) the content validity has been used. Since the questionnaires used in this research have been repeatedly by different researchers and based on the advisors' and consultants' judgment, forming questions right tool to measure the variables which researchers are interested in it. So we can confidently confirm the high content validity.

For determining the reliability of measurement instrument that is technical features of measurement and the fact that the used instrument in the same situations to which extent the same results have been obtained, Cronbach's alpha has been used that its results have been presented in this table.

**Table 1:** Cronbach's alpha values obtained for the variables.

Cronbach's alpha	Components
0/86	Organizational performance
0/73	Human capital Management
0/78	Intellectual capital Management
0/89	relational capital Management

As the results have been presented in above table, it can be said that the the instrument tool has appropriate reliability.

In this study, descriptive and inferential methods were used to analyze the data.

*Inferential statistics are:*

*Structural equation model:*

According to the goal and analysis of this study and analyzes performed on this matrix is divided into two main categories: factor analysis and structural equation model(SEM). Both of these analyzes can be done through LISREL software.

*Findings:*

Descriptive statistics of variables and parameters of this research including mean, standard deviation, skew and stretch are provided in table number2. As it has been observed, all variables have normal distribution. Since all the numbers of tilt and strain are between -1 to +1, path analysis can be used to test the hypothesis.

**Table 2:** Descriptive statistical analysis of research variables.

tension	Tilt	Standard deviation	mean	Component	Variable
0/52	-0/46	2/46	33/71	Customers' proportion	Relational capital
-0/43	0/55	3/29	46/27	Customers' satisfaction	
0/6	-0/31	2/17	28/76	Knowledge management	Structural capital
0/47	0/50	2/05	22/69	Cultural performance	
0/88	0/73	1/38	16/13	Performance of organizational process	
0/72	-0/58	3/24	66/86	Abilities and skills	Human capital
-0/39	0/66	1/98	15/58	Employee satisfaction	
0/47	0/58	3/28	57/25	Organizational performance	Organizational performance

Table 3 shows the correlation matrix of variables that indicate the relationship between the two variables together. As it has been observed, among the components of intellectual capital management, efficiency of organizational performance has the highest correlation coefficient (0/61) with organizational performance criterion variables; after this respectively other variables of intellectual management (0/54), cultural organization(0/52), skills and abilities(0/47), customers' satisfaction(0/46), customers' proportion(0/41), employees satisfaction(0/36) has the highest to lowest correlation with organizational performance. It is worth noting that, the correlation coefficients of all variables with criterion variable are significant and positive at level 0.01.

Table number 3 indicates the matrix correlation among the main variables of this research. As has been observed, among the intellectual capital management, human capital has the highest correlation coefficient (0/62) with organizational performance; after this respectively the structural capital (0/58) and relational capital(0.55) has the highest to the lowest correlation with organizational performance. Note that the correlation coefficients for all aspects of intellectual capital management with organizational performance are positive and significant at level 01/0.

**Table 3:** The correlation matrix of research variables.

8	7	6	5	4	3	2	1	variables
						-	-	-1customers' proportion
						-	0/31**	-2customers' satisfaction
					-	0/10	0/11	-3knowledge management
			-	0/34**	0/21**	0/18*	0/18*	-4cultural organization
			-	0/37**	0/36**	0/17*	0/09	-5efficiency of organizational performance
		-	0/30**	0/32**	0/29**	0/14	0/13	-6skills and abilities
	-	0/33**	0/39**	0/38**	0/23**	0/18*	0/17*	-7customers' satisfaction
-	0/36**	0/47**	0/61**	0/52**	0/54**	0/46**	0/41**	6- organizational performance

\*\* 0/01 \* P< 0/05 P<

**Table 4:** The correlation matrix of research variables dimension.

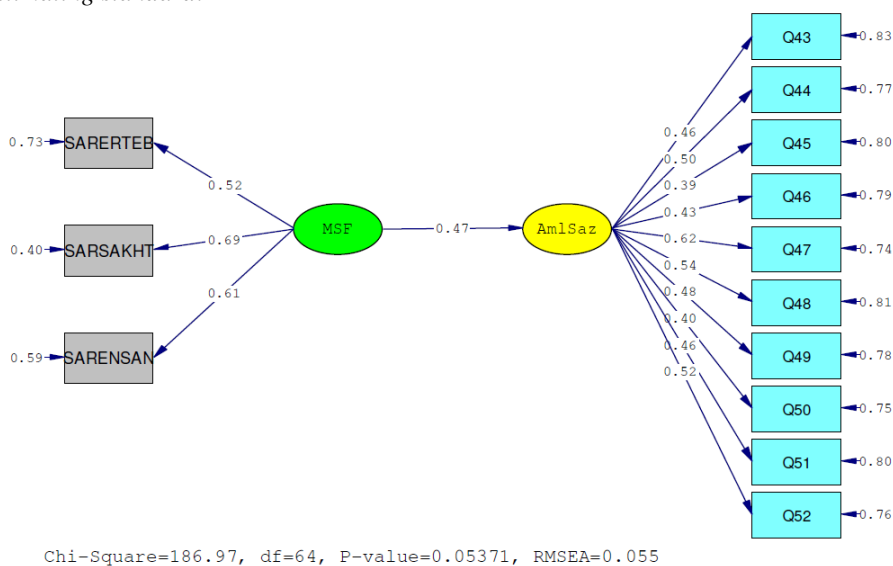
4	3	2	1	Variables
			-	-1relational capital
		-	0/33**	-2structural capital
	-	0/49**	0/41**	-3human capital
-	0/62**	0/58**	0/55**	-4organizational performance

\*\* 0/01 \* P< 0/05 P<

*The hypothesis of structural method:*

For testing the research hypothesis, this model has been investigated. Thus, in continue, each of research hypotheses have been proposed based on structural model and then will be answered. It should be noted that in this study the intellectual capital management (relational capital, structural capital and human capital) as an exogenous variable and organizational performance as endogenous variables were entered into the analysis. In addition, the research hypotheses will be tested according to the structural model of order two.

*A: model in estimating standard:*



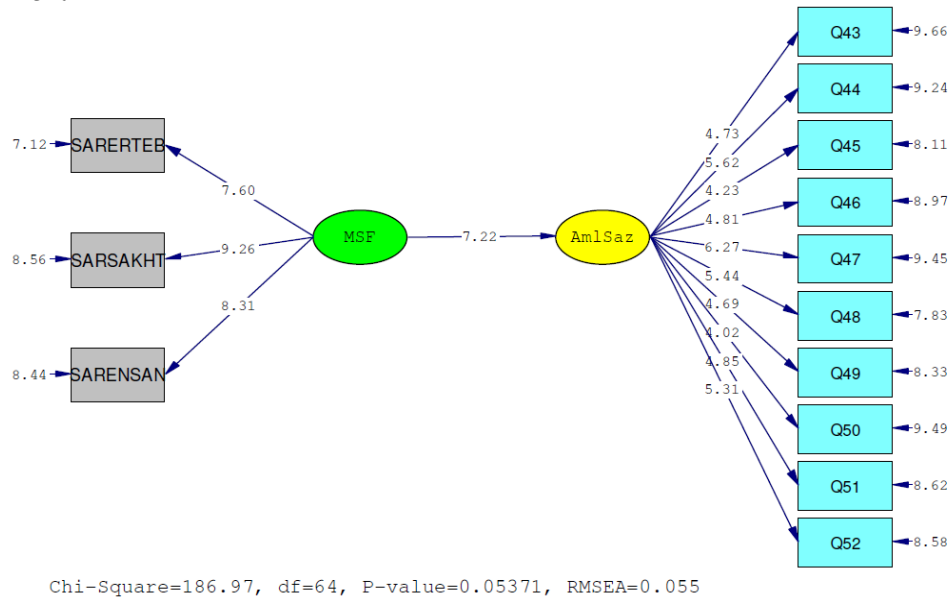
**Fig. 1:** Structural model of main research variables in standard estimation.

**Table 5:** Fit indices of path analysis model in main research variables.

Estimation	Fit indices
2/92	(/ df <sup>2</sup> x)
0/055	RMSEA
0/97	NFI
0/97	NNFI
0/95	GFI
0/96	AGFI

Fit indices show that the overall research model has a good fit to the data research. Ratio chi square to degree of freedom is less than 3 and value of RMESA is lower than 0/08. The indexes of NFI, NNFI, GFI and AGFI are all over the 90/0 and therefore are acceptable and desirable. Generally it can be said that the final research model is appropriate and desirable. As it has been observed, there is a correlation between intellectual capital management and organizational performance (0/47).

*B: model in significant model*



**Fig. 2:** The structural model of main research variables in significant numbers.

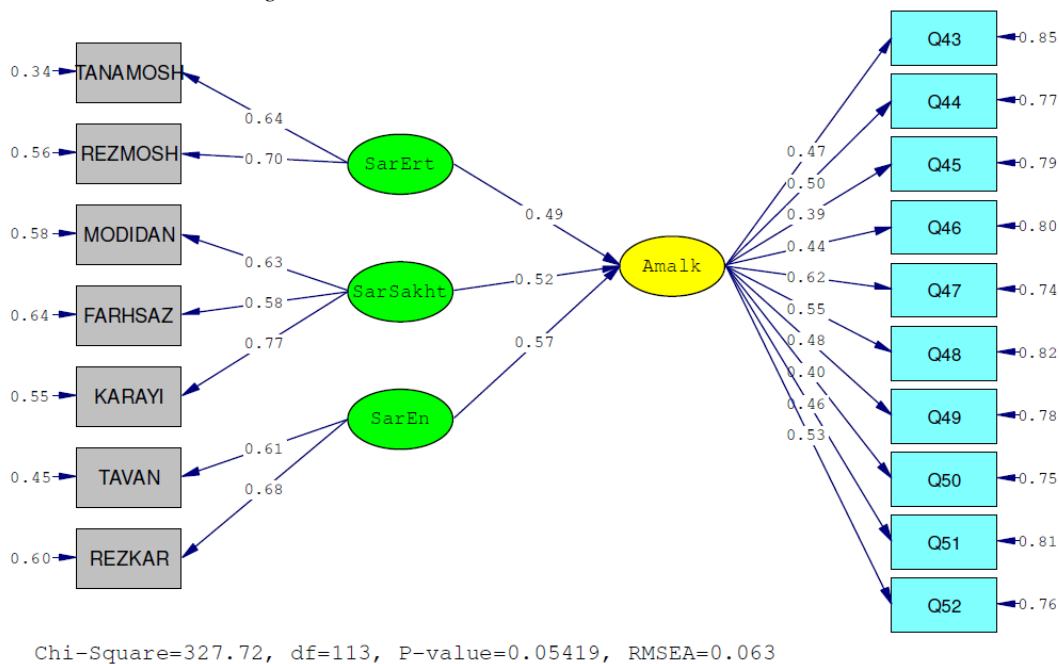
As it has been observed, all significant numbers are related with parameters of significant model; because their significant number is above 1/96.

The main research hypothesis: intellectual capital management affects organizational performance.

As it has been observed, according to Standard model, the intellectual capital management have a positive and significant impact on organizational performance which is equal to 0/47(significant number is 7/22). This means that for one unit of increase in intellectual capital management, 0/47 percent increase can be found in organizational performance. Because a significant number of coefficients are larger than 96/1, the main research hypothesis has been confirmed.

We will continue to investigate other research hypotheses derived from the analysis of the structural model based on the dimensions and components of research variables. Thus, first the mentioned model is presented and then its related hypothesis will be discussed.

*A: the model in estimating the model*



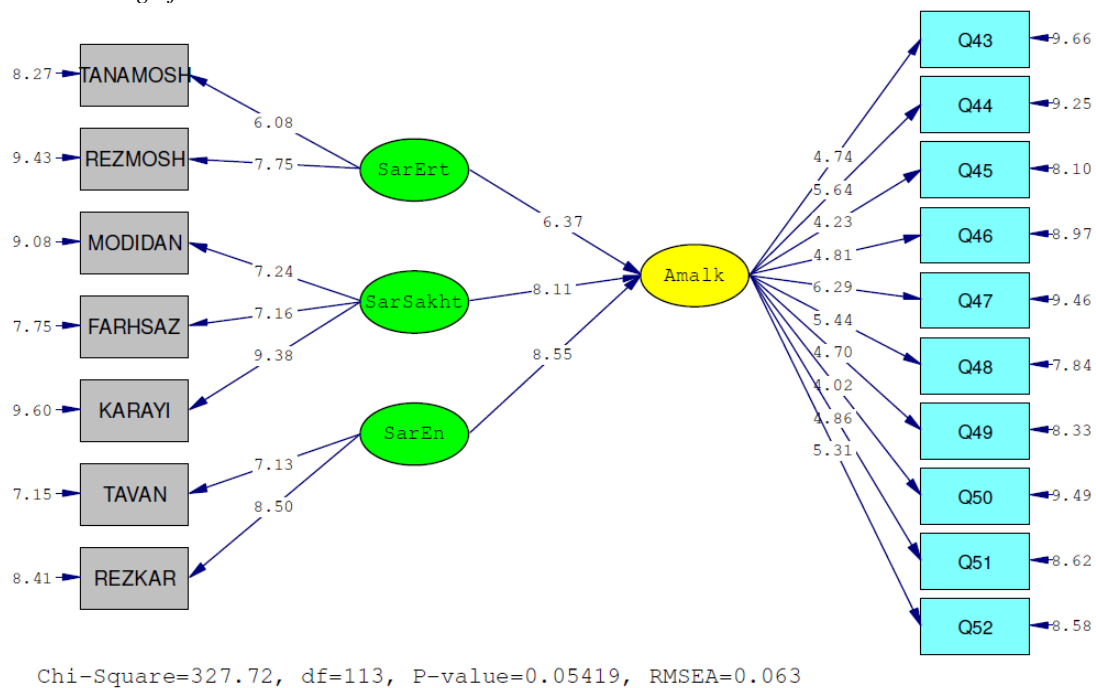
**Fig. 3:** The structural model of dimension and variable components in estimating standard.

**Table 6:** The fit indices the structural model.

estimation	Fit indices
2/90	( $\chi^2/df$ )
0/063	RMSEA
0/96	NFI
0/95	NNFI
0/93	GFI
0/93	AGFI

The fit indices of research sub-hypothesis show that this model has appropriate fit research data; the ratio chi-square to degree of freedom is less than 3 and the RMSEA value is less than 0/08. Moreover, all of the indices of NFI, NNFI, GFI, AGFI are higher than 0/95 so it is acceptable and desirable. Generally it can be said that the fit of research sub-hypothesis is also suitable and desirable. As it can be observed, the correlation between relational capital and organizational performance is (0/49), and the correlation between structural capital and organizational performance is (0/52), and between human capital and organizational performance is (0/57). So among the dimensions of intellectual capital management, human capital has the highest correlation between organizational performances. Among the components of intellectual capital management dimensions, the highest correlation can be found between structural capital and efficiency of organizational process (0/77).

*B: the model in significant numbers:*

**Fig. 4:** The structural model of dimensions, components of research variables in the case of significant numbers.

As it has been observed, all the significant numbers are related to the parameters of significant model are significant because the significant numbers are above 1/96; except the significance level of 7<sup>th</sup> question with electronic management relating with customers( $t=1/52$ ).

The sub-hypothesis 1: human capital management affects the organizational performance.

As it has been observed, according the standard model, the human capital management has a positive and significant effect on organizational performance which is equal 0/57.(significant number is 8/55). And this means that for one unit of increase in human capital, 0/57 percent increase can be observed in organizational performance. Since the mentioned coefficient of significant number is larger than 1/96, the mentioned hypothesis is confirmed.

Sub-hypothesis number2: the structural capital management affects the organizational performance.

As it has been observed, according to standard model, the structural capital management has a positive and significant effect on organizational performance which is equal 0/52 (the significant number is 8/11). And this means that for one unit of increase in structural capital, 0/52 percents of increase can be observed in organizational performance. Because the mentioned significant number is larger than 1/96, the mentioned hypothesis is confirmed.

Sub-hypothesis: relational capital management affects organizational performance.

As it has been observed, according to standard model, the relational capital management has a positive and significant effect on organizational performance which is equal 0/49(the significant number is 6/37). And this means that for one unit of increase in relational capital, 0/49percents of increase can be observed in organizational performance. Because the mentioned significant number is larger than 1/96, the mentioned hypothesis is confirmed.

#### *8-Discussion:*

The aim of present study is investigation the effect of intellectual capital on organizational performance that intellectual capital management in the form of (human, structural, relational) on organizational performance by using the structural equation. Afterwards, the results obtained from the finding analysis will be discussed. Based on the results of the research, 258 people (90/5 percent) of respondents are male and 27 people (9/5 percent) are female. Working experience of 32 of respondents (11/2 percents) is lower than 5 years, 83 people (29/2 percents) between 5 to 10 years, 95 people (33/3 percents) between 10 to 20 years, 75 people (26/3 percents) is above 20 years. 20 people (7 percents) are associate of arts 160 people (56/1 percents) are bachelor and 70 respondents(24/6 percents) has master and higher educational level.

Indices used in this study represent a simple list of stocks (inventories) and intellectual capital flows. Regular following of these indices help organizations to use different strategies to achieve, to build and operate the intellectual capital. And this has provided the managers with an interesting point for responding this main question. What level of resources is the organization committed to activate and enhance the intellectual capital? Over time, a high index shows changes in intellectual capital reserves during. They show how much and in what direction intellectual capital is changing, which is useful for determining the level of intellectual capital in an organization.

They also show the weaknesses and threatening which the organizations face. In addition, the measurement of intellectual capital stocks and flows in one direction through the introduction of a row and put the stocks and flows, facilitates knowledge management processes. The reported approaches in measurement of intellectual capital can help officialized standard measures for benchmarking purposes. Moreover, it encourages the organization to make private measures which can be used in creating the criteria of appropriate intellectual capital for their own organization based on their purposes, strategies and perspectives.

At last, the measurement of intellectual capital assists the manager to comprehend the competitive situation of organization. The effectiveness of management process of intellectual capital management for growth and intellectual capital maintenance depends on their accordance with organizational requirements. It seems, one key criteria for effectiveness of intellectual capital management processes is the accordance with organizational epistemology [4]. George Von Krug and his colleagues introduced the concept of epistemology organization in a way that organizations believed how to develop knowledge in the organization.

Nonaka and colleagues concluded that despite the growing importance of intellectual capital is recognized as a critical source of competitive advantage, there is a little understanding of how organizations actually actively manage intellectual capital by creating knowledge. Knowledge creation requires a shared environment, shared environment that can be physical, virtual or mental. Unlike the information the knowledge cannot be separated from its environment. This indicates that the practices of knowledge management in organizations must be according by creating knowledge requirements for individuals or groups of individuals who are involved in the creation of knowledge. If organizations fail to harmonize procedures and requirements, knowledge management systems may be neglected and will be created outside of the organization's knowledge management system [3]. Another important finding is that senior managers should have frequent interaction between human capital, structure and relational for an organization in order to fully use the intellectual and human base. Separate stores knowledge which can be found in the mind of the employee and never been coded with organizational knowledge, does not have a positive effect on business performance. In other words, this is not enough for an organization to find the most intelligent people in the work place and give promotion. An organization should also support intelligent people and the share of foreign capital in humanity through organizational learning and develop information systems [8].

Using an intellectual capital management instrument, measures can be selected and interventions of intangible assets can be identified to provide a framework for benchmarking and improving current practice. This further creates an opportunity to assess whether intangible assets are sufficient for competitive advantage, creating future business and have a survival benefit or not. This is achieved by optimizing the performance measurement tools, such as Balanced Scorecard will be possible, which is able to quantify the value that their intangible assets created.

Although there is a great deal of literature on intellectual capital, most of it is focused on the developed world and is published in the UK. One of the findings of this research is that this deficit can be compensating by beginning the intellectual capital discussion which is disregarded in the world not developing.

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