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## **THE ROLE OF MANAGEMENT OF INTELLECTUAL ASSETS ON OPTIMIZATION OF FINANCIAL PERFORMANCE AND EFFICIENCY OF ORGANIZATIONS WITH KNOWLEDGE MANAGEMENT APPROACH**

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### **ABSTRACT**

The aim of this research was to determine the impact of intellectual capital and knowledge management to improve efficiency and financial performance in University of Urmia. Stratified random and sampling statistically size achieved by Cochran method ( $N=120$ ;  $n=92$ ). Data Collection tool were standardized questionnaire that has acceptable reliability and validity and confirmed by the experts. Analyzing method and testing of research hypotheses using SPSS and Smart.pls soft ware structural equation modeling. The results show that the intellectual capital explains directly about 46% of changes in financial performance. Also, 30 percent of changes in financial performance have explained indirectly by the intellectual capital through mediator of knowledge management. Other findings explain 75% of variation in financial performance had done by knowledge management. The findings showed that 89 percent of the intellectual capital revealed directly the changes in knowledge management. Thus, 95% of research hypotheses were confirmed.

**Keywords:** *Knowledge Management, Intellectual Capital, Improve Financial Performance*

### **INTRODUCTION**

In the era of knowledge and information organizations are faced with variable and complex environments which are not easily anticipated.

In this regard organizations are inevitable to comply with these environmental and inter organizational changes and try to optimize and promote their financial performance, management style, leadership style, employees' empowerment and investing in infrastructures such as information technology in order to be successful in their competition with their competitors. Also universities are included in this rule as effective and dynamic organizations. They should be prepared for any type of change and they also should manifest the best performance in terms of promotion and optimization of financial performance with emphasis on up to date knowledge, intellectual assets and through performance of knowledge management. Nowadays there is a new model of asset or property introduced in context of organizations. In general, today's assets of organizations are categorized into two distinct categories of tangible and intangible assets and intangible assets are known as intellectual assets or properties.

Evaluation of performance of organizations has also moved towards evaluation of intellectual assets and these assets are not registered in books. The most basic assets of an organization are its intellectual assets which include three components of humane assets, structural assets and customer assets (Ahmadian and Ghorbani, 2014). Intellectual assets are considered as instruments which are used for determination of the value of organizations and firms (Pitang *et al.*, 2007).

These assets are not reflected in balance sheets and also balance sheets are not able to impose any reduction on their value (Tiles *et al.*, 2000). In the era of knowledge it has a high competitive advantage (Si, 2002). In present knowledge based communities the importance of efficiency of intellectual assets is applied (Rostami and Seraji, 2005). Increased and varied demands and needs of customers on one hand and on the other hand the shortage of economic resources have put organizations and firms under the pressure of increased costs and increased value that's provided for the customers. On this basis, organizations are looking for ways to differentiate themselves from their competitors through providing high quality services, increased flexibility and rapid and innovative responsiveness and through this they

### **Research Article**

attempt to obtain higher levels efficiency and effectiveness in all aspects especially for financial performance (Ghorbani *et al.*, 2012).

Effective elements on organizations are divided into two groups of inter organizational (social capitals, intellectual assets, organizational culture, structure, technology, strategies and knowledge management) and external organizational (economic elements, social elements, political elements, cultural elements and legal elements). The role of intellectual assets and knowledge management are considered as the most important inter organizational elements. Intellectual assets are considered as sets of knowledge assets which belong to a specific organization or firm and these assets lead to increased value for capitals of organization and optimize the status of the organization in comparison to its competitors (Mere, 2004). In other words intellectual properties include processes, privacy policy, skills of employees, information regarding customers, providers and shareholders. These assets and especially humane assets play a highly determining and defining role in organizational performance especially for organization's financial performance and efficiency. Organization's financial performance is the resultant of executive processes and realization of organizational goals. In other words, organization's financial performance is the realization of goals of financial discipline, costs, financial flexibility, speed, capability and financial trust. Organizations which have appropriate and sound financial performances are more secured in terms of perspectives, attraction of trust, strategic thinking and other contexts which are related to realization of organization's general and total goals. On the other hand, knowledge management is another effective and influential element on this performance. Knowledge and intellectual properties (assets) are considered as the most important and the main element and capital in today's era of information. If they are managed in proper ways, the organization will obtain a high level of competitive advantage and today's successful organizations are the ones which have created or obtained the new knowledge and used it for optimization of their activities in different ways. Crawford has provided two definitions for knowledge management: knowledge management as a purpose and knowledge management as a process. In terms of purpose, he has put most of his emphasis on knowledge exchange but in terms of process it is tried to provide access to implied knowledge (Doostar *et al.*, 2013). Knowledge management includes an orbital process including production and creation of knowledge and it means that when people are after finding ways for performance of tasks, they are in fact creating knowledge and in terms of lack of ability within the organization, it is injected from external organizational environments. Accumulation of knowledge is synonym to storage of knowledge in its own raw form in database. Refinement of knowledge means that the new knowledge should be situated in a context which is easily accessible so that a proper use of it could be made and in this stage, the implied knowledge and explicit knowledge are refined or subjected to refinery. Knowledge management and handling knowledge is defined as keeping up to date knowledge and distribution of knowledge means to make knowledge accessible for people who require it with a proper format (Boss, 2004). Through the management of knowledge and transferring it from one person to another, successful organizations empower their employees and in addition to increasing the knowledge of employees, they also make well uses of employees' experiences which is resulted in optimized total performance of the organization especially financial performance in terms of contexts of cost management, reduction of financial risks and prohibiting waste of capital and increased added value of assets. Therefore, management of knowledge and intellectual assets are considered as two valuable and defining capitals in organizations and play a basic and fundamental role in optimization of organizations' total performance especially in terms of financial performance and efficiency. The main question in this research is that if intellectual assets are effective in optimization of financial efficiency and performance of Urmia's University with moderation of knowledge management? Are intellectual assets and knowledge management independently effective on financial performance?

### **MATERIALS AND METHODS**

The method of this research is descriptive-survey. The population of this research project includes the entire employees and staff of Urmia's University (employees of financial and bureaucratic units) as 120 individuals. The sample size was determined as 92 individuals through the application of Cochran's

**Research Article**

formula. The sampling method that was applied in this research was random stratified sampling with considering for shares of each group. In this research the data collection instrument was questionnaires (questionnaire of knowledge management with 25 items, questionnaire of intellectual assets with 48 items and the questionnaire of financial performance with 21 items).

Validity of these questionnaires was determined and approved by a number of experts and scholars in the context of subject matter. Also reliabilities were approved through application of Cronbach’s alpha method analyses of data at the level of illative statistics are used for determining the extent of effectiveness of the exogenous independent variable (intellectual assets and knowledge management) on the dependent variable of financial performance and for this purpose the model of structural equations was used.

**RESULTS AND DISCUSSION**

**Results**

In this section of our project we have tried to test research hypotheses through the application of Smartpls 21. Software. Beforehand to testing research hypotheses, first we should ensure the technical features of our measurement instruments.

For doing so, in the software of Smartpls the criterions such as convergent and divergent validity, integrated reliability, Cronbach’s alpha, the average common variance between structures, R-squares, criterion of size of effect, The Aston and Geysler criterion and the criterion of fitness of validity or GoF and the results of performed analyses are as follows.

*Fitness of Measurement Models*

Reliability criterion, Cronbach’s alpha, extracted average and variance and divergent validity

**Table 1: Results of Divergent Validity**

Intellectual capital	Financial management	Knowledge management	
		0/89	Knowledge management
	0/96	0/74	Financial performance
0/92	0/75	0/89	Intellectual capital

The outcome of table (1) indicates that the value of average square of extracted variance or the AVE of the structure of intellectual capitals, knowledge management and financial management are larger than the value of correlation of other three structures and with respect to aforementioned results it can be stated that in this model, structures have more interactions with their indices rather than indices of other structures. In other words, the divergent validity of the model of present research is appropriate and adequate.

*Fitness of Structural Model*

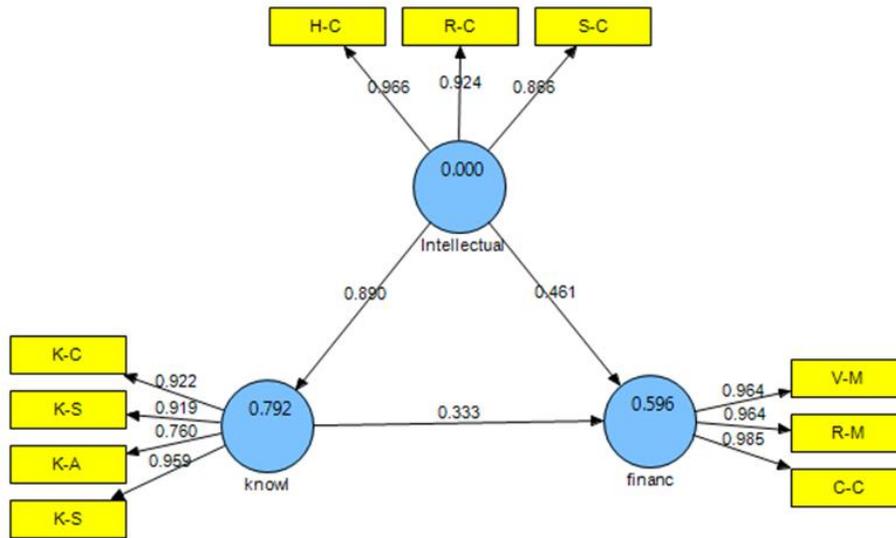
The structural model is concerned with discussion of relations between concealed variables. The criterions that are used for investigation of structural model of this research project include the values of R2, the criterion of size of effect of F2 and the criterion of Q2.

*R-squares or R2 Criterion*

The purpose behind the application of R2 criterion is to show if the independent variable is effective and influential on the dependent variable or not. The considered values for this criterion are 0.19; 0.33 and 0.67. These values indicate respectively weak, average and strong values. In this research project, the value of R2 is equal to 0.79 and 0.60 which signifies the appropriateness of fitness of the structural model. It is noteworthy to state that these values are only calculated for latent endogenous variables and for exogenous latent variables they are equal to zero.

**Research Article**

Diagram 1, R2 Values for Fitness of Structural Model



**Effects Size Criterion or F2**

This criterion is concerned with determining the relation between structures of the model and for analysis takes help from R-squares (Cohen, 1988). The values which are proposed for this criterion by Cohen are 0.02; 0.15 and 0.35 which are respectively considered as signs of low effect, medium effect and strong effects. In this research project the value of F2 was equal to 0.16 and 0.15 and therefore it can be concluded that size of effect of this criterion is medium.

**The Q2 or Aston-Geyser Criterion**

This criterion defines the model’s anticipatory power and is developed by Aston and Geyser. Adequate values for this criterion are respectively equal to 0.02; 0.15 and 0.35 which are related to weak, medium and strong anticipation powers. The calculated values of this criterion for this research project were 0.55 and 0.63 respectively for knowledge management and intellectual capital. With respected to adequate values of this criterion it can be said that the values are larger than adequate level and therefore the anticipation power of this model is highly strong and also the appropriate fitness of structural model is approved.

**Table 2: Aston-Geyser Values**

Total	SSO	SSE	1-SSE/SSO
Financial performance	276.000000	123.501406	0.552531
Knowledge management	368.000000	136.361757	0.629452

**Fitness of Total Model with GoF Criterion**

This model was proposed and developed by Tenenhouse *et al.*, (2004) which is used for total fitness of the model and it means that if the index values of 0.01; 0.25 and 0.36 are considered as respectively weak, medium and strong values it turns out if the model is featured with appropriate fitness or not. The calculated value for this criterion is equal to 0.77 which is obtained via average square of common values of three variables knowledge management, financial performance and intellectual capital multiplied by average R2. With respect to calculated value of 0.77 for the present model and by comparing the model with three criterions it can be stated that the total fitness of research model is strong.

**Discussion and Conclusion**

Results indicated that the route coefficient between intellectual capitals and financial performance is equal to 2.77 which are significant at its significance level with 95% of confidence. In this regard we can say that intellectual capitals impose a positive and direct impact on financial performance. On the other

### **Research Article**

hand the route coefficient between intellectual capitals and financial performance with moderation of knowledge management I equal to 2.176 and 34.383 which is also significant with 95% confidence and is larger than 1.96 therefore we conclude that its significant, meaningful and positive. Results indicated that standardized coefficients of route between intellectual capitals and financial performance are equal to 0.46 in a direct way. Therefore it is concluded that intellectual capitals can anticipate 46 percent of changes in financial performance. On the other hand the effect of intellectual capitals on financial performance through the moderation of knowledge management is equal to 30 percent. Therefore the indirect effect of intellectual capitals on financial performance through moderation of knowledge management is also positive and meaningful. Therefore research hypotheses are accepted under a confidence level of 95%. Intellectual capitals are in fact those unregistered capitals in financial accounts of every organization which are nowadays extremely under the surveillance of managers and scholars. These capitals include humane capitals or in other words employees' implied knowledge and experiences which are not mentioned in financial balance sheets but hold the highest values for the organization and if they are integrated with an appropriate management, they could be considered as an important and significant competitive advantage. On the other hand, relational capitals or in other words customers are other organizations' basic and fundamental capitals and manner of treating customers and obtaining their satisfaction as well as forming a constructive relation and receiving proper feedbacks can guarantee the success of the organization.

Structural capitals are organization's existing facilities and equipment which provide the contexts for optimized production of goods and services. This valuable and critical property of organizations in addition to knowledge management within the structure of organizations can lead to empowerment of employees and increase their levels of effectiveness and efficiency and finally through this we can see an improved total financial performance of the organization. Therefore the findings of this research indicated that intellectual capitals can impose positive effects on organizations' financial performance in both direct and indirect ways. Seyed *et al.*, (2013) in their researches found out that intellectual capitals have a significant effect on organizational performance. In this regard, humane capital has an undesirable status. Fetros and beige have also found out that there exists a significant and meaningful relation between intellectual capitals and organizational performance. Chen, Chang and Huang have also stated that an organization's intellectual capitals impose a positive effect on its financial performance and market value (Chen, 2006). Huang and Leo have also evaluated the relation between intellectual capitals and technological capitals and organizations' financial performance (Husso, 2008). Bontis *et al.*, (2000) found out that there exists a mutual relation between components of intellectual capital and these capitals also impose a moderated effect on business performance. Hussein Pour and Azar indicated that respectively communicational and humane dimensions and communicational and cognitive dimensions have the most significant effects on financial performance. Akhavan and Yazdi in their researches indicated that there exists a significant and powerful relation between moral principles and organizational performance. Also there was a significant relation discovered between and among moral principles and the process of knowledge management. Ahmadian (2014) showed that there is a significant and meaningful relation between components of intellectual capital and organizational performance. Mohseni *et al.*, (2014) indicated that there was a significant relation between social capital and its dimensions and intellectual capital and knowledge management. Anvaari *et al.*, found out that (2005) there is a high level of correlation between intellectual capitals and market value of shares. Madhooshi and Amiri (2009) indicated that there exists a significant and positive relation between intellectual capital and financial profits of listed companies on Tehran's stock exchange market. Abbasi and Gold (2010) have evaluated the relation between coefficient of efficiency of each of elements of intellectual capital on the return rates of salaries of shareholders as positive and significant. Rezaei *et al.*, (2013) have found a significant relation between intellectual capitals and knowledge management for optimization of the quality of provides services. Riyahi (2003) conducted a research and found a significant relation between performance of multi-national companies and the company's intellectual capitals. Ghorbani *et al.*, (2013) found out that the relation between intellectual capital and organizational performance was not quite

### Research Article

significant but through the moderation of the process of organizational learning, the same relation was reported strongly significant.

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