Intellectual capital and its effect on economic performance: A Case Study in Iranian Automotive Industry

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Abstract: Studies have shown that in the contrary of loss productivity of traditional sources (money, land and ...), knowledge is really a source of increasing economic performance. Basically, managers of companies are forced to correct and improve production methods, marketing, innovations and ultimately increase productivity and economic efficiency by considering prevailing economic conditions constantly. One of the main ways to improve economic conditions and increase competition for successful factories which can reach to the potency of competition, is the use of creative thinking that without the recognition and protection of intellectual capital will not be possible. In this study, elements and components of intellectual capital are independent variables as human, Structural, and relational capitals. Economic performance indicators (dependent variables): profit and cash earnings are considered. Methods of research in doing is descriptive - correlation of covariance analysis of structural equation model. The results were analyzed with the Lisrel & SPSS software, and finally the relationship between intellectual capital were confirmed and it has been found that relational and structural capital directly and human capital, indirectly, impress economic performance by structural effects.

1 – Introduction

Coincided with revolution of information technology and rapid development of superior technology, since decade1990, pattern of economic growth has got fundamental change and consequently, knowledge as the most important factor, superseded of financial and physical capital in the global economy. In other words, industrial economy replaced to knowledge-based economy. in Knowledge-based economy give more Attention to knowledge and intellectual capital as the main factors of wealth production in comparison with other tangible and physical capitals. in the current competitive markets, the success of an organization depends on applying the elements of knowledge management and intellectual capital in all aspects of organizational (Chen, et al, 2006). In the knowledge-based economy, intellectual capitals, especially human capital are considered as a part of the most important component of corporate capitals and the main potential success factor of organizations, in comparison between tangible capitals, is their intellectual ability.

With the growth of knowledge-based economy significantly, we see that the corporate intangible capitals in comparison with other tangible capitals are more important to preserve and achieving sustainable competitive advantage (Tayles, 2007). Thus the business's environment of economic changes

wonderfully. In Businesses and the economy in twenty-first century, invest on information, information technology, electronic commerce, software patent of research trademark and Innovation and www and etc, that all are part of intangible capitals and intellectual capital and knowledge capitals and are beyond of evident context capitals.(Seetharaman, 2007). In summary, in knowledge-based economy, the most important capitals and company's economic factors are intangible that using of them doesn't less their value, and rather increase their value. These intangible capitals include knowledge, intellectual capital and etc, but in industrial economy the most important factors and capitals are economic and physical that using them diminishes their value. These capitals include land, machinery, monetary capitals and tangible and etc. Nowadays, the role of knowledge in business and maintain competitive advantage are discussed as a major problem in the management of all departments and organizations. All have come to believe that the knowledge is the base of competition in business and future Economy. (Yazdani, 2006).

1-2 - Statement of problem, importance and objective of research

According to the importance of the automotive industry and especially with the implementation of Article 44 of the Constitution and the tendency to the

privatization of the economy and thereinafter that, dramatic increasing in the domestic economy also with willing to join the World Trade Organization and also applied prohibitions by the Western countries need to improve the economic status of the organizations approach to intellectual capital and intangible capitals to be felt as much as before. Managers of organization must get better understand the mentality and the concept of intellectual capital. They need to review products, processes and people and assessment of their knowledge and increase it. One of the main ways that plants have got succeeded to improve production methods, increasing compete with other competitors and improve the financial position, is the using of creative thinking and making innovation in system that this case without recognition and protection of intellectual and intangible capitals would not be possible. In the current situation with regard to the extent of competition and privatization and high complexity and instantaneous changes in environment, corporate managers, to deal with these changes, urgent need to identify intellectual capital levels of the organization and correct management. According to the importance of the automotive industry in the country and the importance of intellectual capital issues were considered, in this study has tried to relate investing in the main value of intellectual capital for automotive industry and the impact on economic performance of intellectual capital. Also determining of the Intellectual capitals value of these companies can affect on efficiency and increasing the economic performance of this group.

With further researcher's study at the statistical prototype, it seemed the subject of intellectual capital and intangible capitals in these companies has been ignored. Accordingly, it has prepared the researcher to do relevant research in this direction. And trying to find a model that firstly identifies the intellectual capital, introduces these basic organization's elements, determines the relationship between these elements. And secondly, determines the effect of each of these elements on the performance of employees.

The main objective of the research:

The components effect of intellectual capital on the auto motive's financial and economic performance.

Other sub-objectives:

1 - Evaluation of components of intangible capitals and intellectual capital components (human, structural and relational) among managers, experts and supervisors of active companies in Iran's automobile industry.

2 - Provide solutions and necessary recommendations to improve intellectual capital level of economic performance.

3 - Discussing the intellectual capital subjective and its relationship between organizational economic performance in order to attract the attention of senior managers of active companies in the Iran's automobile industry, to the importance of intellectual capital and intangible capitals of their organizations.

1-3 - Background and research framework

Emergence of intellectual capital statement has an interesting story. At the end of decade of sixty late AD, an Economist in the name Galbraith, during with a correspondence with his economist friend, Kalsky, speaks to Kalsky about his religion and other's religion caused by his intellectual capital that created in the sixties. For this reason that today, the appearance of intellectual capital statement can be attributed to Galbraith (Khavandkar and others, 1388, 3). The concept of intellectual capital initially, was presented by management science pioneer, Peter Drucker, in description of society after capitalism. At the end of 1990 referring to the intellectual capital and knowledge in the publications and management books and trading were very common (Bontis, 2004). By passing time, the fields of Intellectual capital management became more widespread and were also entered in fields of financial reporting and accounting organizations. Stewart (1991) in an article published in Fortune magazine, by presentation of the main motivation for the formation of another world under the title "world's intellectual capitalists" has gave more reliability to the researches in this field. Along with Stewart in Fortune magazine articles, this subject matter, has followed by his colleagues like Baruch lev from New York University, Davenport (1993) from Boston University, Bontis and his colleagues and also Lif Edvinson (1993) of the pioneers of Skandia Swedish company and other scientists. Therefore focus on intellectual capital and knowledge organizations was increased. Today, many private and governmental institutions have done extensive efforts to identify the intellectual capital of organizations and also to evaluate and comparison of them in different levels of micro and macro. For example, one of the efforts to identify and evaluation investment knowledge that has done in international level is the research that has been done in the United Nations Economic and Social businesses and their sub-units(government management and development unit),under name: measuring knowledge capitals of nations.(Rafiee, 2009). In Knowledge-based economy, the **success** of organizations depends on managing intangible capitals and intellectual capital of their organizations. To manage these capitals, we must

firstly identify and measure them and finally we able to manage those (Sanches, et al, 2008). Much emphasis and attention to intellectual capital represents the fundamental differences between companies that work in the new and old economy. In the old economy-based, market value was based on physical capitals, while the value of the new economy value is caused the application of intellectual capital of the company and knowledge. The appearance of knowledge-based economy is caused to end time of relative importance of tangible capitals and subsequently the new paradigm that much attention to the intellectual capital and knowledge is occurred. (zhou, 2007). Basic steps must be taken to our economy to become knowledge-based economy. We should learn that our organization take to deal with rivals ahead, introduce as a knowledge-based exporter, if we didn't increase our speed, fall farther and farther in this course every day. And soon, if not try we will join to the organizations that have moved toward fail. Economic activists of organizations must achieve to understand the mentality of concept intellectual capital as better as before. They must specify their hidden capitals and change them to intellectual capital and must have a specified plan to use them (Erteghaee, 2009). In this study, the meaning of intellectual capital components is: human capital, structural capital and relational capital are considered as the independent variables which of course, they have a relationship with each other. And personnel's economic performance is considered as dependent variable. it is intended to mention that the performance index in this quantitative study have been considered as profit institution and cash flow or economic indices generally. Indexes of human capital in this study include: innovation and creativity (I & C) - Education and Learning (L & E) - experience and expertise (E & E) indicators of capital structure include: systems and applications (S & P) - processes and structures (P & S) - intellectual property rights (IPRs) relational capital indicators include: agreements and strategic relationships (AA) - relationship with suppliers and customers (R. SC) - Knowledge about customers (KC). In this study, we will understand How with appropriate management intellectual capital components (human capital, structural capital, relational capital), can we improve profits and economic development of organizations and get value for organization according to a very competitive environment.

This model shows the relationship between independent & depended variables of this research. The model that human, structural and relational capitals are considered as independent variables which influence on each other, and the performance of organization with benefit index is considered as dependent variable.

Now, according to clarify the variables and model, research hypothesis are offered:

Main hypothesis: intellectual capital has significant effects on economic performance of organization.

Sub-hypothesis:
 1 - Human capital has significant effects on economic performance of organization.
 2 - Structural capital has significant effects on economic performance of organization.
 3 - Relational capital has significant effects on economic performance of organization.
 4 - Human capital and structural capital have a significant relation with each other.
 5 - Relational capital and human capital have a significant relation with each other.
 6 - Relational capital and structural capital have a significant relation with each other.
In fact in this study the relationship between intellectual capital components with each other, will be identified and the effect of the components of intellectual capital on economic and financial performance of organization will be measured directly or indirectly. It is important to know that in this research the meaning of relationship's effect is correlation and not casual.

2 – Methodology
This study according to its aim that it is determining of the empiric relations in the field of interaction relations between the components of intellectual capital and its effects on the financial performance of the organization, in terms of purpose is applicative and in terms of methodology (how data collection) is descriptive – correlative of covariance analysis methodology of structural equation model (path analysis).

2-1 - Gathering tools and data analysis techniques:
The most important methodology of data collection in this research is as follows:

In this study, library resources, articles, required books and also global information of Internet network are used for data collection in the field of theoretical and literature of research topic. Also, information & data collection to analyze has been done by fielded method by using questionnaires' tool.
Questions (items) of questionnaire include four sections:
 Part I: Human capital assessment questions: this section includes 16 questions.
 Part II: Questions relating to structural capital: this section includes 18 questions.

Part III: Questions relation to relational capital: this section includes 16 questions.

Part IV: Questions relation to financial performance that includes 10 questions.

In this research, after collecting the questionnaires and extraction Replies for changing the Initial data from the questionnaires to the usable mode for using SPSS software and login the information, extracting descriptive statistics with classify the information ,and converting the classified information to frequency and statistical average and one & two-dimensional tables have been converted. And finally by using path analysis of Lisrel software the path models have been traced .and hypothesis have been tested.

2- 2 – Definition of variables and the introduction of statistical prototype.

Intellectual capital: intellectual capital is an information and applicative knowledge to create a value for company (Edvinsson & malone, 2005).

In other words, those capitals of per company that make additional value for company, but they are not touchable and seeable are named as intellectual capital. Stuart Thomas expresses that intellectual capital is a useful knowledge box for the organization. Respect to Boroking, difference between book value and market value of a company is named as intellectual capital (Shaemy Barzeky, 2005).

Practical definition of intellectual capital: intellectual capital consists of capitals and assets that companies have, but they can't easily identify and measure. These capitals have too effect on company's benefit & cost, but they are not visible. It causes to increase the importance of identification and assessment of them. These capitals and assets are called company's intellectual capital, which are converted to three parts: structural capital, human capital and relational capital (Lotfizadeh, 2006).

Human capital: human capital is very important because they are the strategic source of creativity & renewal of organization. Basis of human capital is organizational personnel's intelligence and talent. Range of human capital is limited to the knowledge that workers have in their mind. In other words, it is the most important capital for any organization because this capital is the source of creativity in the organization. This capital consists of staff proficiency, leadership abilities, experiences, ideas, risk-taking, problem solving ability, and... (Bontis, 2004).

Practical definition of human capital: human capital consists of total abilities, capabilities and personnel competencies that can help in solving company's problem. (Shaemy Barzeky, 2005).

Relational capital: relational capital consists of factors that they organize and manage the between organization relations & surrounding environment. Relational capital is not only included relations with customer and marketing, even includes: external relations company with networks, business competitors, material suppliers, good reputation of exploitative unit, associations and trade guilds, government, governmental institutions, media and research centers (Marr, 2005).

Practical definition of relational capital: relational capital points to satisfied customers who loyal to the organization. In General, attitude of all external beneficiaries to the organization (Ghlichly and Moshbaky, 1385).

Structural capital: Structural capital consists of capitals that make possible and improve the organization ability for creativity. Organization mission, vision, basic values, solutions, work systems and internal processes can be considered among these capitals. (Hajikarim, and Bathaee, 2009). Practical definition of structural capital: is the class of the company's capitals that by support human capital causes relational capital. This means, company with having procedures, systems, programs and suitable strategies can help to its personnel to achieve the ultimate goal that is costumers and beneficiaries' satisfaction. (Lotfizadeh, 2006).

This research has been done in the active companies of country's automotive manufacturers and automotive spare parts supplier. The statistical prototype is managers, specialists and supervisors. According to the main purpose of this research that it is discovery of the principle that maintained in whole community, but study the whole of community to lead a general rule, if not impossible, will be very time consuming and difficult work, so the researchers to do research get sample from the community. Sampling in this research has been classified presumably.

Sample size has been calculated by Kokaran formula as follows:

$$ n = \frac{Nt^2 s^2}{Nd^2 s^2 + t^2 s^2} $$

In this formula

T: has been considered as confidence level

N: is number of community

P and q: Is ratio of success failure of variable in community

D: is the accepted error rate by researchers.

So by following the above formula we will have:

$$n = \frac{400 \mid 1.96 \mid 0.31}{400 \mid 0.04 \mid 0.04 \mid 1.96 \mid 1.96 \mid 0.31} = 219$$

N, is number of community: 400
"t", is: 1.96
D, (accepted error by researcher) is: 0.04

3 – Findings of research:

To summarize the answers in the questionnaire, central and dispersion parameters of mean and standard deviation of each of the questionnaire have been calculated. And by using the path analysis, hypothesis of research have been tested to determine the measure and the effect's kind and also direction of the relation between independent & depended variables. In each Equation, tree kinds of information are presented for each parameter. This information consists of:

1. Estimation the non-standard value of parameter.
2. Standard error.
3. The value of "t".
   Estimation of non-standard parameters shows that changing of per unit in independent variable,

if the other independent variables be fixed, how much change will be caused in the dependent variable. The direction of changing is defined by the positive or negative sign of relevant parameters. Standard error shows that the parameter's value with the how much accuracy is estimated. If the value of a parameter is divided on its standard error, "t" value will be calculated. "t" value is used in order to define whether a specific parameter in the community, has a significant differentiation with zero value. "t" value between 2 and 3 shows direct relation of the hypothesis is confirmed and the dissident hypothesis is rejected with more than 95% confidence.

For t value larger than 3, with 99% confidence hypothesis is confirmed and the dissident hypothesis will be rejected. In fact the t statistic tests the hypothesis that shows a parameter is equal to zero. (Kalantary, 102, 2008).

According to the done estimates in the model and equation by software, the results of the direct effect of values is shown for better decision making in Figure 2 and Table 1.

Figure 2: Initial Path Model for checking the direct relationship between model variables:

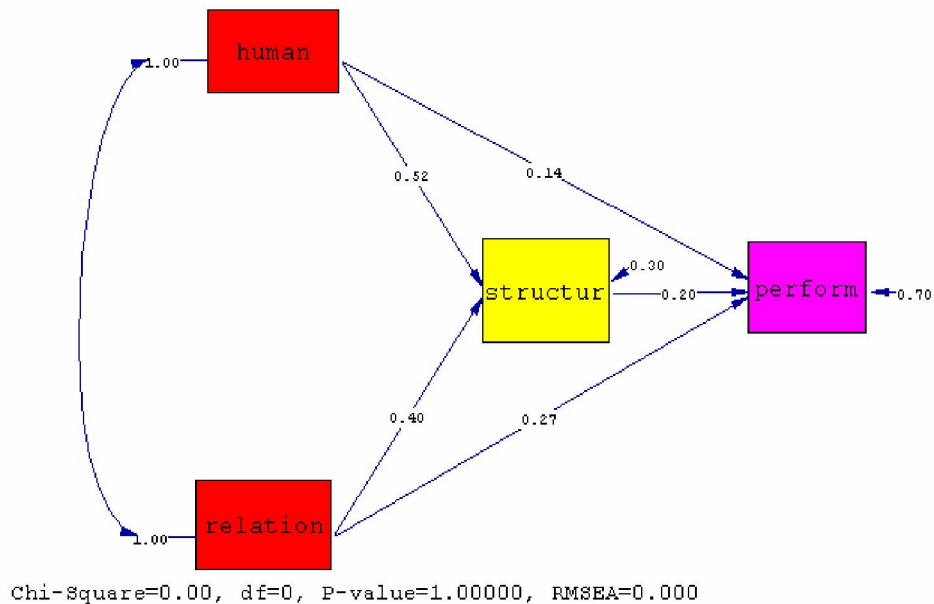Chi-Square=0.00, df=0, P-value=1.00000, RMSEA=0.000

Figure 2, is showing the primary Path Model between variables, it means human capital (human), relational capital (relation), structural capital (structure) and economic performance (perform). The description is observed in Table 1.

Table 1: direct values of the initial path model:

Variables relationship	Estimated	Standard	Standard's	t-value	Signification	Result

	value	value	Error		level	
Relationship between human capital & economic performance	0.16	0.14	0.10	1.56	P > 0.5	Disconfirmation of direct relation
Relationship between structural capital & economic performance	0.22	0.20	0.11	1.98	P < 0.01	Confirmation of direct relation with more than 95% confidence
Relationship between relational capital & economic performance	0.31	0.27	0.096	3.23	P < 0.01	Confirmation of direct relation with more than 99% confidence
Relationship between human capital & structural capital	0.56	0.52	0.051	10.91	P < 0.01	Confirmation of direct relation with more than 99% confidence
Relationship between relational capital & structural capital	0.43	0.40	0.051	8.33	P < 0.01	Confirmation of direct relation with more than 99% confidence
Relationship between human capital & relational capital	0.14	0.62	0.054	7.78	P < 0.01	Confirmation of direct relation with more than 99% confidence

After analyzing the initial model of research, the results of estimated values for the above relationship shows that there is no direct relationship between human capital variable and economic performance (P> 0 . 05) Therefore, in order to calculate estimated values for the final model, non-significant relationships were excluded from the model and the new model is estimated again.

Figure 3: final path model after excluding the non significant values:

Chi-Square=2.44, df=1, P-value=0.11826, RMSEA=0.082
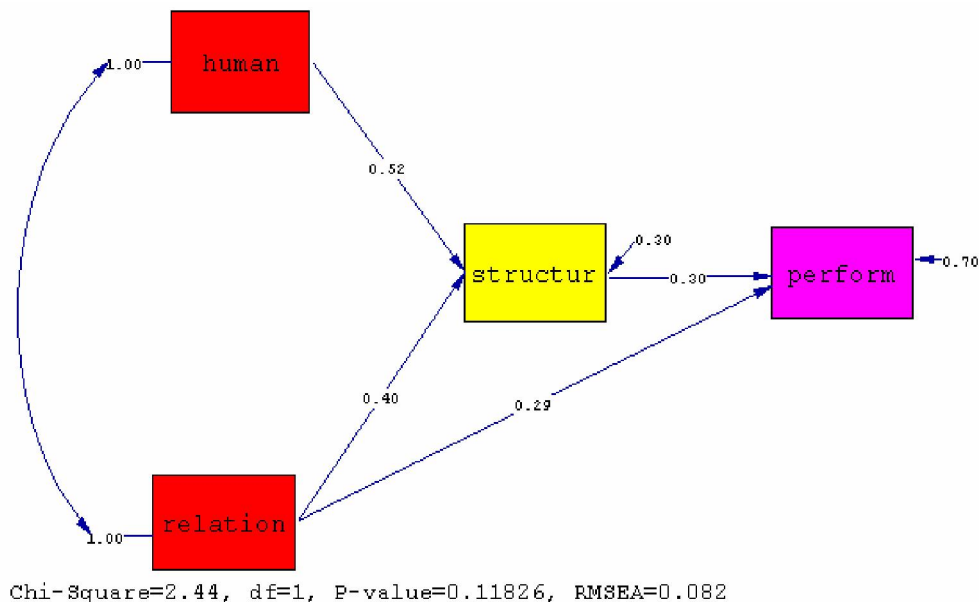
One of the advantages of Lisrel software is that shows the indirect effects of an independent variable effect on the dependent variable through one or more other intermediate variable. To understand this relationship, we should note to the presented diagram of the path in the final model according to the Figure 3. This diagram shows that the relational capital variable not only affects the economic performance directly, also affects the economic performance through structural capital indirectly. On the other hand the human capital variable only affects the economic performance indirectly through structural capital. Now according to the estimates done in the final model & equations by software, the results of the indirect effects of capital values of structural & relational capital on the economic performance for better decision making are shown in Table 2.

Table 2. Results of the indirect effects of capital values of structural & relational capital on the economic performance for better decision making

Variables relationship	Estimated value	Standard value	Standard's Error	t-value	Signification level	Result
Indirect relationship between relational capital & economic performance	0.14	0.12	0.04	3.28	P < 0.01	Confirmation of indirect relation with more than 99% confidence
Indirect relationship between human capital & economic performance	0.18	0.16	0.05	3.39	P < 0.01	Confirmation of indirect relation with more than 99% confidence

Considering the analysis done by Lisrel software which existed in Table 2, it can be defined that the relational capital more over than influences on the economic performance directly, has effect through structural capital on the economic performance indirectly. And indirect effect of relational capital on economic performance will be calculated through multiplying the approximate value of relationship between relational capital & structural capital (which is equal to 0.43 as Table 1), by approximate value of relationship between structural capital & economic per (0.32) as follow:

$0.32 \times 0.43 = 0.14$ Standard error of the two variables related to indirect effect, as seen in Table 2 is equal to 0.04. "t" value related to these two variables (relational capital and economic performance) in the indirect effect is equal to 3.28, which shows estimation at the level of 1 percent is significant. Considering the analysis done by the Lisrel software as observed in Table 2, is shown that more over than relational capital, the structural capital also has effect on the economic performance indirectly. However, the effect of human capital is only indirectly. Non-standard estimation value, related to indirect effect of these two variables as observed in Table 2 is equal to 0.18. Standard error of these two variables, related to the indirect effect is equal to 0.05. "t" value related to these two variables (human capital and economic performance) in the indirect effect equals 3.39, which shows estimation is significant with 99 percent confidence.

3-1 – Hypothesis examination

Hypothesis 1 - human capital has significant effects on economic performance.
H0: Human capital has no significant effect on economic performance.
H1: Human capital has significant effect on economic performance.

Path analysis results (P > 0.05, t = 1.56, = 0.16) show that human capital has a significant effect on economic performance directly. So H0 hypothesis is confirmed and H1 hypothesis is rejected.

Therefore the research results and outputs of Lisrel software specifies that human capital does not influence on the performance directly, rather the human capital is related to capital structure and its effect on economic performance is through the intermediate structural capital variable. It seems that the result of research is absolutely normal & logical. If the dominant structure and culture of a company aren't supportive and openly, human capital won't be able to have any maneuvers. Capital structure makes it possible to transfer the existence of knowledge from the processes, procedures, contracts and etc to individuals or groups of employees throughout training or induction. Competencies and personal characteristics that make the human capital can be detected from the capital structure. To get a profitable usage made by employees, the existence of communicational systems and operational procedures in organization are necessary to support the activities of each employee. The human capital is a source to innovation and strategic rebuilt of a company, and the value of its benefit depends on its efficient usage.

In 2004, Chen got a result by his researches that human capital, in order to be able fully achieved to its optimal performance, requires a supportive structural capital, and if structural capital have not already been invested in, human capital won't handle its responsibilities well. Researches by Kolyung & Paolong showed that higher costs in research and structure improvement causes equally staff quality and high degree of organization and thus improvement of economic performance. In another study in 2007 by Carlos Maria & Marto and their colleagues from the Mizinss University in Argentina that it was done in the country's wood industry, During their study they found out that relational and structural capital directly, and human capital indirectly affect the economic performance. In this research, relationship between performance and relational capital is 0.565, relationship between structural capital and performance is 0.455 and indirect relationship between human capital and performance is 0.27.the results of the researches done by these and many others scientists are similar to the results of this research that states human capital affects the economic

performance indirectly. Of course, scientists like Bontiss (2000) and H. Su Feng (2009) also have proved the direct effect of human capital on economic performance. From the researcher's point of view the results of the researches done in each statistical prototype, considering its special conditions might be different. In this research according to the statistical prototype requirements, the indirect effect of human capital on economic performance has been proved.

Hypothesis 2 - Capital structure has significant effects on economic performance.
H0: capital structure has no significant effect on economic performance.
H1: capital structure has significant effect on economic performance.

Path analysis results show that with more than 99% confidence ($P < 0.01$, $t = 3.57$, $= 0.32$) capital structure, has significant effects on economic performance. Thus, H0 is rejected and the research hypothesis is confirmed.
In 1998, Grilichs found a similar relationship between the investment in organizational structure and organizational performance, and professed we can control the organizational effectiveness in this way. Also Cohen and Lovintal expressed that the capability of palatability of a company is the result of investment in R & D (structure). A study done by Desspande and colleagues showed that culture as one of the components of capital structure, helps people to understand their organizational performance. The results of this research in relation to the mentioned hypothesis are consistent with the results of researches such as Bontiss & colleagues (2000), Chen & colleagues (2004) and H. Su, & Feng (2009). For example, the relationship between structural capital and performance in the research of Chen and colleagues (2004) is equal to 0.733, and the effect of capital structure on the improvement of economic performance in the research of H. Su & Feng is equal to 0.16.

Hypothesis 3 – relational capital has significant effects on economic performance.
H0: relational capital has no significant effect on economic performance.
H1: Relational capital has significant effects on economic performance.

The path analysis results show with more than 99% confidence ($P > 0.01$, $t = 6.28$, $= 0.47$), relational capital has significant effects on economic performance. Thus, the H0 hypothesis is rejected, and the research hypothesis is confirmed.
The results of this research in relation to the mentioned hypothesis are consistent with the results such as

Bontiss & colleagues (2000), Chen & colleagues (2004) and H. Su, & Feng (2009). For example, the relationship between relational capital and economic performance in the study of Chen and colleagues (2004) is equal to 0.798, and the effect of relational capital on the improvement of economic performance in the study of H. Su & Feng (2009) is equal to 0.11. In addition, Stewart proved in 1999 that intellectual capital through customer capital change to financial capital also expressed that relational capital depends on support of structural capital. In research done in Turkish industry by Bozbora in 2000, was determined that relational capital has direct effect on book and market value of companies. In Research done in Malaysia by Bontiss and colleagues in 2000 was determined that relational capital affects on financial performance about 20 - 30 percent. Research in 2000 done by Gaph and colleagues showed that customer satisfaction causes the improvement of organization's financial performance and it's market value.

Hypothesis 4 - human capital and structural capital have significant relationship with each other.
H0: There is no significant relationship between human capital and structural capital.
H1: There is significant relationship between human capital and structural capital.

Path analysis results show that with more than 99% confidence ($P < 0 .01$, $t = 10.91$, $= 0.56$) there is significant relationship between human capital and structural capital. Thus, H0 is rejected and the research hypothesis is confirmed.
The results of this study in relation to mentioned hypothesis are consistent with the results of researches such as Bontiss & colleagues (2000), Chen & colleagues (2004) and H. Su, & Feng (2009). For example, the relationship between human capital and stactural capital in the study of Chen & colleagues (2004) is equal to 0.748; in study of Bontiss & colleagues (2000) is equal to 0.483 and the effect of human capital on structural capital in the study of H. Su & Feng (2009) is equal to 0.41
In addition, Balekh.Lu & colleagues in 2005 pointed to the relationship between intellectual capital components such as human and structural capital. Ross & Ross in 1997 divided intellectual capital into human, organizational and relational capital and expressed that there is strong relationship between intellectual capital components. Girlish proved in 1998 that immaterial ownership that is considered as a subset of structural capital, can be considered as the most probable output of inventive activities. That it shows the relationship between human capital and structural capital.

Hypothesis 5 - relational capital and human capital have significant relationship with each other.

H0: There is no significant relationship between relational capital and human capital.

H1: There is significant relationship between relational capital and human capital.

Path analysis results show that with more than 99% confidence (P<0.01, t = 7.78,   = 0.14) there is significant relationship between relational capital and human capital. Thus, H0 is rejected and the research hypothesis is confirmed.

The results of this study in relation to mentioned hypothesis are consistent with the results of researches such as Bontiss & colleagues (2000), Chen & colleagues (2004) and H. Su, & Feng (2009). For example, the relationship between human capital and relational capital in the study of Chen & colleagues (2004) is equal to 0.833; in the study of Bontiss & colleagues (2000) is equal to 0.798 and the effect of human capital on relational capital in the study of H. Su & Feng (2009) is equal to 0.75

According to the provided theories and framework by Gotery & colleagues in 2003, relation with the outside of company without the personnel who can afford this work, is very difficult.

Hypothesis 6 - relational capital and structural capital have significant relation with each other.

H0: There is no significant relationship between relational capital and structural capital structure.

H1: There is significant relationship between relational capital and structural capital structure.

Path analysis results show that with more than 99% confidence (P<0.01, t = 7.78,   = 0.14) there is significant and positive relationship between relational capital and structural capital. Thus, H0 is rejected and the research hypothesis is confirmed.

The results of this study in relation to mentioned hypothesis are consistent with the results of researches such as Bontiss & colleagues (2000), Chen & colleagues (2004) and H. Su, & Feng (2009). For example, the relationship between relational capital and structural capital in the study of Chen & colleagues (2004) is equal to 0.858; in the study of Bontiss & colleagues (2000) is equal to 0.496 and the effect of relational capital on structural capital in the study of H. Su & Feng (2009) is equal to 0.47

4 - Results and recommendations:

The subject of this study is evaluation of intellectual capital effect on the economic performance of companies which they are covered by Mega-engine construction-developer. The main problem that caused this researcher chose this subject and test it in motioned statistical prototype was the novelty of subject and it's importance in the automotive industry. Therefore, the identification and management of intangible capitals can affect development and improvement of economic status of these companies importantly.

The main objective of this study was evaluation of intellectual capital effect on economic performance. Analysis of data from this study showed that the intellectual capital components to wit: structural capital affects economic performance, directly; relational capital affects economic performance through structural capital, directly and indirectly; and human capital affects economic performance just through structural capital, indirectly. However, the intellectual capital components relate to each other and the correlation between them is high. Providing support the structural capital, human resources play so vital and important role in the company and can be caused the improvement of economic status. The companies which have motivated forces and can maintain them, insure their financial success by high additional value created by each of these staffs, and can achieve to exclusive proficiencies and competencies in the future. To achieving this aim, organizations should employ the workers with special proficiencies and skills.

If the organization's staffs have a high level of intelligence but there is no strong systems and procedures to support the staffs activities, these people never reach the highest potential that they are able to achieve that. Capital structure is mentioned as a instrument for organization which shows how people do their works with keeping effectiveness.

Therefore, providing the lake of appropriate and high level structural capital, it is natural that human capital and also to some extent of relational capital has been removed from the scene, and company encounters with numerous problems such as disinclination of employee, low selling, low quality of products, lack of ability to compete with competitors, and in total loss of economic potency. But the organizations should know that the main problem is in the methods, procedures, processes, programs, organizational culture, infrastructures and etc which all of them are as structural capital of the organization. And by modify them, they can obviate many existed problems and almost improve them, and at the result cause the economic   prosperity.

Now the main question is discussed thus: what is the way and method to improve the structural capital? The answer of this question point of the researcher view is attention to this point that structural capital is through the intellectual input of founders, Board of Directors and especially the Managing Director and executive superior managers of organizations. In other words, as human capital is related to structural capital, also structural capital dependences on human capital (although the relationship between intellectual capital

components are part of the research hypothesis which all of them were fixed) Therefore, to improve the capital structure, choosing and employing of superior managers of organization should be considered carefully by the owners, shareholders and the Board of Directors.

For managerial posts, people must be chosen who have higher university education in relevant fields, experience and sufficient expertise in management, humanities and behavioral, have necessary experience in relevant company's activities, be aware up to dated management problems. And above all caring, compassionate, undertaking and loyal to the organization and have no affiliation to the party and class. Selecting of them is based on qualification, not unofficial relations.

According to the results of data analysis, in order to enhance the intellectual capital and their relationships with each other and their effects on economic performance and growth and development in economic and improvement of financial situation of companies which active in the country's automotive industry, the following recommendations can be noted: Is proposed to achieve high levels of economic performance, managers must manage the knowledge resources, because knowledge resources expands within the collaboration network and can be a effective response to internal and external financial situations.

Solid belief and intellectual inanition "The way we work now is the best way to go" as the obstacle to development and continuous learning should change to this belief that "We always learn from others ". Because this belief causes more learning by affects thought and behavior of personnel. Perhaps the most important proposal, which could be proposed in this section, is company should be very careful in employment and utilization of force, especially in the manager posts. Company should proceed to discover and identify the managers who they have a learning mind, than these managers react about new idea and diversity in behavior and knowledge openly. And try to understand and improve of communication continuously and consider cooperation as a opportunity for development of ability and organizational resources. Other point is: training, continuing development and identify components of intellectual capital levels should not be forgotten, because the training and identification and management of intellectual capital components not only in technical aspects but also in the field of learning and participation and international knowledge and economic progress are important and essential. For making the desire learning environment, company must educate the value of learning process, to the personnel, rather than to assume, these training are unnecessary in the company. The last point,

considering that acting in the international cooperation is complex and with uncertainty, therefore it is suggested that open channels of communication which make clarification and fast data and cause more relationship between decision makers, be provided than knowledge and learning resources and intellectual capital levels will be increased and ultimately knowledge-based economy will be practical.

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05/30/2011