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Intellectual Capital Effects Analysis on Human Resource productivity in Isaco Organization

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ABSTRACT

In knowledge-based economics, products and organizations live and die based on knowledge. Today, intellectual capital and human Resource productivity that are used for organizational value increase and creation are one of the most important anxieties of managers in each organization. This research has been also done by objective of exploring intellectual capital effects analysis on human Resource productivity. Present research method is surveying-descriptive and according to objective it is applicable. Statistical society of this research is Isaco company that 200-person sample by simple random method have been selected using statistical sample volume determination formulation of Cochran and a questionnaire was distributed among them which validity and perpetuity have been confirmed to gather data and after gathering, they have analyzed using correlation test. Results obtained show that intellectual capital in 99% confidence has great effect on human Resource productivity. Moreover, obtained results indicate that feedback elements organizational support, job cognition improvement, motivation, deciding validity, employees' ability and adaptation with environment.

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Introduction

In today competitive world, human resources are as the most important capital of organization that can lead to growth and evolution in other organizational factors and main results. If a country superior criterion in past decades was human Resource volume, modern arm, powerful army, vast field or extensive underground resources and veto right in international societies, from so on a country power is related on human Resource productivity (Vaezi, Vosooghi, 1389). In order to grow and develop human Resource and increase skill, creativity and human Resource knowledge in all organizational levels is considered a political priority for managers. In other words, the most permanent competitive advantage is having valuable human force.

Baker stated that investing on intellectual capital is related to employees' productivity. Planning to develop intellectual capital makes new chances to learn new learning methods and organization performance improvement (Hatami, Dastar, 1391).¹ Therefore, it should be emphasizes on human Resource role in using producing factors; though, science, capital and technology are necessary, they are not enough and won't be effective alone. Human combines various factors and makes new elements. Humans are the main factor in motivation, research and development of educating centers and science spread (GhahramaniKia, 1391).

In today competitive and changing environment, effectiveness and productivity need more emphasis on intellectual capital and knowledge. Actually, intellectual capital is unknown resource which still has ambiguity. Intellectual capital is new issue that according to scientific and theoretical

aspects in previous decades is introduced globally and attracts organizational authors and scholar researches increasing attention. Therefore, this research tries on identifying and exploring intellectual capital and each index effect on humanResource productivity in Isaco organization.

Research Literature

Intellectual Capital:

An organization intellectual capital is unknown and intellectual resources that organization makes value by recycling them into new service and merchandise processes (Fotrous, Beygi, 1389). Intellectual capital expression was first considered by Mechlup in 1962 (Namamian, Gholizadeh, Bagheri, 1390). But historically intellectual capital expression invention is related to 1969 and economist John Kenneth Galbraith. He believed that intellectual capital is far more than one-way thought meaning and it is a degree of intellectual action (Setayesh, Dehdari, Namazi, 1390).

In evolution path of intellectual capital concept, theorist stated various definitions about intellectual capital as following:

Briefly looking to intellectual capital definitions shows that authors are not in agreement, but all definitions are based on this fact that intellectual capital is organizational unknown capital including human capital, structural capital and communicating capital (customer).

Intellectual Capital Elements:

Generally, intellectual capital researchers and authorities agree on 3 elements: human capital, structural capital and communicational capital that ate explained in detail in this section.

Human Capital:

Human capital shows an organization staff knowledge (Bontis, 2002). Roos et al. argued that employees make intellectual capital by their qualifications, attitude and

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intellectual Agility (Ghelich Lee, Moshabaki, 1385). Chen et al. argued that human capital as a base of intellectual capital referred to factors as knowledge, skill, ability and employees attitudes that lead to performance improvement customers expect to pay for it and make profit for firm (Ghelich Lee, Hejari, Rahman pour, Habib pour, Yazdani. 1388).

Author	Definition
Hall (1992)	Intellectual capital can be classified as equities (trade mark) or skill (previous knowledge of staff, organizational culture).
Edvinsson and Sullivan (1996)	Intellectual capital is knowledge that can change into value.
Brooking (1996)	Intellectual capital is combination of 4 main sections: market capitals, human-base capitals, intellectual capital and fundamental capital.
Sveiby(1985)	Intellectual capital consists of 3 unknown capitals: internal structure, external structure and employees' qualifications
Rooset al. (1997)	Intellectual capital consists of a section of human capital and another section of non-intellectual (structural capital)
Stewart(1997)	Intellectual capital of obtained parts has been formalized and used to produce a capital with more added-value.
Bontis et al. (1999)	Intellectual capital is a concept that classifies all unknown resources and internal communications.
Barney (1991)	Intellectual capital has unknown nature and prevailingly it is known as political capitals in organization and leads to financial performance and organizational competitiveness merit.

Nahapiet and Ghoshal also concluded after extensive researches that human capital includes skills, behaviors and knowledge that one person used in his working organization (OureiYazdani, Moloudi, 1389). Moreover, Brooking believes that human capital in an organization includes skills, proficiency, ability to solve problems and leadership style (Brooking, 1996). Stewart also stated that; although, in learner organization, employees are considered as the most important capital, they are not belonged to organization, because a hot discussion is that whether new knowledge made by employees is belonged to organization or not? (Stewart, 1997) for example, a software programmer in a firm formulate a program at home on weekends, can organization still claim this program is related to it? Human capital causes organizations to be dependent on their employees' knowledge and skills to make profit, grow and also efficiency improvement and productivity (Ghelich Lee, Moshabaki, 1385).

Structural Capital

Structural capital includes all non-human knowledgeResource including data bank, organizational diagram, processes executive instructions, strategies, and executive program and generally all in organization have higher value than material value. In other clear words, Roos et al. believe that capital is all stayed in organization when employees go home at night (Ghelich Li, Hejari, Rahmanpour, Habib Pour,Yazdani, 1388). Brooking stated that structural capital includes fundamental capitals liketechnology, trade markets and productivity and registration right (Brooking, 1996). Moreover, according to Stewart idea, structural capital includes existed knowledge in information technology, productivity and registration right and trademarks (Stewart, 1997). From Bontis point of view, if an organization has weak systems and work procedures, general intellectual capital won't arrive to its maximum potential power to let people act new works, face with failure and learn (Bontis, 1998). In addition, Chen et al. believe that structural capital can help supporting employees to fulfill

optimum intellectual performance and organization business. Structural capital is also a function of human capital (Chen, 2004). Therefore, Structural and human capital are interacting with each other help organizations to develop and use customers capital conformably (Ghelich Lee, Hejari, Rahman Pour, Habib pour, yazdani, 1388).

Communicational/Customer Capital

Brooking in market equity section referred to customers, their loyalty and distribution channels related to customers (Steward, 1997). In addition, Stewart stated also customer main issue is existed knowledge in marketing channels and relationships with customers (Ghelich Lee, Hejari, Rahman Pour, Habib Pour, Yazdani, 1388) and market information to use in attracting and keeping customers (GhelichLee, Hejari, Rahman Pour, Habib Pour, Yazdani, 1388). Customer capital shows potential capital of an organization for external unknown factors. New definitions develop customer capital concept to communicational capital that includes existed knowledge in all relationships organization have with customers, providers, trade committees or government; in addition, Chen et al. classify customer capital in marketing ability, market intensity and customer loyalty framework. Fornell consequently found out in his studies that customer satisfaction can protect business relationships, reduce product price and increase a firm credit (Fornell, 1992). These studies provide more witnesses about customer capital importance as a key element of general intellectual capital of organization. Customer capital growth is related to human capital and structural capital. Generally, customer capital acts as a link and mediator in intellectual capital process, main determining factor in changing intellectual capital to market value and consequently organization business performance. (Ghelich Lee, Moshabaki, 1385). Therefore, customer capital growth is related to human and structural capitals (Ghelich Lee, Hejari, Rahmanpour, HabibPour, Yazdani, 1388).

Productivity

Productivity is always dynamic word that is always changing and evolution. (Sharifzadeh, MohammadiMoghadam, 1388). This term for the first time was used by FransoaKeneh, physiocracyschool advocate, a mathematician and economist. Keneh by proposing economic table introduce each government power as its productivity increase in agriculture. In 1883, Litreh also defined productivity as technic and knowledge (Taheri, 1378). productivity term is synonym of revenue, efficiency, ability, skill and utility and its main purpose is achieving to maximum revenues by considering all existed factors in producing or servicing activities (Ranjbarian, 1383). productivity in general meaning is effective and efficient usage of fundamentality to achieve to products. Fundamentality is resources (like energy, ingredients, capital and work force) that are used to make output by products (refer to an organization output that can be have physical nature or unknown nature). (Tangen, 2005) In other words, it can be stated that productivity is getting more possible profit by optimum productivity from work force, power, talent and human force skill, ground, car, equipment, time, place and so on (Hatami, Dastar, 1391). Japan productivity center defines productivity as maximizing usage from physical resources, human forces and other factors scientifically that leads to reduce producing expenses, market expansion, employment's increase and life level improvement of all society members. European productivity institute defines productivity a degree and intensity of effective usage from each of producing factors and claims productivity is a kind of attitude and view that a person can has in his duties and

responsibilities every day better than past; generally, it can be stated that belief in productivity means having strong faith for human improvement. (Abtahi, Kazemi, 1379). Iran National productivity Organization defined productivity as a culture, rational attitude to work and life that's purpose is making activities intelligent to achieve more eminent and better life (Khaki, 1387). International labor organization defines productivity a relationship among resulted outputs from producing systems with used data (like ground, capital, work force and so on) to produce output (Ranjbaran, 1389). Davis defined productivity as obtained changes from product amount against consumed resources (Sumanth, 1995). Mandel knew productivity as the proportion between producing yield to consumed resources unit in comparison with basic year. American Quality and productivity Center defined productivity as following: (Alvani, Ahmadi, 1380).

productivity* price recycling = revenue

Sumanth had complete physical view toward productivity and knew it as comparison between organization's physical inputs with outputs (Tangan, 2005).

Danpourt, Tomas and Counterel define productivity quality, efficiency and profitability. (Danpourt, Tomas, Counterel, 2002). As it is inferred from above definitions, the most important factor in all definition is that productivity is considered determining the proportion of what is used to what is produced in process (Alvani, Ahmadi, 1380).

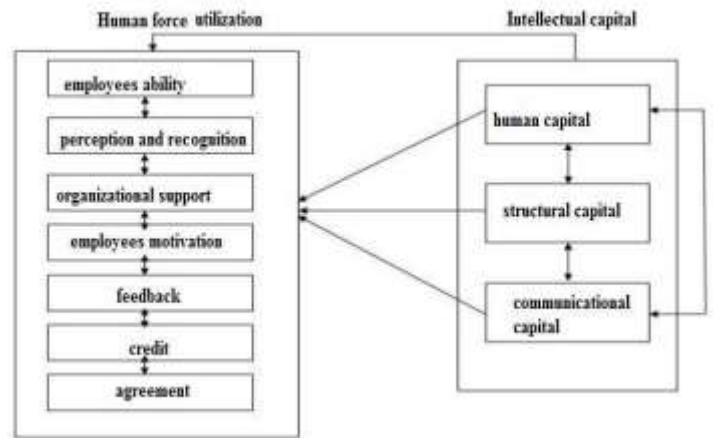
Human Resource productivity:

In productivity, the concentration main center is human Resource and all affords are focusing on Human Resource productivity. Today, human Resource importance and role is not unknown for anyone, among producing factors (ground, human force, technology and capital) the most valuable, rare and extinct factor is human Resource (Rezayian, Ghasemi, 1389). Effective human Resource is the main factor of success permanency and organizations aims accomplishment and organizations which have significant success consider this issue as their priority (Mehrabian, Nasiri Pour, Keshavarz Mohammadian, 1388), because it is the only resource that cannot be copied by rivals and make permanent competitive merit for organization (Cho et al., 2006). Alfered Marshal defines human force improvement as the most valuable investment (Sharifzadeh, Mohammadi Moghadam, 1388). Productivity culture governance leads to optimum usage of all moral and material facilities of organizations and without adding technical and new human force, human facilities, condition, power and abilities with producing property and creation for organization to achieve to the maximum productivity can be used.

Favorite productivity is not achievable by structure changes, adding technology, instruction formulation and circular emission, but human is the axe of all social-personal and organizational productivity; therefore, the most focus and planning should be around human force productivity and sole attention to other factors not only hurts efficiency and effectiveness in organization, but also leads to waste and incidents waste and dissatisfaction in human force. (Rezayian, Ghasemi, 1389).

Research Conceptual Model

After studying Literature and exploring variables and using professors' ideas, conceptual model is design as following that research conceptual model is adopted from Bontis intellectual capital and Hersi&Goldsmith productivity model. According to conceptual pattern, human force productivity variables are (dependent variable) and intellectual capital variables are (independent variable).



Methodology

Present research is surveying-descriptive according to methodology and applicable according to purpose, because based on conceptual model of research and extracted indexes from literature it explores, describes and analyze existed condition among intellectual capital variables and human force productivity in Isaco Organization and its results can be used in decision makings and politicizing and also in planning. In this research librarian and surveying methods have been used to gather data. Gathering data tool includes: note writing from books articles, theses, internet and data banks in order to extract and formulate information relative to subject literature and to gather surveying data, 2 questionnaires of Bontis, Hersi and Goldsmith with 51 questions, 4 questions related to demography and 47 questions related to dependent and independent variables evaluation are designed. In providing used questionnaires validity in this research, expertise, professors and Isaco Organization managers' ideas have been used. Cronbach alpha coefficient mentioned proceeding has been used to determine test perpetuity. Statistical society of this research includes 3 sections of (after selling services, technical and engineering, systems and information technology) Isaco Organization that by sample volume determining methods, 200 people were selected by simple random method and only 180 people fill questionnaire and only 167 questionnaires were able to be used in analysis.

Data Analysis and Hypotheses Test

Main Hypothesis: intellectual capital has positive and significant relationship with Human Resource productivity in Isaco Organization.

Table 6 Path coefficients, t statistics and determining coefficient (dependent variable: Human Resource productivity)

Total determining coefficient (R2)	T statistics	Path coefficient (β)	Estimation variable
0.73	9.13**	0.85	Intellectual capital

**p<0.01

*p<0.05

According to path coefficient 0.85 and also t statistics of 9.13, it can be stated that: intellectual capital with 99% confidence has positive and significant relationship on Isaco Organization.

Multi-determining variable (R²) equals 0.73. This coefficient explores dependent variable prediction ability by independent variable. According to intellectual capital variable has been able wholly to predict 73% of human Resource productivity variable changes.

Secondary Hypotheses:

1) Intellectual capital has positive and significant effect on employees' ability in Isaco Organization.

- 2) Intellectual capital has positive and significant effect on job cognition by employees in Isaco Organization.
- 3) Intellectual capital has positive and significant effect on organizational support increase by employees in Isaco Organization.
- 4) Intellectual capital has positive and significant effect on employees' motivations in Isaco Organization.
- 5) Intellectual capital has positive and significant effect on employees' performance feedback in Isaco Organization.
- 6) Intellectual capital has positive and significant effect on employees' decision making performance promotion in Isaco Organization.
- 7) Intellectual capital has positive and significant effect on employees' environment in Isaco Organization.

Table 8 Path coefficient, statistic t and determining coefficient (independent variable: intellectual capital)

Predictor variable	Path coefficient (β)	T statistics	Total determining coefficient
Employees ability	0.68	6.10**	0.47
Job cognition improvement	0.95	5.05**	0.91
Organizational support	0.97	9.38**	0.95
motivation	0.86	7.67**	0.73
Performance feedback	0.98	5.85**	0.96
Decision making credit	0.84	7.89**	0.71
Adaptation with environment	0.65	4.74**	0.42

** p<0.01 *p<0.05

Conclusion and Suggestion

The main objective of this research is exploring intellectual capital effect on human Resource productivity. In this research, it is argued that intellectual capital as the most important capital is financial and physical capital displacement in today global economics, because intellectual capital is born from science and knowledge arena and in an economics based on knowledge, countries and organizations are living on its base and the most successful of them is who use these unknown equities in the best and fastest way. Firms with higher intellectual level have better human Resource productivity.

Analysis resulted from this research shows that intellectual capital has a great role on human Resource productivity. Moreover, obtained results show that feedback, organizational support, job perception improvement, motivation, decision making credit, employees' ability and adaptation with environment are priorities influenced by intellectual capital, respectively. Therefore, it is necessary managers pay attention to their intellectual capital more precisely, because it is a sophisticated and ambiguous expression, but when it is understood and produced can provide a new resource for organization to compete. This research like any other researches is influenced by some limitations like questionnaire volume, limitation in time and research expense and non-cooperation of some of organization's employees.

Suggestions for organization and scientific society

- Undoubtedly for new coming being of intellectual capital effect on human Resource productivity, extensive research doing is necessary and this article is as the first steps.
- Organization reinforces structural capitals by structural modifications, policies improvement, and functional program execution and.....
- Consider programs to promote technical skills of employees and acceleration in enabling processes.

➤ Organization make cultural situation by corporate management methods, making reliance space between managers and employees.

➤ Organizations urge new designs and ideas.

Suggestions for Future Researchers

➤ It is suggested that intellectual capital effect on human Resource productivity to be done comparatively in automobile firms.

➤ Explore other models effect from these 2 variables (intellectual capital- human Resource productivity).

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