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EFFECTS OF KNOWLEDGE-BASED, INTELLECTUAL CAPITAL AND INNOVATION METHODS ON HUMAN RESOURCE MANAGEMENT: CASE STUDY OF MINISTRY OF EDUCATION, TEHRAN DISTRICT 7

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ABSTRACT

Innovation function in organizations is; primarily; considered to be a human issue in which individuals cultivate opinions to develop and implement them with respect to knowledge and individuals′ relationships in the organization. An innovative function can influence human resource management (HRM) and existing knowledge in organizations′ innovation; the study's purpose is to investigate the effect of knowledge-based; intellectual capital and innovation methods of HRM in Ministry of Education; Tehran District 7. The study′s methodology is description-survey. The method of data collection is field type, and the method of data collection has been a standard questionnaire; the statistical population includes 60 staff of the Ministry of Education in Tehran District-7. Valid and measurable questionnaires have been collected and then they have been analyzed by structural equations SmartPls2; then obtained results show that immediate factors are effective between HRM and innovative function in this study.

Disciplinary: Management Sciences (HRM).

1. INTRODUCTION

Human resource management (HRM) has considered innovation to be a vital factor for organizations to create permanent competitive value in today′s complex and variable environment. When organizations are more innovative in response to variable environments and developing new allowable capabilities, they become more successful; innovative measures are heavily dependent on knowledge, specialty, and employees′ commitment as the process′s input, in order to form innovation, organizations may influence assets to develop organizational specialty and form new ideas. Indeed, knowledge is the complex result of conscious measures related to duties (Maman, 2016) Organizations, in addition to organizational and statutory criteria, need a set of factors which support them in this way and make cooperation and unity possible toward a collective and public strategy (Norouzi et al 2015).

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2. THEORETICAL PRINCIPLES

In many organizations, activities have faced many factors including market opportunities, cost reduction, and competition to improve performance (Navarro et al, 2010) to show satisfactory performance in tough occasions encountering by markets. Thus, a perspective based on resources in the organizations can be caused by their unique resources, integrated resources and/ or the ability to respond to the environment. Accordingly, there is a distinct difference regarding different organizations' performances is due to the fact that successful organizations have strategic resources (physical, human and organizational) that their competitors lack these resources (Sinaei et al., 2011). On the other hand, human resources are the core of organizations' activities, these are humans who work in organizations and the organization does not work automatically (Sheykh-al-Eslami, 2012). One of the symptoms of organizations' improper statute is the lack of a functioning system in different aspects of the organization including satisfying staff needs, suppliers. On the other hand, lack of an organization evaluation and monitoring system means inability to communicate with inner and outer environment of the organization which are followed by indolence and finally breakdown of organizations (Rezaian et al 2011). Innovation is a vital factor in the organizations to create permanent competitive advantage and value in our changing and complex world.

While each activity needs genius and talent, it also needs the knowledge, attention and hardworking of all staff. Innovation term is a wide concept to use related knowledge or information to create or introduce new and useful things. Therefore, innovation can be described as any new idea of an organization and/or industry and/or a nation and/or world (Hosseini 1998). Innovative organizations need a flexible environment to support innovations. Flexibility increases the power of adapting and believing which makes the openness to innovation easier (JafarPour, 2013).

A majority of government organizations are looking forward to establishing internalized knowledge management to take advantage of their knowledge and maintain a competitive advantage in national and international. Fast changes in today′s world, organizations have faced different challenges. Pioneer organizations have exploited management means and modern technologies to accomplish organization′s purposes (Ramezani & Soleymani, 2015). Science development and fast changes in today′s world have posed many challenges to organizations. Continuous changes in knowledge have imposed an imbalanced condition on organizations. The most important role which can be dedicated to knowledge management is that we can consider it to be a change methodology. Knowledge management can be the most important factor for a change in the organization because it attracts new knowledge into the organization and manages it (Hosseini and Fard, 2012). It is hard to implement knowledge sharing in organizations and it needs support (Reychav and Weisberg, 2010).

Intellectual capital is a non-competitive capital that is contrary to physical capital that can be used for a single purpose at a particular time. Intellectual capital can be used for multi-purposes simultaneously (Zanjirani and Allahi, 2014). Employees create intellectual capital through competency and intellectual agility. In fact, this capital creates an opportunity for the organization using creativity and personal cooperation to acquire trade value (Dastgir et al, 2014). Intellectual capital includes three elements like human capital, structured capital and communicative capital (Khoo et al 2015). Human capital and communicative capital and structured capital cannot change into private property, they shall be shared among staff, customers and suppliers, and these

properties growth needs close attention and monitoring among individuals and organizations (Dastgir et al, 2014).

With respect to discussed issues and the importance of subject in Tehran district 7 Ministry of Education, first of all, human is needed to grow and develop more in innovative areas of organizations, knowledge depends on developing and implementing HRM and main innovative factors in district 7, Ministry of Education. Innovative production can be considered to be an important concern which has certain shortages. There is limited data regarding human capital, structured capital for innovative performance and there is a question which says to what extent HRM can be effective in the field of successful and ideal innovative performance? Kianto et al. (2018) obtained findings on 180 Spanish companies have been tested, that intellectual capital is a positive mediator between HRM and innovative performance. The main study question is: does the investigation of knowledge-based HRM impact intellectual capital and innovation in Tehran-district 7 ministry of education?

Wikhamn (2019) investigated the way of permanent HRM and its impact on customer satisfaction and customers in Swedish hotels. Respondent hotels are divided into four groups based on their participation in two methods of permanent HRM. Findings showed that the relationship between innovation and customer satisfaction depends on permanent human resource methods. However, innovative acts and methods of permanent human resource impact positively on customer satisfaction. Their interaction shows that an individual can replace customer satisfaction with the other factor. This study shows that methods of permanent HRM increases a hotel′s capability to be more innovative and have more customers.

Many studies' findings showed that structured capital impacts significantly the range of knowledge-based companies′ authority and policies regarding entrance to the market. Human capital plays a critical role in organizational learning and training. Communicative capital helps these companies to act successfully in the field of networking with customers, suppliers of research centers, development and financial sources.

Also, many studies explore these relationships in the statistic sample showing that culture improves innovation and also it contains the company′s performance. It can also be a barrier toward innovation, it depends on values and beliefs in which culture cultivates them. This fact clearly shows that adhocracy culture is the best factor and variable to predict innovation and performance. We can conclude that innovation balances the relationship between organizational culture and performance.

3. CONCEPTUAL MODEL

The study conceptual model is given within the framework of Figure 1.

Based on the issues which have been discussed in the introduction and the importance of study subject, these three hypotheses are made for carrying out this study:

H1: H1 Knowledge-based HRM with a mediatory role of human capital impacts the innovative performance of Tehran- District 7 Ministry of Education, Iran.

H2: Knowledge-based HRM with a mediatory role of structural capital impacts the innovative performance of Tehran- District 7 Ministry of Education, Iran.

H3: Human capital with a mediatory role of structural capital impacts the innovative performance of Tehran- District 7 Ministry of Education, Iran.

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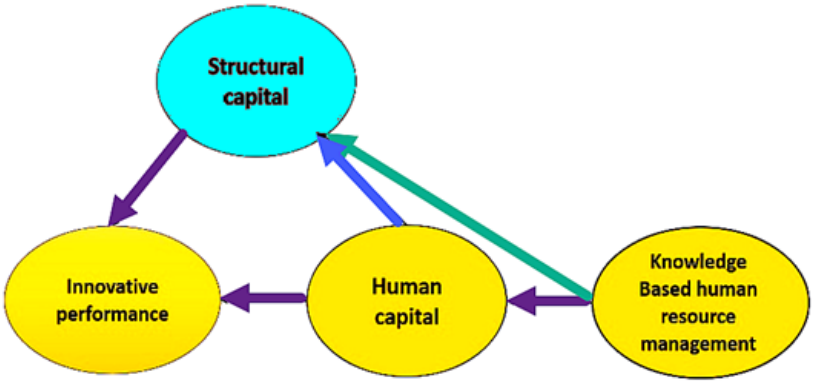

Figure 1: The study model (after Kianto et al. (2017)).

4. METHOD

This study is in the applied form with regard to the study purpose, and it is a descriptive-survey with regard to the study method. In the study, the review also covers Latin and Persian articles, books, and the Internet. A questionnaire has been designed and used to collect data. The study population contains the staff of the District 7 Ministry of Education.

4.1 QUESTIONNAIRE VALIDITY

In order to measure the validity of the questionnaire, content reliability has been used. A questionnaire has been handed out among specialists and experts which has asked about the usefulness and uselessness of questions with respect to the variables and purpose of each variable. The completed questionnaires were collected and the validity of content has been given to 12 marketing experts, the content validity has been calculated for the index of identification based on 12 auditors. According to 12 auditors in Table 1, the accepted content validity ratio (CVR) equals 0.56. The numerical calculations results were 0.66 to 1 for each question which illustrated the questions′ validity.

Table 1: the content validity of the questionnaire

Question	Calculated value	Question	Calculated value	Question	Calculated value
Q1	0.66	Q10	0.84	Q19	1
Q2	0.67	Q11	1	Q20	1
Q3	0.84	Q12	0.66	Q21	1
Q4	1	Q13	1	Q22	1
Q5	1	Q14	1	Q23	0.84
Q6	0.66	Q15	0.84	Q24	1
Q7	0.84	Q16	0.84	Q25	0.67
Q8	0.84	Q17	1		
Q9	1	Q18	1		

4.2 RELIABILITY OF QUESTIONNAIRE

First of all, a primary sample is provided which contains 30 questionnaires before the test, and then SPSS 22 software calculates the reliability with the Cronbach's alpha method using obtained data. Using SPSS22 software, the alpha amounts have been estimated to be more than 0.827 which shows the questionnaire validity and proper intellectual impression of respondents regarding the content of related variables. Results show that the amount of alpha enjoys the advantage of having the required reliability.

Table 2: coefficient of Cronbach's alpha

No	Variable	Questions	Alpha amount
1	HRM	1-13	0.886
2	Human capital	14-16	0.869
3	Structural capital	17-20	0.827
4	Innovative performance	21-25	0.853

5. FINDINGS

In this study, inferential discussions and statistic descriptions have been used to analyze data and test hypotheses. Descriptive statistics contain frequency tables and means, and at inferential level, structured equations have been used including estimation of path coefficient, significance coefficients, and Soyel test. SPSS22 and PLS2 software have been used to analyze data.

Respondents′ educational backgrounds: 8.3 percent diploma, 16.7 percent technician, 41.7 percent bachelor, 23.3 percent master's level, 10.0 percent PhD.

Respondents′ ages: 3.3 percent between 25 to 30 years old, 40.0 percent between 31 to 35 years old, 28.3 percent between 36 to 40 years old, 15.0 percent between 41 to 45 years old, 13.3 percent between 46 to 50 years old.

The reliability of the index is calculated by measuring factor loads through calculating the amount of indices′ correlation in each structure, and its amount equals and/ or more than 0.7. It proves the fact that reliability is acceptable for the measurement model.

Table 3: validity of variables

Variables	Cronbach alpha	Mixed reliability CR> 0.7	Shared reliability communality> 0.5
HRM	0.904	0.916	0.548
Human capital	0.765	0.864	0.680
Structured capital	0.784	0.860	0.607
Innovative performance	0.802	0.864	0.560

In the present study, indices show that all the questions have factor load of more than 0.7. These results confirm next stages of study.

The second validity has been divergent for measurement confirmation and validity which is a complementary criteria. In PLS modeling, two criteria including Fornel Lacker and width loading tests have been used.

In the present study, Farnel Laker test is used to investigate known level. On the other hand, each structure has a higher correlation in comparison to other structures. Fornel and Laker results have been presented, the results related to Fornel have been presented in table 4, as you can see, each structure′s load has a higher load in comparison to other structures (factor loads are higher on the main diameter). Therefore, the model′s divergence is confirmed.

Table 4: divergent validity of measurement model

Main variables	1	2	3	4
HRM	0.740			
Human capital	0.651	0.825		
Structured capital	0.572	0.591	0.779	
Innovative performance	0.626	0.704	0.682	0.748

The obtained results of Table 4 show that there is enough divergent validity among study′s

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variables. With respect to numbers written on main diameter, the number of figures on each column was less than main diameter. This confirms the level of divergent validity in the study model.

5.1 INVESTIGATING THE STUDY'S INNER MODEL

After testing outer model and confirming its validity and reliability (study's measurement model), inner model or structural model of study is evaluated. Study hypotheses can be dealt by using inner models. Statistic criterion including t, coefficient of determination, and path coefficient are used to evaluate the model. The tested conceptual model has been presented in a standard way or PLS algorithm, and paths' coefficients (figure 1) and significance coefficients (Figure 2) have been presented.

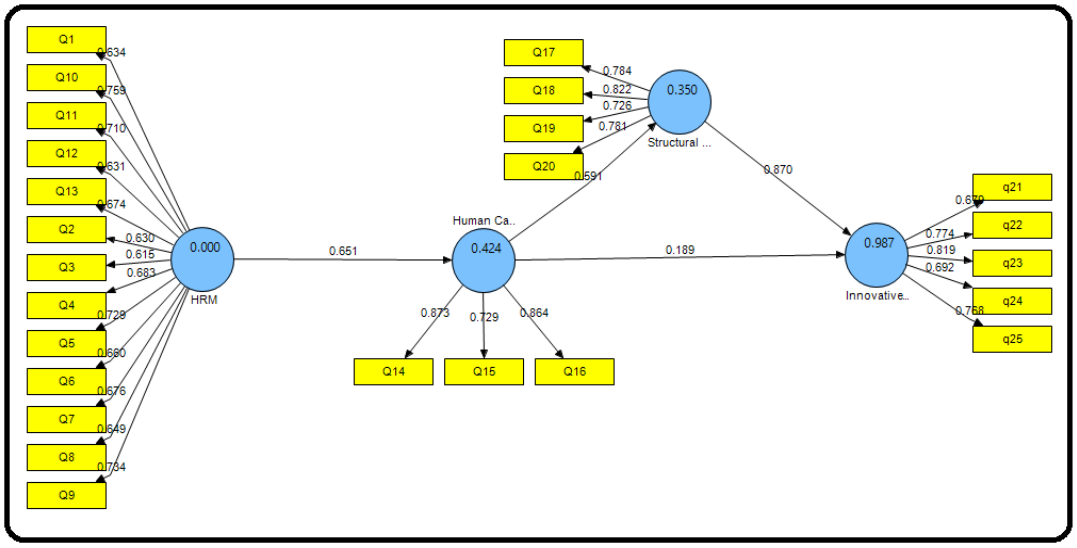

Figure 2: A structural model for determining path coefficients.

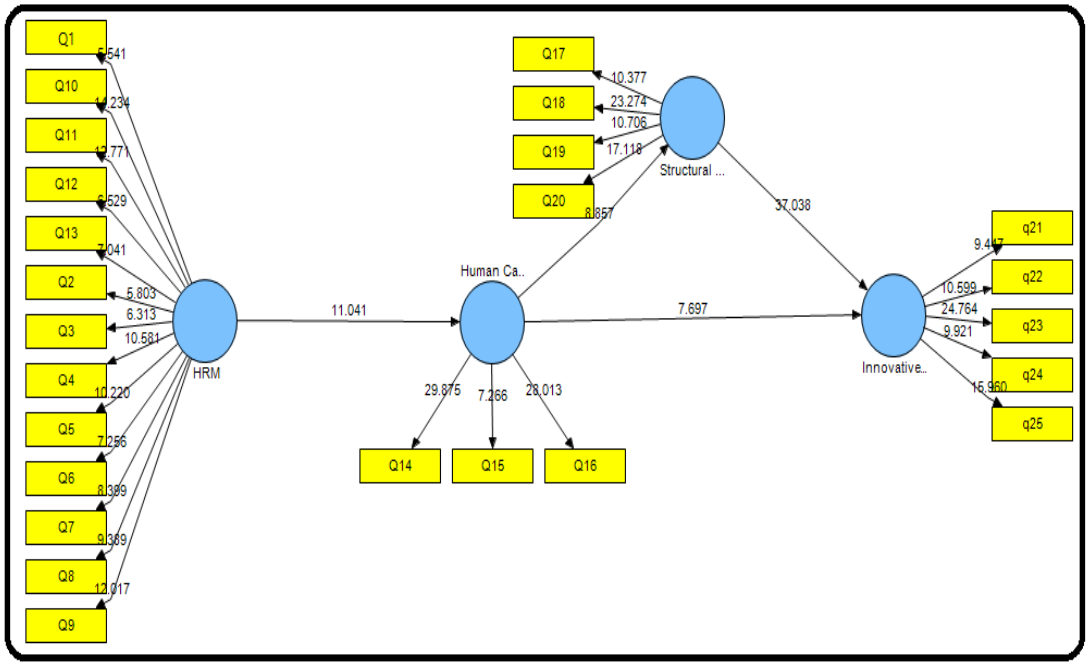

Figure 3: Structural model for significance coefficients.

In Table 5, the rate of R^2 impact and structural quality of model which shows the impact of external variables on internal variables, the final amount can be strong in R^2 due to this model's structural state, and independent variables could predict the dependent variable to be strong and it

has been on average for independent variables.

Table 5: The amount of internal and external variables′ impacts

Variable	R^2	Q^2
HRM		
Human capital	0.424	0.287
Structural capital	0.350	0.377
Innovative performance	0.987	0.251
The general model fitting	0.593	

As we considered the obtained results, R^2 and Q^2 show that independent variables were able to predict independent variables on average or above and the general fitting is strong.

The outputs of PLS prove the study′s hypotheses which have been shown in table (6). As you can see, study′s hypotheses have been investigated with respect to the statistic amount of 1.

Table 6: results of the studied hypotheses.

Hypotheses	Test statistic	Std. Error	p-value	Hypothesis Results
H1	5.76	0.021	<0.001	confirmed
H2	2.76	0.103	0.005	confirmed
H3	3.18	0.104	0.001	confirmed

6. CONCLUSION

In the study, we have dealt with investigating the effect of knowledge-based human resource management methods, on innovative and intellectual capital and a number of results have been reached which are dealt with based on hypothesis: First hypothesis: knowledge-based HRM is effective with mediatory role of human capital on innovative performance of District 7 Ministry of Education in Tehran.

Regarding structural model and mediatory effect of human capital, statistic hypothesis H0 has been confirmed and H1 has been rejected between knowledge-based HRM and innovative performance of Ministry of Education because its P-value (<0.001) is less than 0.05. In this study, as knowledge-based HRM affects innovative performance. Based on the effect of all main and side hypotheses, we can conclude that the effectiveness of the mediatory factor related to the social capital on HRM and innovative performance is acceptable, obtained results are consistent with study′s findings of Ino & et al in 2017.

Second hypothesis: knowledge-based HRM with mediatory role of structural capital impacts innovative performance of Ministry of Education in Tehran district-7. With respect to the structural model and mediatory role of structural capital, H0 is confirmed and H1 is rejected because P-value equals 0.005 and this amount is less than 0.05.

As knowledge-based HRM impacts structural capital and also impacts innovative performance. Generally, there is an impact between HRM and innovative performance, with respect to the effect of all main and side hypotheses, we can conclude that the effect of mediatory role of structural capital and innovative performance is acceptable, obtained results are consistent with study′s findings of Ino et al. in 2017. Third hypothesis: human capital is effective with the mediatory role of structural capital on innovative performance in the Ministry of Education- Tehran district-7.

Regarding structural model and mediatory role of structural capital, it is effective between

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human capital and innovative performance because its P-value equals 0.001 and it is less than 0.05, statistic hypothesis H0 is confirmed and H1 is rejected. In this study, there is an impact between human capital and structural capital, and there is also an impact between structural and innovative performance. In general, there is an impact between human resources and innovative performance. With respect to the impact between main and side hypotheses, we can conclude that the impact of the mediatory factor of structural capital between human capital and innovative performance is acceptable. Obtained results are consistent with findings of Ino et al. (2017).

6. DATA AND MATERIAL AVAILABILITY

Information regarding this study is available by contacting the corresponding author.

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