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Research Article

THE MEDIATING EFFECT OF THE KNOWLEDGE MANAGEMENT CAPABILITIES ON THE RELATIONSHIP BETWEEN THE HUMAN RESOURCE MANAGEMENT AND INNOVATION IN PASARGAD BANK DIVISIONS

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ABSTRACT

Human resources and innovation are among the issues which are specially interrelated, and today the managers pay a great deal of attention to the human resource management value as an intangible capital and an incentive for the innovation in an organization for the same reason. Therefore, the human resource management role in enhancing the knowledge capabilities which result in further innovation in an organization has been studied in the current article. The objective of the current study is to investigate the practices and the functions of the human resource management in the relationship between the ability to manage knowledge in the innovation process and besides the investigation of the direct relationship between the human resource management and innovation the moderating role of the knowledge management in these relationships in the Pasargad Bank divisions in various counties has been studied.

To do so, after projecting the study analytical model based on the data by making use of the Path Diagram program through the implementation of the Perlis Program from LISREL software the measurement model is obtained in which the study hypotheses are tested through the use of the B coefficient and t-test.

After analyzing the relationship between the human resource management and innovation the results are indicative of the moderating role of the knowledge management in the relationship between the human resource management and innovation.

Keywords: Innovation, Human Resource Management Capabilities and Knowledge Management Capabilities

INTRODUCTION

Human capitals and innovation are among the issues which are specially interwoven. Many firms have recently started to introduce knowledge management plans in order to improve their performance and currently the knowledge based society is recognized via factors such as competition enhancement, technological innovation and global market nature. In the today’s unruly world the firms cannot survive without the innovation and creativity. The employees’ creativity contributes to the firm’s survivability. When the employees are creative in their tasks they will be able to offer novel and profitable ideas about the products, performances, and services and one of the best choices for the firms to directly achieve the competitive advantage would be resulted from the constant technological innovation. For the organizations competing in a variable and indistinct environment, innovation to grow, succeed and survive is deemed as a crucial factor for the organization (Mollahosseini and Barkhordar, 2007).

The innovation related to a product can be defined in three developmental processes which are the development of a new item, the new item itself and the process of pursuing the new item (Zaltman and colleagues, 1973). Urabe, also states that the innovation is the development and the utilization of a new application in the form of a new product, new process or new service which results in the dynamic national economic growth and the increase in the employment for generating profit in the innovative firm (Urabe et al., 1988). The firms with more innovation in response to the changing environment and with developing novel and new capabilities which allows them to obtain better performance will be more successful (Montes et al., 2004). Presence in the competitive and dynamic environments requires the
firms to constantly innovate and in relation to the knowledge role in the creation of competitive advantages and innovation outcomes in the organization, the current study aims to analyze the internal complexities characterizing the technological innovation in a company in order to investigate the direct relationship between the human knowledge capitals and technological knowledge and product innovation and the moderating effect of the knowledge management capabilities in such relationships in the Pasargad Bank Divisions in different counties.

**Study Background**

**Innovation**

Innovation is the major tool for many of the companies to compete specially in knowledge- and technology-based industries (Castro et al., 2013). Van Dawn and colleagues believe that “the organizational creativity is the foundation for the innovation and the innovation is the part of a system which produces it (Yazdani, 2006). The main resources for the creation of the organization ideas can be divided into two main sets. The exogenous resources such as: the products and services existing in the market, the business and industrial activities, research and development (R&D) of the market extant technologies, research centers (exhibitions, conferences, and scientific and industrial meetings, communications and academic activities), and the endogenous resources such as: creative and innovative manpower, the organization strategic plan, or in other words, the organization perspective, the use of idea-creating techniques and research projects (Esma’eeeltabar, 2008). According to Mclean (2005) “innovation is the successful implementation of the creative notions and ideas in an organizations.” (p.227)

The innovation and creativity culture as an input is the cause of the constant driving force behind the development dynamic cycle and the productivity will be increased through making the organization consistent with the changes. Some have divided the innovation into technological innovation, product innovation and process innovation and recognize the process innovation as the fundamental and radical innovation in the production technology (in the form of new equipment or the management practices or both) and they believe that the process innovation and product innovation are interdependent and the more the product innovation rate decreases the process innovation rate goes up. In another classification, different types of innovation which are necessary for the understanding and recognition of the organization can be divided into technical and official, product and process, and gradual or radical innovation (Liao and Wu, 2010).

Innovation can be a new product or service, new production process technology or a new structure, executive system and/or a new plan or program relative to the organization members. Therefore, the organizational innovation is assayed through the innovation acceptance level (Damanpour, 1991). According to the studies performed by Coombs and Bierly (2006) innovation is regarded as one of the most important competitive sustainable resources since it is at the base of product improvement and increases the goods package value. Many definitions for innovation can be found in the organizational literature studies. In fact, innovation refers to the implementation of the idea resulting from creativity which is offered as a new product or service.

Holt explains the innovation, in a broad sense, as a process for employing related knowledge or information intended for the creation or introduction of every revised item which is designed and actualized and it stabilizes the organization status in contrast to the competitors and facilitates a long-term competitive superiority as well (Holt, 1988). While discussing about the product innovation, Adams according to Abernathy and Utterback (1987) defines as the product innovation the new products or services introduction or the considerable revision of the two in order to fulfill a user or a market requirements the effect of which is comprehensible by the user. The product innovation from the slow (2005) guidelines perspective means “the introduction of a product or service from the witling characteristics or the applications point of view based on which it is considered new or undergone significant improvements.”
This innovation includes considerable improvements in the components and the constituents, the associated software, the ease of use or other functional characteristics. The final objective of the product innovation is this idea that the company can obtain a competitive advantage through the introduction of the new products which enables the company to gain the increase in the demand and the increase in the price (Slow guidelines, 2005). Based on the researches performed by De Castro et al., (2013), generally, the innovation process is understood as a complicated activity in which the novel and modern knowledge is applied for business goals.

**Human Resource Management (HRM) Capabilities**

In an era of rapidly changing knowledge and innovation the success and the sustainability of the business and transactions are vital. During the recent years, some of the researchers in the field of management have focused on the internal attributes of a company on which the technological innovations output are effective. Particularly, the researchers concentrated on the resource-based view (RBV), knowledge-based view (KBV), and intellectual capital-based view (ICBV), (p.352). And RBV stresses that the available resources and capabilities of a firm are the main factors for achieving competitive advantages and technological success such as organizational capabilities, culture, human capital, technical knowledge and experience. Therefore RBV is a convenient theory within the framework of which the researches are trying to analyze the role of the intangible capabilities and resources in the creation of the competitive advantages through making use of innovation. The researchers have long endeavored to discover how various organizational, individual, and environmental factors nurture innovation. Generally, there are three sets of variables which are capable of creating innovation. They are related to the organization structure, the culture and human resource capabilities. The human capital is an issue which is gaining increasing importance. Roberts (1988) also contends that the four aspects of human power, structure, strategy, and support systems are the success axes for innovation.

According to Scarborough and Carter (2000) because the organization has access to the employees’ knowledge, skills and expertise, it needs suitable capacity of the knowledge management tools in order to assure the effective utilization of the human capital in the organization expertise development in order for the innovation to be created. Respective to the relationship between human capital and innovation there are several studies performed from among which the studies performed by Beugelsdijk in 2008 can be referred to which deals with the relationship between the human resource strategic performance and the firm’s capabilities to innovate new products and the results suggest that the instruction and education based on the performance is in positive relationship with gradual innovation but it is in quite contrary position regarding radical innovation (Beugelsdijk, 2008).

Also, based on the studies performed by De Castro et al., (2013) it can be asserted that the ability of a firm to innovate is in close association with the organizational knowledge capital and intellectual capital and the ability of the organization to develop these capitals (2013). The innovations by the human resource management in the field of employment and staff member attraction can pave the way for the emergence of the innovative behaviors. The selection of innovative employees and with performance superiorities in exigent occasions and constraints along with responding to the environmental requirements is one of these initiatives (Abdullah et al., 2010). The selective attraction which guarantees the conformity between the individual and the organization and the selection of the individuals with job-related qualified knowledge, skill and talents for the sake of the innovative performance is also deemed as an activity for increasing the innovation and enhancing the initiative activities (Chang et al., 2012).

Also if the human resource management can guarantee the employment security it will be able to increase and encourage the innovation in different levels of the organization because then the employees’ commitment to the organization will be increased and this will lead to their greater participation (Abdullah et al., 2010).
Investment in education and training can develop the employee’s expertise in all of the organization levels, and this is highly likely to provide for the potential sustainable and stable resource of the ideas for innovation (Boroomand and Ranjbari, 2009). By education we mean those trainings which are at the base of the knowledge and multiple skills development and transfer, the capabilities levels enhancement, the survey and examination of new ideas and eventually increasing motivation in the individuals (Chang et al., 2011).

One of the other effective actions of the human resource management is the performance evaluation and in case that the performance management systems are taken advantage of and via linking the results obtained from the performance evaluation at the cost of services the conditions are prepared for the emergence of creativity (Ultra and Alegri, 2011). Also paying higher salaries and benefits in respect to the opponents and also reward incentives due to participation in innovation such as profit allotment practices provides for the individual’s encouragement to take risks and perform innovative behaviors (Soutaris, 2002).

Knowledge Management Capability

Knowledge management is one of the key factors in the success of CRM implementation. Knowledge management has been changed into an important domain of strategic management of human resources like information technology, since the information is linked with staff. Knowledge management is referred to act or process to create, acquire, build ownership, share and apply knowledge that improve learning and organization performance (Armstrong, 2009). So when business change the customer information to knowledge and uses them to improve customer relations, can result to customer loyalty. Understanding and creating suitable conditions for effective implementation of knowledge management and its processes is the key to understanding the success and failure of knowledge management in organization (Robbins, 1997). Researchers’ believed that knowledge management capability is an organization ability to attract and manage customers, provide product information and services for better response to customers’ needs and providing an area for faster decision making based on reliable information in organization (Alani and Leidner, 2001). Knowledge acquisition and Dissemination of knowledge are essential elements in knowledge management, that these two factors are considered in the knowledge management capabilities. Knowledge Management as one of the determining factors plays a critical role in the success of customer relationship management. Knowledge management is right knowledge acquisition for right people at the right time, which enables them to make the best decisions (Aziza et al., 2010). Identifying customers with high value in current customer is one of the knowledge management capabilities. Technology can act as a backup in this area but knowledge management provides effective use of information process by using technology (Moreno and Melendez, 2001). This is important for organizations to know true and actual value is not just only in more information and more developed technology, but is in having customer relationship knowledge management. As it is referred previously, if customers information are changed into knowledge by business and uses it for improving customer relationship, can result to customer loyalty that its advantages includes: Low cost of attracting new customers, high customer profitability and optimizing service channels and attract new customers (Injazz and Popovich, 2003). The purpose of this research is the knowledge acquisition relevant to customers knowledge management, products and services in order to make sufficient decisions according to requested products and services by the customer and the distribution of knowledge means the knowledge dissemination to users automatically based on the interests, working and collaborative learning among groups, the development and diffusion of knowledge among individuals, groups and organizations and knowledge management publications in organizations.

In Moreno and Meléndez idea in (2011), customer relationship management is based on the knowledge and knowledge management has a key role in CRM success and customer services improvement is the main purpose of the most knowledge management sketches (Alavi and Leidner, 2000). According to Zablahet.al in 2004, knowledge management is one of the structures that effectively manage the customer relationships management and companies should improve the customer relationship management capabilities. Moreover, according to Salmador and Bueno (2007) Creation and transfer of knowledge as a
significant strategy is one of the fundamental processes that lead to innovation and learning in the organization (p 367).

3. The study theoretical framework and the conceptual model

The aforementioned factors in the problem proposition in a conceptual model is illustrated in Figure 1 and the innovation indices, knowledge management capabilities and the human resource management capabilities are paid attention to in this model.

![Figure 1: Conceptual Model](image_url)

**Study Hypotheses**
1. There is a positive relationship between the human resource management capabilities and innovation
2. There is a positive relationship between the human resource management capabilities and the knowledge management
3. There is a positive relationship between the knowledge management capabilities and innovation.
4. The knowledge management capabilities are the mediators between the human resource management capabilities and innovation.

**MATERIALS AND METHODS**

The current study is a causative-applied study from the nature of the subject of the study and the determined objectives. The study population is the managers and the experts of the counties’ Pasargad Bank Divisions. In the current study the simple randomized sampling has been used and by making use of the Cochrane sample volume formula the sample volume has been calculated as 200 people. In the field studies by making use of a standard questionnaire including 32 questions all of which are in the form of Likert’s 5-point scale the required data was collected. The data has been analyzed by the use of LISREL software. For the sake of the determination of the questionnaire validity and reliability the content-validity and the Cronbach alpha coefficient has been used and the reliability coefficient of the questionnaire which includes 32 questions is 0.937. In the present article after the projection of the analytical model based on the data via Path Diagram through the implementation of the Perlis program from LISREL software the measurement model has been obtained and in this model the hypotheses have been tested through the use of the B coefficients and t-test. The model fitness indices are also calculated automatically through the implementation of the Perlis Program.

**Data Analysis**

As it can be understood from table (1), the comparative amount indices or the goodness of fitness are all in an acceptable level. The following two diagrams are indicative of the LISREL software general output models which simultaneously includes structural model and the measurement model the two of which will be studied in greater details in the following sections. The diagram 1 shows the t-statistics for the structural model and measurement model and the diagram 2 illustrates the factorial load for the structural and measurement models.
### Table 1: The study model fitness indices

<table>
<thead>
<tr>
<th>The estimated amounts</th>
<th>Standard amounts</th>
<th>Macro</th>
<th>Fitness index</th>
<th>df</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>461</td>
<td>--------</td>
<td>Chi-Square</td>
<td>Not a good scale because of the dependence on the sample volume</td>
<td>Chi-square</td>
<td></td>
</tr>
<tr>
<td>1136.82</td>
<td></td>
<td>RMSEA</td>
<td>The mean square estimation error</td>
<td>Chi-square</td>
<td></td>
</tr>
<tr>
<td>0.086</td>
<td>0.05</td>
<td>NFI</td>
<td>The standardized fitness index</td>
<td>Non-standardized index</td>
<td></td>
</tr>
<tr>
<td>0.91</td>
<td>0.90</td>
<td>NNFI</td>
<td>The mean square estimation error</td>
<td>Non-standardized index</td>
<td></td>
</tr>
<tr>
<td>0.94</td>
<td>0.90</td>
<td>CFI</td>
<td>The comparative or adjusted fitness index</td>
<td>The residuals mean squares</td>
<td></td>
</tr>
<tr>
<td>0.064</td>
<td>0.05</td>
<td>RMR</td>
<td>The mean square estimation error</td>
<td>Goodness of fitness</td>
<td></td>
</tr>
<tr>
<td>0.74</td>
<td>0.90</td>
<td>GFI</td>
<td>The mean square estimation error</td>
<td>Revised goodness of fitness</td>
<td></td>
</tr>
<tr>
<td>070</td>
<td>0.90</td>
<td>AGFI</td>
<td>The mean square estimation error</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Diagram 1: The basic model along with the t-statistics

Chi-Square=1136.82, df=461, P-value=0.00000, RMSEA=0.086
Structural Equations
Equation 1:
Knowledge management capabilities = a constant amount + 0.52 * the human resource management capabilities + error (t=73.5)

Equation 2:
Innovation = the constant amount + 0.51 * knowledge management 0 + 22 * error + human resource management capability (t=2.66)(t=2.20)

As an specimen for the results obtained from the structural model the first equation of the structural model is suggestive of the relationship between the independent variable of the human resource management capability and the dependent variable of the knowledge management capability in which the regression standardized coefficient and the t-statistic are equal (t = 5.73, \( \gamma_{11} = 0.52 \)) and because the t-statistic is greater than 1.69 the correlations are statistically significant in 95% confidence level.
Table 2: The hypotheses test results

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Coefficient</th>
<th>T-statistic</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. there is a positive relationship between the human resource management capability and the innovation</td>
<td>0.22</td>
<td>2.20</td>
<td>Acceptance</td>
</tr>
<tr>
<td>2. There is a positive relationship between the human resource management capability and knowledge management</td>
<td>0.52</td>
<td>5.73</td>
<td>Acceptance</td>
</tr>
<tr>
<td>3. there is a positive relationship between the knowledge management capability and innovation</td>
<td>0.51</td>
<td>2.66</td>
<td>Acceptance</td>
</tr>
<tr>
<td>Human resource management capability</td>
<td>0.52</td>
<td>5.73</td>
<td>Acceptance</td>
</tr>
<tr>
<td>Knowledge management capability</td>
<td>0.52</td>
<td>2.66</td>
<td>Acceptance</td>
</tr>
<tr>
<td>Knowledge management capability</td>
<td>0.52</td>
<td>2.66</td>
<td>Acceptance</td>
</tr>
<tr>
<td>Innovation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. The mediatory effect of the knowledge management capabilities between human resource management and innovation</td>
<td>0.52*0.51= 0.2652</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

RESULTS AND DISCUSSION

Since innovation is, to a great extent, crucial in preserving the competitive advantages. The managers and the researchers are interested in the comprehension of the innovation process in the organization. In the current study, the use of the long term innovation includes the development in products, programs or services and a process comprised of several various stages. According to the data analysis obtained from each of the hypotheses as a whole, the positive effects of the investigated factors were confirmed. The results are indicative of the moderating effect of the knowledge management in the relationship between the human resource management and innovation. According to the data analysis obtained from each of the hypotheses, the study findings and results obtained are separately analyzed and introduced.

The amount of the path coefficient between the human resource management capabilities and innovation is equal to 0.22 and the amount of the respective t is 2.20>1.96 which according to t the null hypothesis can be rejected with the critical amount of 0.05 in the 95% confidence level, so the first claim proposed by the researcher is confirmed and it can be said with the confidence of 95% that there is a positive relationship between the human resource management capabilities and innovation. Based on the performed studies human resource management methods, policies and systems can increase the creative and innovative behaviors through influencing the individual’s behaviors and attributes (Pastor, Santana and Sierra, 2010). The human resource functions facilitate and promote innovation via motivating and reinforcing employees’ role behaviors, such as creativity and innovation, long-term orientation, cooperation and confidence, risk-taking and conflict tolerance.

The results obtained from the second hypothesis showed that the amount of the path coefficient between the human resource management capabilities and knowledge management capabilities is equal to 0.52 and the amount of the respective t is 5.73>1.96 which based on the t-test with the critical value of 0.05 in the confidence level of 95% the null hypothesis can be rejected therefore the second claim proposed by the researcher is confirmed and it can be said with the confidence of 95% that there is a positive relationship between the human resource management capabilities and knowledge management capabilities. The human knowledge and capital are two subjects the role of which in elaboration of the positive results of the organizational discoveries such as innovation has been the focus of many of the scientists (Jalal et al., 2011). There should be coherence between the human resource management functions and the strategies increasing the learning capabilities and this is regarded as the key factor for innovation.

Based on the results obtained regarding the third hypothesis the amount of the path coefficient of the knowledge management capabilities and innovation is equal to 0.51 and the amount of the related t is 2.66 >1.96 which based on the t-test with the critical value of 0.05 in the confidence level of 95% the null
hypothesis can be rejected so the third claim of the researcher is confirmed and with the confidence level of 95% it can be said that there is a positive relationship between knowledge management capabilities and innovation. Innovation and human resource management capabilities both have intensive relationship with knowledge and learning. The results obtained from many of the researchers shows that the human resource capabilities increases learning, which is effective on innovation, through knowledge management capabilities (Lopez-Cabrales et al., 2009).

The result of the hypothesis 4 test is evaluated based on the information gathered from the table. Now we deal with the investigation of the knowledge management capabilities mediatory role between the human resource management capabilities and the innovation in such a way that if the direct effect of the human resource management capability can be confirmed and verified on the knowledge management capabilities and also the direct effect of the knowledge management capabilities can be verified on the innovation, the mediatory effect of the knowledge management between the human resource management and innovation is verified as well. The human resource management capabilities’ exogenous implicit variable path coefficient over the knowledge management capabilities’ endogenous variable $\gamma_{11} = 0.52$, with the value of $t=5.73$ in the error level of 0.05 with the confidence level of 0.95 of the considered statistic is significant. The knowledge management capabilities’ endogenous implicit variable path coefficient over innovation endogenous variable $\beta_{11} = 0.51$, with the T value equal to 2.66 in the error level of 0.05 is significant as well. Therefore, the mediatory effect of the knowledge management capabilities on the relationship between the human resource capabilities and innovation equal to 0.52 * 0.51-0.2652 and the researcher’s claim is confirmed. Along with this finding Ozbag et al., (2013) also in the investigation of the human resource management capabilities effect on the innovation confirmed the mediatory role of the knowledge management capabilities. Mcduffi (1995) in the survey of the human resource innovative activities on the productive functions of the organization studied the effects of the four indices of employment, payment, promotion and education as the human resource innovative activities and the existence of such relationships were confirmed.

Conclusion
The innovative capabilities of a firm are in close association with the intellectual capital and/or the organizational knowledge capital and the firm’s ability to cultivate such capitals. The ability of a firm in innovating products and its knowledge capitals as a dynamic capability is essential for the future success. According to the knowledge role in the creation of the competitive advantages and innovation consequences in the organizations, the present study investigates the mediatory effect of the knowledge management on the relationship between human resource capabilities and innovation. The results prove that the knowledge management ability influences the selection, development, evaluation methods, and positive compensation of the firm’s innovation capability. Moreover, the knowledge management capabilities act as a mediator in the innovation process through facilitating development, knowledge, knowledge propagation and knowledge utilization. The researches show that the participatory human resource management capabilities based on the knowledge creates an environment and culture which encourages behaviors that reinforce and extract better innovative results. In the subject of the human resource in order to leverage the staff skill level the studied companies should allocate sufficient time and capital for training the employees and actively encourage the education and the development of their staff knowledge in a way that it is always up to date. The human resource management plays a coherent role through the facilitation of the knowledge management via suitable relations, recognitions and rewards and also the organizational processes development which drives the transfer and acquisition of the knowledge. Therefore, in order to improve the job processes, the experience and the innovation should be encouraged in order for the firms to be able to increase the demands and the selling price via introducing a new product, and gain competitive advantages. In correspondence to the results obtained from the current study it can be concluded that the human resources management capabilities enjoy a direct and indirect effect on the innovation by means of knowledge management capabilities and the improvement of the human resource management capabilities leads to innovation and also it can be concluded that the human
resource management functions via the knowledge management capabilities increase the organizational learning which exerts an effect on the innovation.

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