Impact of Investment in Human Resource on Market Acuity

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Purpose: This paper aims to study the effect of investment in human resource on market acuity in knowledge-based manufacturing industries of Iran, and also to answer the question if specificity of human capital on organizational level is a mediator between investment in human resource and market acuity. Design/Methodology/Approach: The conceptual model was designed based on relevant literature. This model was tested on a model obtained from knowledge-based manufacturing industries. Structural equations model was also used for data analysis. Findings: The results from data analysis showed that investment in human resource can create market acuity in organization through investment in procurement of manpower from inside the organization as well as through investment from outside the organization. Besides, investment in human resource indirectly affects market acuity through mediator of specificity of human capital. Limitations/Implications: Limitation of this research was related to data collection from knowledge-based industries, because Iranian such organizations hardly provide information to researchers. Practical Implications: Top managers of organization must focus on the role of market acuity, and create and improve it. For this reason, they must create market acuity in organization and enjoy its benefit through making due investment in human resource, and taking due measures related to procurement of manpower from inside and outside the organization. Originality/Value: This study is the first to study effect of investment in human resource on market acuity in Iranian knowledge-based manufacturing industries, and to test and confirm the proposed model through collection of real data. Literature has studied effect of investment in human resource on competitive advantage, but its effect on market acuity had not been studied before. Also, its indirect effect on market acuity through mediator of specificity of human resource is discussed here.

INTRODUCTION

In the world today, organizations are subject to many changes. High environmental turbulence can disturb corporate operation. For this reason, planning is a very hard task in such environments. Under such circumstances, many organizations gain competitive advantage from traditional resource (Bartlett & Goshal, 2005).

During industrial revolution, organizations relied on tangible assets to create wealth, but today, knowledge-based organizations and industries rely on intangible assets (Stewart, 2004). Managers today work in an era when real capital of organizations is human capital. In fact, leading organizations can gain competitive advantage over other organizations through use of intelligent and knowledge producing humans (Thurow, 1999). Change in competitive environment has resulted in introduction of resource-based view. Resource-based view has shifted strategic focus of organizations from outside environment to resource available inside the organization (Wernerfelt, 1984). With introduction of Resource-based view, focus has been placed on human resource management. There is experimental evidence supporting contribution of human resource to an organization (Paauwe & Boselie, 2006). Some researches believe that human resource managers must demonstrate the role of human resource on competitive advantage in order to make sure that human resource has a strategic role (Peffer, 1994; Huselid et al., 1997).
Therefore, for determining strategic role of human resource in an organization, it is important to study return on investment in human resource. Recent studies suggest mediatory variables between measurement of human resource measures and organization’s competitive advantage (Delery & Shaw, 2001; Becker & Gerhart, 1999; Wright et al., 2001).

In literature, mediatory variables are dimensions of organizational human capital. Therefore, it is reasonable to study mediatory role of human resource.

Since organizations today are faced with uncertainty and changes, agility and strategic agility have become necessary. Therefore, it is necessary to make investment in principal resource of organization, i.e., human resource in a way to result in strategic agility (Ojeha, 2008; Doz & Kasonen, 2008; Aretetta & Giachetti, 2004; Yusuf et al., 1999; Dove, 2001; Goldman et al., 1995; Sharifi & Zange, 1999).

Market acuity is organization’s ability to clearly see the competitive environment and to predict opportunities, and is an important factor creating strategic agility.

Although there had been studies on effect of investment in human resource and competitive advantage, there has been no study on effect of investment in human resource on market acuity, which is one of the infrastructures of market acuity. Therefore, the present research provides a model that studies the relation between investment in human resource and market acuity. Literature of this research is related to human resource and human capital, marketing and market acuity.

The primary question of this research was model is a good model for market acuity considering human capital.

Therefore, in this research, three main factors were considered, and research hypotheses were made based on causal relationships between these factors. Hypotheses cover direct and indirect effect of investment in human resource on market acuity. For indirect effect of investment in human resource on specificity of human capital, causal relation between dimensions of investment in human resource, i.e., procurement of human resource from inside the organization and procurement of human resource from outside the organization were considered. Besides, effect of specificity of human capital on market acuity was discussed in another hypothesis.

This paper is based on conceptual model of investment in human resource-based market acuity. And, literature and real data obtained from knowledge-based manufacturing industries were used. LISREL Software was used in statistical part. In this paper, first literature is presented, then, conceptual model, methodology and data analysis are discussed. In the end, conclusion and suggestions are provided.

**Literature:**

Until early 1950, most managers imagined major factor involved in success of business was financial and tangible capital. However, the true has become revealed that financial and tangible capital of organizations do not accelerate their success, but rather, organizations enjoying skilled and specialized human capital have succeeded to properly use their financial and tangible capital to accelerate their development and growth. Therefore, focus is rather on human capitals than tangible capital.

Investment in human resource refers to allocation of resource of an organization to procurement of required human resource. Investment in human resource has two forms: investment in human resource from inside the organization and investment in human resource from outside the organization (Ellingeret, 2005; Huselid et al., 1997; Arthur, 1992; Mac Duffie, 1995).

Investment in human resource from outside the organization is the investment in human resource that focuses on procurement of human capital from outside the organization, and is measured through human resource measures such as human resource planning, widespread recruitment, and competitive wage (Youndt et al., 2008).

Investment in human resource from inside the organization is a type of investment in human resource that focuses on development of human resource available inside the organization, and is measured through human resource measures such as structured training, in-service training, involvement of personnel, proper performance evaluation, and performance-based pay (Williamson, 1981).

Researches has been made on effect of human resource on organization (Chuang, 2004; Boxall & Steeneveld, 1999; Chan et al., 2004; Newbert, 2008).

Recently, researchers have studied several concepts as potential chains in the relation between human resource, organizational competitive advantage and performance. Delery & Shaw (2001) believed such concepts were desertion of office work and job security (Delery & Shaw,2001).


Given the literature, it can be proposed that investment in human resource can be related to market acuity, and a mediatory role can be considered for human capital between investment in human resource and market acuity.
acuity. However, no literature was found that explicitly referred to direct or indirect effect of investment in human resource on market acuity.

Emphasis on human capital and its important is seen in resource-based view (RBV) (Barney, 1996). Resource-based view is an organizational level analytic instrument (Peteraf & Barney, 2006). Definition by Barney (1996) of organizational resource included all assets, capabilities, organizational process, information, knowledge, and the like, which are controlled by an organization, and enable it to develop and implement strategies to improve efficiency and effectiveness. Such resource can be categorized into physical capital resource, human capital resource and organizational capital resource.

He stated that in order for a resource to be a source of sustainable competitive, it must have four features: (Barney, 1996)

1. It must be valuable; 2. It must be rare; 3. It must be inimitable; and, 4. It must be not substitutable.

Despite debates and criticism over usefulness of RBV as a theory (Prime & Butler, 2004), its proposed features can result in competitive advantage (Wright et al., 2001).

According to RBV, human capital is considered as an intangible asset (Barney, 1996). Human capital is an intangible resource, and the broadness of its concept has resulted in it being defined differently by different researchers. Chen & Lin (2004) defined human capital as talents and technologies resulting in competitive advantage, and are valuable, and unique, and must be kept out of reach of other organizations. Such definition focuses on specificity of human capital on organizational level, which is stress and used in the present research (Chen & Lin, 2004).

Specificity of human capital is defined as what is learned via “learning through doing”. Indicators of specificity of human capital are measured through knowledge level, skill level, personnel’s capability, and non-transferability (Williamson, 1981).

He stated that continuation of employment relationship in human asset specific to a particular organization is a source of valuable, and must be preserved through internal governance structure.

Becker (1964) also proposed that specific human capital resulted in improved performance through reduced desertion. Specific human capital is a source of sustainable competitive resource, because its development is time-consuming and it is hard to find a substitute for it in the market (Becker, 1964).

According to RBV, the organization’s specific human capital constitutes a rare resource (Preteraf & Barney, 2006).

Definition provided by the present research for specificity of human capital is based on definition provided by Williamson (1981).

Since except for Ojeha (2008), there was no literature that explicitly referred to investment in human resource, at the same time as considering the role of mediator of human capital on market acuity, such causal relationship was studied in this research.

Market acuity is defined as ability of organization to clearly see the competitive environment and to predict opportunities (Menor & Roth, 2007; Rosenzeig & Roth, 2007).

Market acuity enables organization to predict customers’ requirements and competitors’ moves. Therefore, market acuity enable the organization be more sensitive to customers’ requirements and preferences and marketplace. Also, market acuity provides information regarding undiscovered market opportunities. As a result, organizations can improve their success hyperactively (Powell, 1995). When organizations acquire such competency, i.e., market acuity, they can turn customers’ requirements into competitive capabilities, providing better products to customers through strategic measure (Clemons & Spitler, 2003). Market acuity can also help organization become aware of external factors of market such as competitors and business environment. It also allows organization to supervise over the business environment, communicate with it, and navigate in it (Rosenzweig & Roth, 2007). In this research, indicators for measurement of market acuity included identification of new markets, ability to predict new competitive opportunities and threats, ability to better understand customers’ requirement than competitors do, as well to discern the strengths and weaknesses of the competitors; in which regard, works of Ojeha (2008), Rosenzeig & Roth (2007), and Mener & Roth (2007) were used.

Conceptual Model:

There is no explicit reference to causal relationship between investment in human resource and market acuity. However, Ojeha (2008), in his research that had a knowledge-based approach, noted effect of some factors on market acuity. That is, he implicitly noted that investment in human resource was among the factors affecting market acuity.

Thus, the following hypotheses were proposed in this research:

H1: Investment in human resource affects market acuity.

Effect of investment in human resource on market acuity has not been explicitly referred to in literature. However, literature in the field of workplace and industrial relationships confirms relationship between individual human resource measures and different aspects of personnel’s characteristic (Michie & West, 2008).
Specificity of human capital is among the characteristics of human resource in organization, and higher investment in human resource is very likely to result in improvement of human capital, and its important aspect, i.e. specificity of human capital.

H₃: Investment in human resource has an effect on specificity of human capital.

Given measures related to investment in human resource from inside and outside the organization, this hypothesis comprises the two following secondary hypotheses:

H₃-1: Investment in procurement of human resource from inside the organization affects specificity of human capital.

H₃-2: Investment in procurement of human resource from outside the organization affects specificity of human capital.

Effect of specificity of human capital on market acuity is not explicitly referred to in literature. However, literature supports effect of human capital on competitive advantage of organization (Becker, 1967; Michie & West, 2008).

Since market acuity has an important role in organizational acuity, and strengthens competitive advantage, it is assumed that specificity of human capital strengthens market acuity in organization. Hence the following hypothesis:

H₄: Specificity of human capital affects market acuity.

On the other hand, literature on investment in human resource suggests that various investments in human resource affect competitive advantage through mediator of specificity of human capital (Barney, 2001; Baron & Dreps, 2002; Bartlet & Ghoshal, 2005).

Therefore, in this research, hypothesis of role of mediator of specificity of human capital in relationship between investment in human resource and market acuity was considered.

Given the research hypotheses and relationships between variables, the conceptual model is proposed as follows:

**Fig. 1: The Conceptual Model.**

**Methodology:**

This is an applied and developmental research in terms of objective. Data collection was carried out using descriptive survey method, based on structural equations model. The statistical population comprised Iranian knowledge-based manufacturing industries in 2013 and 2014. However, from among knowledge-based manufacturing industries, electronics, software and biotechnology industries were selected. There are 898 companies operating in the said industries in Iran. Sample size was 270 organizations based on Morgan’s tables. However, in this research, 332 questionnaires were collected. Questionnaires were completed by top managers and 5 academic experts confirmed the questionnaire.

The questionnaire was developed using the available theoretical framework. Before administering the questionnaire, its items were confirmed by 5 top managers of knowledge-based industries, and 5 academic specialists.

To measure reliability of the questionnaire, a pre-test was carried out, in which 30 questionnaires were administered. Cronbach’s α of 0.85 was obtained, which showed the research was reliable, because α adequacy value is 0.7. The following table shows statistical population, and sample size.

**Table 1: Population & Sample.**

<table>
<thead>
<tr>
<th>sample</th>
<th>The population</th>
<th>industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>332</td>
<td>898</td>
<td>Knowledge based Industries</td>
</tr>
</tbody>
</table>
Development of Scale & Measurement of Variables:
Dimensions and variables of research were determined based on the relevant literature, and were reviewed and revised by experts. To measure variables of investment in human resource, specificity of human capital, and market acuity, Lickert’s five-point scale was applied.

Dimensionality, Reliability & Validity:
In researches, we should make sure of goodness of measurement scale. Variable of investment in human resource had two dimensions in this research: 1. investment in procurement of manpower from inside the organization; and, 2. investment in procurement of manpower from outside the organization. Variables of specificity of human capital and market acuity have no dimension.
Cronbach’s α confirmed validity of questionnaire. Validity of variable was evaluated using confirmatory factor analysis. Two types of model fit indices, goodness of fit and badness of fit, were considered for each variable. ($\chi^2$/df, RMSEA, AGFI, GFI, NFI and CFI variables using LISREL software). Tests were carried out with confidence level of 95%.

Analysis and Discussion:
In this research, goodness of fit of variable measurement models was specified using confirmatory factor analysis, and is provided in the table below.

<table>
<thead>
<tr>
<th>CONSTRUCTS</th>
<th>Market Ecuity</th>
<th>Specificity of Human Capital</th>
<th>Investment in Human Resource</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\chi^2$/df</td>
<td>2/70</td>
<td>2/50</td>
<td>2/33</td>
</tr>
<tr>
<td>RMSEA</td>
<td>0/07</td>
<td>0/03</td>
<td>0/03</td>
</tr>
<tr>
<td>AGFI</td>
<td>0/90</td>
<td>0/98</td>
<td>0/89</td>
</tr>
<tr>
<td>GFI</td>
<td>0/92</td>
<td>0/93</td>
<td>0/91</td>
</tr>
<tr>
<td>NFI</td>
<td>0/94</td>
<td>0/95</td>
<td>0/93</td>
</tr>
</tbody>
</table>

To test the conceptual model and hypotheses, structural equation model was used. Path diagram of research model is provided below. In diagram below, values outside parenthesis denote standard path coefficients, and values inside parenthesis denote significance values.

Fig. 2: Structural Equation Model.

Results from data analysis showed that, in structural equation model, the factor loading of all paths is above 0.3, except for the path related to effect of investment in procurement of manpower from outside on specificity of human capital. Significance value for $T$ is above 1.96.

$H_0$: There is a causal relation between the two factors.
$H_1$: There is no causal relation between the two factors.
Null hypothesis is rejected, and hypothesis one is confirmed, because significance values were higher than 1.96.

In structural equation model, investment in human resource’ effects on specificity of human capital was 0.38, and its direct effect on market acuity was 0.35. Effects of dimensions of investment in human resource, i.e., investment in procurement of manpower from inside the organization and investment in procurement of manpower from outside the organization, were 0.32 and 0.19, respectively. Thus, investment in procurement of manpower from inside the organization has a higher effect on specificity of human capital, compared with investment in procurement of manpower from outside the organization. Besides, indirect effect of specificity of human capital indirectly on market acuity was 0.18. Total effect (direct effect plus indirect effect) of investment in human resource on market acuity was 0.53, which was significant.
Results from data analysis suggested that all research hypotheses were confirmed.
Confirmation of research hypotheses is consistent with research of Ojeha (2008), which explicitly confirmed the effect of investment in human resource and human capital on market acuity.

Also, the results of this research confirm mediatory effect specificity of human capital. This is consistent with Michie & West (2008), Baron & Dreps (2002), and Bartlet and Goshal (2005), which supported better management of human resource for the purpose of increasing human capital, and proposed human capital as a source of competitive advantage.

Conclusions:

In this research, a model was proposed for achieving market acuity through investment in human resource. This model was designed for Iranian knowledge-based manufacturing industries. This model was designed based on relevant literature. Data was collected using questionnaire, which was designed based on five-point Likert’s scale. After data collection, research’s hypotheses were tested. Hypothesis of effect of investment in human resource on market acuity was confirmed. Also, hypothesis of effect of investment in human resource on specificity of human capital, and hypothesis of effect of specificity of human capital on market acuity were confirmed.

Given the results from data analysis that suggested importance of investment in human resource in organizations, managers of knowledge-based manufacturing industries and similar organizations must pay attention to human capital and procurement of human capital. Procurement of human capital both from inside and outside must be carried out through proper measures and accurate planning, so that both quality and quantity of human resource are improved and optimized in organizations. Managers must consider that allocation of budget to procurement of competent human resource doesn’t impose any cost on the organization in effect, because they will earn the return on such investment shortly. It is because making proper investment in this regard results in specificity of human capital and increased specificity of human capital affects market acuity. Market acuity is a capability that contributes to organizational agility and strategic agility, and brings many benefits to the organization in the rapidly changing environment.

Limitations of Future Research:

Limitation of this research came from data collection from organizations operating in knowledge-based manufacturing industries, because such organizations hardly provide researchers with access to their data, especially when such data is related to important and strategic resource of organization, i.e., human resource. Although questionnaire did not include the name of respondents, telephone talk, then, personal interview were used to make sure accurate data was collected.

For future researches, it is suggested that researchers study effect of investment in human resource on other dimensions of human capital, such as, fit, quantity, and complementarity. Also, the mediatory role of such factors can be investigated in the relationship between investment in human resource and market acuity.

REFERENCES


