

# The Effects of Knowledge Management on Human Capital towards Organizational Innovation

Wan Norhayate Wan Daud, Fakhrol Anwar Zainol, Maslina Mansor

**Abstract**—The study was conducted to produce case studies from the Malaysian public universities stands point East Coast of Malaysia. The aim of this study is to analyze the effects of knowledge management on human capital toward organizational innovation. The focus point of this study is on the management member in the faculties of these three Malaysian Public Universities in the East Coast state of Peninsular Malaysia. In this case, respondents who agreed to further participate in the research will be invited to a one-hour face-to-face semi-structured, in-depth interview. As a result, the sample size for this study was 3 deans of Faculty of Management. Lastly, this study tries to recommend the framework of organizational innovation in Malaysian Public Universities.

**Keywords**—Human Capital, Knowledge Management, Organizational Innovation, Public University.

## I. INTRODUCTION

THIS development of Public Higher Education Institution (HEI) is one of the factors closely together with the nation's development requirements [14]. From another perspective, universities play a critical role in contributing towards fulfilling the needs of the development process in a holistic manner which includes the economical, political, social and technological development [18]. In realizing the national development goals, the university should act as the organization creating a well-informed, skilled, self-motivated and professional. Human capital through training, revised teaching methods, increase the opportunities for access to higher education, in helping to promote the country as a center of academic excellence, while taking the lead in creating new fields of knowledge through research activities [23].

The concept of innovation is always current. All technological groups and organizations are interested to know as to what influence the results they achieve, how and why they succeed or fail. Belief that their results relate to organizational innovation has continued to inspire questions and research on the subject by professionals and academics [13]. With the rapid improvements in technology and the

volatile economic environment, knowledge management has become a necessary and critical part in the enhancement of a firm's competence. In this environment of rapid changes and uncertainty, where market demands keep changing, the only way for an organization to make a breakthrough and obtain a competitive advantage is through knowledge management.

It is reported that interest in knowledge management practices in Malaysia is still growing, especially among Malaysian universities. Institutions of higher education need to gear up for a massive increase in the demand for educational services. Universities may be required to pool their resources in terms of human expertise, skills and competencies to achieve their goals. As such, these challenges which occur as a result of change and transformation demands that universities come to grips with the notion that collaboration is one of the means of competitive survival. The truth is, big multinational companies still lead the way, but a number of large corporations in the country are beginning to take their steps down the knowledge management road. Knowledge management is also creeping up the government agenda, affecting both the government's vision for the country as a whole and the way ministerial departments operate on a day-to-day basis [26].

Nonaka and Takeuchi [22] agreed that knowledge and human capital as a company's primary source of production and value. Human capital, which is recognized by organizations as the strategic value of human assets, is a collective value of the workforce. Human capital is not the worker in a company- it is what that person brings and contributes to the success of the organization. Human capital is the collective value of capabilities, knowledge, skills, life experiences, and motivation of the workforce [1]. Also called intellectual capital to reflect the thinking, knowledge, creativity, and decision making that people in organizations contribute, human capital includes these organizational contributions [16]. In addition, the importance of knowledge management within an organization - knowledge is an organization's only appreciable asset and knowledge work continues to increase. Knowledge and knowledge management are recognized as valuable corporate resources in the same vein as land, buildings, financial resources, people, capital equipment, and other tangible assets [17]. Hence, this study attempts to identify the relationship between organizational innovation, knowledge management and human capital of Malaysian Public Universities in the east coast states of Malaysia.

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## II. LITERATURE REVIEW

This section presents the concept of organizational innovation of the Malaysian Public Universities in the East Coast states of Peninsular Malaysia by discussing how it was measured. Further discussion is on the findings of previous studies on the impact of the human capital and knowledge management towards Malaysian Public Universities' organization innovation.

### A. Theory Underlying

Resource-Based View Theory (RBV) is chosen as the underlying theory for this study. Recent developments in the study of the resource-based view (RBV) of the firm have expanded the scope and nature of resources that a firm may acquire or develop in pursuit of sustainable competitive advantage [24]. The resource-based research on organizational innovation is based on the fundamental premise that organizational resources and capabilities are those that underlie and determine a firm's capacity for innovation. Within this perspective, organizational resources (tangible and intangible) are taken to provide the input that in turn is combined and transformed by capabilities to produce innovative forms of competitive advantage.

From the resource-based view perspective, innovation does not come simply from scanning the external environment for market opportunities, but from looking inside and build on the human capital and core competencies of the organization [10]. The relationship between RBV and innovation is bilateral. By this mean that while RBV expands the knowledge of the factors that determine the firm's capacity to innovate, at the same time innovation is one mechanism through which a firm can renew the value of its assets.

### B. Organizational Innovation

Today, innovation has caught the attention of many scientists and researchers from different majors and it is of great importance in the modern and varied organizations which are completely prepared for competition to the rival organizations and maintaining their position in this variation cycle. Innovation is regarded as a critical factor in organizations to create value and stable competitive advantages in today's complicated and variable environment. The organizations with greater innovations will act successfully in response to the variable environments and in the creation and development of new capabilities which let them get a better performance [6].

[8] Organizational innovation has been widely defined as the creation of new ideas and new behaviors to the organization. The literature can be broadly classified into three different streams, each with a different focus and a set of different questions which it addresses. Organizational design theories focus predominantly on the link between structural forms and the propensity of an organization to innovate [7], [19].

The importance of the studies of innovation rates rather than a case study of a single innovation must be stressed. In the math analysis of Damanpour (1991) [9], he found that the

greater the number of innovations considered in the research study, the more consistent the findings. This is an important conclusion, namely, that the focus on rates of a phenomenon will produce more consistent results than the analysis of a single event. Here lies one of the major methodological reasons why organizational sociologists have not always been able to observe an accumulation of findings.

Organizational innovations can be more or less complex. Some affect a certain business process (e.g. re-engineering of the purchasing process), while others affect every single part of an organization. An organizational innovation creates long-term competitive advantages if it meets one or more of three conditions: "The innovation is based on a novel principle that challenges management orthodoxy; it is systematic, encompassing a range of processes and methods; and it is part of an ongoing program of invention, where progress compounds over time". This would mean that the organizational innovation needs a certain degree of 'new-to-the-state-of-the-art' and/or corporate coverage in order to create competitive advantages long-term. Further, the organizational innovation is preferably part of a larger program of the inventions. An example of this kind of organizational innovation is Total Quality Management (TQM). TQM is built on a strong belief in the problem-solving capacity of employees, so the innovation introduced a high focus on the empowerment of employees. This "mental model" is quite different from the Tayloristic view where employees are to follow instructions and do repetitive tasks designed by specialists. Further, it is an innovation that involves several parts of the organization, which together create success of a firm.

In general, human capital is an issue concerning attraction, retention, development and reward for people in order to create and maintain a skilled, committed and well-motivated workforce. Human capital consists of intangible resources that workers provide for their employers. Bontis (1999) [5] defined "human capital as representing human factor in the organization; the combined intelligence, skill and expertise that gives the organization its distinctive character. The human elements of the organization are those that are capable of learning, changing, innovating and providing the creative thrust which if properly motivated can ensure the long-term survival of the organization".

### C. Measuring the Value of Human Capital

The value of human capital is inherently dependent upon its potential to contribute to the competitive advantage or core competence of the firm. The recognized importance of achieving human capital advantage has led to an interest in the development of methods of measuring the value of that capital for the a few reasons by [4]. Human capital constitutes a key element of the market worth of a company and its value should therefore be included in the accounts as an indication to investors or those contemplating a merger or acquisition of the total value of a business, including its intangible as well as its tangible assets. Measurement of the value of human capital can provide the basis for resource-based HR strategies that are

concerned with the development of the organization's core competencies.

#### *D. Knowledge Management*

Knowledge management plays a big part in human capital and organizational structure capital [2]. Key processes of knowledge management greatly develop human capital [11] and as a result knowledge, skills and abilities are enhanced.

Knowledge management has a special relationship with human capital [15]. The author had conducted three cases of knowledge management in HRD office. Each of the officers employed 15 to 20 HRD professionals. Finding of this research, showed a positive relationship between human capital and knowledge management. HRD professionals can be considered to be knowledgeable about knowledge management practices in their offices [20].

#### *E. Empirical Research*

##### **1. Human Capital and Organizational Innovation Relationship**

Previous research has identified human resources as important sources of innovation and competitiveness – but not all employees have strategic value. Only human resources that are valuable, rare, unique and organized can provide a competitive advantage. They added other employees who perform secondary, repetitive tasks are not generating value. This perspective has important implications for research in HRM and is compatible with both the resource based view of the firm and the knowledge-based view. According to [4], firms can generate human capital advantages by recruiting and retaining outstanding people, i.e. by capturing a stock of exceptional human talent. To be a source of sustained competitive advantage, human resources must be scarce and inimitable (possessing specific knowledge, skills and abilities), and their knowledge and skills must also generate value for the customer. All of these arguments and ideas are contained in the concept of human capital. The human capital of an organization is defined as 'the knowledge, skills, and abilities residing with and utilized by individuals' [25]. Because the knowledge possessed by a firm's personnel is closely connected to its products and services, it is clear that a firm's ability to produce new products and otherwise extend its organizational capabilities is inextricably linked to its human capital. In this sense, the most distinctive and inimitable resource available to firms is embodied knowledge, which enables firms to manipulate and transform other organizational resources effectively. Furthermore, knowledge-based resources may be particularly important in providing a sustainable competitive advantage [21] because they play an essential role in the firm's ability to innovate. Therefore, it can be inferred that competitive advantages are derived from knowledge, technological skills and experience, which together allow new products to be created.

A human resource management practice leaves stronger impact on innovation patterns of any organization. If an organization can manage its human resources in a productive and efficient manner then it can enhance the innovation rate of

its products and services [12].

Bahrami, Rajaepour, Aghahosseini and BakhtiarNarsabadi [3] studied on simple and multiple relations between strategic human resource management and organizational innovation at Iranian Universities and revealed that strategic human resource management practices and organizational innovation were positive and significant. There is also a significant multiple relation between strategic human resource management practices and administrative and technical innovation in the universities. Knowledge management plays a big part in human capital and organizational structure capital [2]. Key processes of knowledge management greatly develop human capital [11] and as a result knowledge, skills and abilities are enhanced.

##### **2. Human Capital and Knowledge Management Relationship**

Organizational knowledge management capability, the ability of an organization to generate new knowledge through its employees, is one intangible resource that has received increased attention. The researchers found that strategic human resource management configurations are significantly related to organizational knowledge management capability through the influence on workforce characteristics (human capital, employee motivation and employee turnover).

Since knowledge management is dependent upon the knowledge and motivation of individuals within the organization, it seems likely that organizational practices and policies that affect the human resource of the organization will be one of the major factors that underlay organization's knowledge management capabilities. Thus, it appears that human capital may have a strong potential to be a key driver of an organizational innovation to create knowledge.

Firms can generate human capital advantages by recruiting and retaining outstanding people, i.e. by capturing a stock of exceptional human talent [4]. Because the knowledge possessed by a firm's personnel is closely connected to its products and services, it is clear that a firm's ability to produce new products and otherwise extend its organizational capabilities is inextricably linked to its human capital.

##### **3. Human Capital, Knowledge Management and Organizational Innovation.**

Knowledge management represents the mediator variable in this study. Previous studies have examined the role of knowledge management as a mediator. For instance, Wahyu, Hana, Troena, Nimran and Rahayu[27] proved that knowledge management mediates the relationship between entrepreneurial orientation and organizational innovation. The result of this research showed that, entrepreneurial orientation both directly and indirectly through the knowledge management affected innovation performance. The finding of this research highlighted the critical roles of human capital and knowledge management in enhancing innovation performance.

### **III. METHODOLOGY**

This study is a qualitative research design using an

exploratory method. Given the exploratory nature of this study, a purposive sample of 3 participants was used as the sample. Through case study, a method as defined by Yin [28] as an empirical inquiry that investigates a contemporary phenomenon within its real life context, addresses a situation in which boundaries between phenomenon and context are not clearly identified and uses multiple sources of evidence. The case study approach provides opportunities to conduct exploratory, explanatory and descriptive research. Case study strategy has a distinct advantage when “(how)” or “(why)” questions are being asked about a contemporary set of events over which the investigator has a little or no control [29].

A census of the Faculty of Management from the three public universities in peninsular Malaysia will be used for this study. All the three (3) Faculties of Management from public university will be targeted as a sample. A good informant is one who has the knowledge and experiences, the ability to reflect and the time and willingness to participate. The rationale behind choosing only three (3) Faculty of Management as population is because the researcher is interested to conduct a survey on the faculty that offered the management program.

Therefore, the unit of analysis is an organization from the Faculty of Management in Malaysian Public Universities situated in the east coast of Peninsular Malaysia. The dean of the faculty will represent the organization as a unit. The case study report will be geared towards the Universities as the case.

#### IV. FINDINGS

The findings of this study pertaining to the perception of human capital, knowledge management and organizational innovation among Management Faculty Deans of Universities in east coast states of peninsular Malaysia. The purpose of this study is to address the questions of (i) what are the factors of human capital towards organizational innovation? (ii) what are the effects of knowledge management towards organizational innovation? and (iii) how does concept model in linking between human capital, knowledge management and organizational innovation?

Findings are related to the three research questions. Based on the research question (i), the deans' perceived factors of human capital have relationship with organizational innovation. Research questions (i) in this study have been answered by Deans' perception that there were seven dimensions of human capital consist of talent, specialization, administrative and support staff, new ideas and knowledge, teamwork, IT skills and handling stress have impact to the organizational innovation in the faculty. Furthermore, the Deans also perceived that human capital talent should consist of participative, good level of education and work experience. Administrative and support staff of the faculty should possess into job design and duties, rotation and learning of other language in order to increase their innovativeness. The staffs need to communicate their new ideas and knowledge in the meeting, group discussion or informal conversation. They can always communicate their new ideas and knowledge by

writing research articles too. The staffs may express their feelings to their friends or take a holiday break purposely of handling the work stress. It gives benefit to faculty by receiving new fresh ideas and knowledgeable staff to help increase and achieve organizational innovation.

Second finding was answered the (ii) research question. The Deans perceived knowledge management has relationship with organizational innovation. Deans' perceived that there are four dimensions of knowledge management consisting of sharing of information, apply new concept, valued creativity and new thought, and recorded document for decision making could have an impact on organizational innovation in faculty. Furthermore, the Deans also perceived that sharing information in knowledge management should communicate through mailing system, letters, meeting and social network. New concept application in knowledge management can be convey via experiences and skills. Valued the staff creativity and new thought were important aspect to achieve organizational innovation. Besides that, document for decision making also significant towards knowledge management process and it will contribute to the organization innovativeness.

Finding 3 was answered the research question (iii). The Deans perceived that human capital through the knowledge management process could affect the organizational innovation in faculty. Research questions 3 in this study has been answered by Deans' perception that human capital and knowledge management have significant relationship with organizational innovation. The data collected suggested that the Deans perceived that human capital and knowledge management are vital in running the organization in order to meet the objectives and increase innovation.

View Theory (RBV) in explaining the effectiveness of human capital and knowledge management for Malaysian Public Universities in the East Coast State of Peninsular Malaysia in order to achieve excellent innovation. Based on the survey, it has precisely validated that the implication of this theory can be articulated that human capital and knowledge management have significantly proven to enhance organizational innovation of the university by providing competitiveness through human capital and knowledge management adoption.

Based on the survey conducted, knowledge management was identified as the missing link in the human capital and organizational innovation relationship. Identified as a mediating factor, knowledge management is considered as a very important factor in creating and increasing competitiveness towards the achievement of higher innovation. Therefore, this study supported the previous study whereby human capital was conceptualized as one of organizational resources. Human capital is taken to provide the input that combined and transformed the capabilities to produce innovative forms of competitive advantage.

Referring to the deans perceptions, this study affirmed that Malaysian Public Universities in the East Coast State of Peninsular Malaysia have performed moderately and moving towards a better innovation level. The new framework has

been developed from the results of this study. It shows that knowledge management mediates between human capital and organizational innovation. By having human capital (talent, specialization, administrative and support staff, new ideas and knowledge, teamwork, IT skills and handling stress) in universities, it has positively the organizational innovation that contributes to better universities performance. These results indicate that it is important to have a good human capital within universities in order to achieve the universities goals. Therefore, this study has proven that human capital is beneficial to the organizational innovation of Malaysian Public Universities in the East Coast State of Peninsular Malaysia.

Knowledge management can be considered as one of the contributing factors towards organizational innovation. Undeniably that knowledge management is by its own plays the role of mediator between human capital and innovation of Malaysian Public Universities in the East Coast State of Peninsular Malaysia. The knowledge management dimensions included of sharing information, apply new concept, valued creativity and new thought, and recorded document for decision making have influence on organizational innovation. Also, it can be seen that universities will achieve higher innovation when they treat knowledge management as a main part of universities' strategic management approach in order to increase their reputation.

Moreover, other implication which can be seen in this study is the existence of knowledge management that intervene the relationship between human capital and organizational innovation of Malaysian Public Universities in the East Coast State of Peninsular Malaysia. In other words, mediating relationships exist whereby knowledge management plays an important role in governing the relationship between the two variables. The analysis of this study discovered that four knowledge management practices applied were strongly interrelated and also significantly influenced between human capital and innovation of Malaysian Public Universities in the East Coast State of Peninsular Malaysia.

Strategies that improve innovation draw the attention of managers. The developed concept of innovation strategies gives a clear guidance on how to practice an effective management strategy through combination of human capital and knowledge management for the universities to increase innovation and achieve their goals.

Finally, a strong relationship of human capital and knowledge management with organizational innovation in this study suggested that universities which adopt this strategy should experience improvements in employees' satisfaction, loyalty, retentions and universities' ranking. Good quality of human capital and knowledge management will harmonically generate a much better innovation and performance.

#### V. CONCLUSIONS

The study attempts to investigate the relationship between human capital and organizational innovation and the mediating effect of knowledge management. The finding of this study will be useful to the top management to help

improve their product and innovation by providing adequate training for human capital on an ongoing basis.

The findings and resultant from the framework suggested causal relationships between human capital and knowledge management towards organizational innovation. This study has been answered by Deans' perception that human capital and knowledge management have significant relationship with organizational innovation. The data collected suggested that the Deans perceived that human capital and knowledge management are vital in managing the organization in order to meet the objectives and increase innovation.

Similarly, the results and conclusions of this study may stimulate dialogue within the professional community of leadership and business researchers, consultants, and coaches because they suggest that the causal relationships between organizational climate, change, and leadership style impact both the effectiveness of organizational leaders and the overall effectiveness and performance of the organization. By using the framework of organizational knowledge management, this study investigates the relationship between human capital and organizational innovation. This study also intends to emphasize human capital that is critical to the success of organizational innovation.

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