



INCREASE INTELLECTUAL CAPITAL THROUGH KNOWLEDGE MANAGEMENT

M. Chen

Program in Engineering Science and Technology, College of Engineer, National
Kaohsiung University of Science and Technology, Kaohsiung, Taiwan

M. Tsai

College of Engineering, National Cheng Kung University, Tainan, Taiwan

Email: sjm5812978@gmail.com

Abstract

Increase competitive advantage requires companies to improve the efficiency of workforce use characterized by intellectual capital (IC). Professional knowledge of staff and its experience play the key role in it. The results of Structural Equation Model analysis are performed in this article. The analysis revealed that knowledge management (KM) process impacted positively intellectual capital and mediated KM and IC. The paper suggests ways of identifying and evaluating resource transformations in organizations, in order better to understand and manage knowledge creation to grow the intellectual capital of organizations. Author suggest the way to solve the problem of insufficient knowledge in high-tech enterprises, to strengthen and control the place, and the same time understand how to transform it into intellectual capital that is beneficial to the organization during the accumulation of knowledge.

Keywords: technology management, knowledge management, knowledge sharing behaviour, knowledge stock, intellectual capital

Introduction

Discussing organizational issues from perspective of knowledge management has gradually received attention from various scholars [1-2]. It is known from previous documents that knowledge management exerts certain influence on organization effect [1]. However, an organization could not create knowledge by itself, it requires members in the organization to share knowledge mutually [3-4]. However, it is held by most people that the knowledge possessed by an individual is one of competitive resources, so they are unwilling to share it with other people without a hitch; therefore, how to effectively acquire, absorb and converting intangible knowledge will certainly increase difficulty in knowledge management [2, 5-6]. The rise of knowledge-based economy drives enterprises to gradually march toward objective of knowledge creation, the unique intellectual capital of an enterprise may be formed through knowledge creation and accumulation, even the unique competitive advantage and ability of an enterprise may be formed; in current society, the environment changes rapidly, the source for wealth creation changes from past real assets into intangible assets, especially intellectual capital formed through knowledge creation and accumulation; if an enter-

prise is to gain competitive advantage, it should flexibly utilizes manpower, structure, internal and external relations to compose intellectual capital, intellectual capital can be said to be one of key factors for competitiveness of an enterprise. Therefore, the main purpose for this research is to discuss the relevance among knowledge management mechanism, knowledge sharing behavior, knowledge stock and intellectual capital in an organization, and to give suggestions and directions on strategizing part for knowledge management mechanism in an enterprise. The innovative and contributing part of this research. Researchers hope to verify the research hypotheses through more different industry surveys and practices. Researchers will provide industry references and research suggestions through the research.

Research Hypothesis

Knowledge management mechanism and knowledge sharing behavior Knowledge sharing behavior is the key factor in knowledge management that creates organizational knowledge and performance; though individuals may easily gain relevant knowledge, they could not effectively understand it.

If some individual who knows knowledge acts as experience sharer,

then this kind of experience and implicit knowledge may be delivered to other individuals who have not learned it. Therefore, knowledge sharing behavior becomes very important in knowledge management. It is held by [7-8] that the key point in knowledge management is to externalize implicit knowledge of employees, aiming to successively conduct knowledge sharing process; it is necessary because knowledge sharing may enlarge effects of knowledge, and implicit knowledge is the source for core competitiveness of an enterprise. Many other scholars approves of importance of implicit knowledge, therefore, management on implicit knowledge in an organization may bring into play its role in an enterprise, and it is the key factor in success of an enterprise as well [9-12]; thus, the following assumption is put forth in this research:

H1: Knowledge management mechanism has positive and significant influence on knowledge sharing behavior.

Knowledge management mechanism and knowledge stock When an organization is promoting knowledge management, if without definition on knowledge, gaining method, storage method or sharing method, most of members in that organization would

make an excuse, thus the objectives in that organization could not be achieved effectively. Different knowledge or opinions may cause different concepts on knowledge management, if the existence of knowledge aims for some objective or it is the necessary path for achievement of objective, then this kind of knowledge is suitable for knowledge establishment and knowledge stock management [13]. The fluency of knowledge is also closely related to knowledge stock; if the fluency management speed of knowledge is faster, the knowledge can be stored at fastest speed and with optimum quality, thus, to reduce time of classification [14]. Knowledge stock is also equal to status of knowledge sharing behavior, it is an important item under knowledge management mechanism; the storage and reception function of knowledge management would influence intelligent assets; if a management system may save knowledge, experience, program flows and etc. of individuals completely, thus members of the organization may gain knowledge at fastest speed when necessary, and members may also express their implicit knowledge such as working and living experience, knowledge and etc. of individuals with knowledge storing system, which would increase conceptual knowledge assets; therefore, the following assumption is put forth in this research:.

H2: Knowledge management mechanism has positive and significant influence on knowledge stock.

Knowledge sharing behavior and intellectual capital The atlas of generalized chains and kinematic chains, respectively, with the required numbers of links and joints, are synthesized for obtaining all possible generalized chains that have the same number of links (N) and joints (J) as the original generalized chain. It is put forth by [15] that knowledge sharing means the ability to assist other people in developing effective behavior, while it is held by [16] that the behaviors such as complementation, interaction and conversion among individuals would make individuals or group think and act continuously, and during this process, individuals and group would combine their original knowledge with foreign knowledge to produce new knowledge, and new knowledge is produced ceaselessly in this cycle. Management method in an organization and organizational culture play a crucial role in generation and operation of intellectual capital [17-18], managers shall be good at utilizing intellectual capital, then competitive advantage in the organization may be created; however, the elementary element of intellectual capital is knowledge, and knowledge is featured with reward-increasing, through

process such as sharing, propagation and application, if more individuals are involved in knowledge sharing, the knowledge value created is higher.

Therefore, if more members participate in knowledge sharing, it is more likely to create more valuable intellectual capital, and the quality of intellectual capital would be higher; thus, the following assumption is put forth in this research.

H3: Knowledge sharing behavior has positive and significant influence on knowledge stock.

Knowledge stock and intellectual capital Knowledge management activities may activate knowledge, stimulate innovation and increase intellectual capital; the stock of intellectual capital and prospective development goals in an organization would influence the method of knowledge management activities in that organization, if the knowledge management is more active, the intellectual capital would be more abundant. Organizational practice is the stock of knowledge in an organization, and the aggregation of knowledge accumulated in organizational practice stands for knowledge stock in an organization, the organizational intellectual capital is knowledge stock accumulated in an organization, and potentially available skills, knowledge and

information flow-rate in that organization; the organization utilizes the aggregation of knowledge to gain competitive advantages, therefore, intellectual capital is knowledge, information, intelligence and experience that create value [19-20]. [21] also approved that intellectual capital was the total stock of organizational capital and with knowledge as basic resources, that intellectual capital was equal to knowledge itself or result of knowledge transfer and basic resources which enterprise activities relied on. It is held by [22] that intellectual capital exactly is knowledge resources such as experience, knowledge & mental work of employees and organizational database, systems, procedures and culture. Therefore, the following assumption is put forth in this research.

H4: Knowledge management mechanism has positive and significant influence on intellectual capital.

Successful knowledge sharing can accumulate intellectual capital and thus improve corporate performance [23]. Organization managers must make good use of intellectual capital to enable organizations to create a competitive advantage. The core of intellectual capital comes from knowledge. Knowledge has the characteristics of increasing returns. If more individuals

participate in knowledge sharing, knowledge is shared, transmitted, and applied. The higher the value of the accumulated intellectual capital, the more helpful the organization is to enhance its own value and performance. Here, the fifth hypothesis of this study is proposed.

H5: Knowledge sharing behavior has a positive and significant impact on organizational intellectual capital

Intelligent capital is the knowledge, information, wisdom and experience that create value [19-20]. [21] also agrees that smart capital is the total stock of organizational capital and uses knowledge as a basic resource. Smart capital is equivalent to knowledge itself or the result of knowledge transfer. It is also the basic resource on which corporate activities depend. [22] believes that intellectual capital is the knowledge resources of employees' experience, knowledge, brainpower, and organizational databases, systems, processes, and culture. The hypotheses proposed in this study are as follows.

H6: Organizational knowledge stock has a significant positive impact on organizational intellectual capital.

"Knowledge management" is to

provide the right knowledge to the right people at the right time and help them make the best decisions [24-25]. [26] proposed that knowledge management is part of the business process, and its content includes organizational learning, generating knowledge and disseminating knowledge. The knowledge management system is a necessary facility for this process. In addition to databases, networks, software, etc., it also contains Incentives, culture, involved team members, and more. [27] argues that knowledge management is the process of acquiring collective experience that exists within the organization and disseminating it throughout the organization to produce the greatest reward. [28] believes that organizational knowledge is used to accomplish organizational tasks. Therefore, knowledge management is a meaningful strategy that can pass the right knowledge to the right people at the right time, help people share knowledge, and Put knowledge into action to improve the performance of the organization. In addition, [21] pointed out that smart capital is the total stock of organizational capital and is the use of knowledge as a basic resource. Smart capital is equivalent to knowledge itself or the result of knowledge transfer. The hypotheses proposed in this study are as Figure 3.1 Research flow chart.

Questionnaire Recovery Situation

The analysis was revealed in the Table1. In this study, 1000 companies in Taiwan were selected as survey objects, and a questionnaire was given to the company in a convenient random sampling manner. The questionnaire was answered by the company's supervisor; the questionnaire was awarded and recovered mainly by mail. The survey time was January 2, 2019 to February 21 as of today, a total of 650 questionnaires have been sent for investigation, and 557 have been recovered. Among them, invalid questionnaires and 501 valid questionnaires have a valid recovery rate of 77.1%.

Table 1 is basic statistical analysis of sample firms, it's clear that most of sample firms are in the categories of information technology, traditional industry manufacturing and service of the people's livelihood, and these three categories take up 56.09% in total categories in effective questionnaires. It can also be seen that the value of Cronbach α in dimension of knowledge management mechanism is 0.813, that in dimension of knowledge sharing behavior is 0.836, that in dimension of knowledge stock is 0.919, and that in dimension of intellectual capital is 0.846; the value of Cronbach α for variables in four dimensions is higher

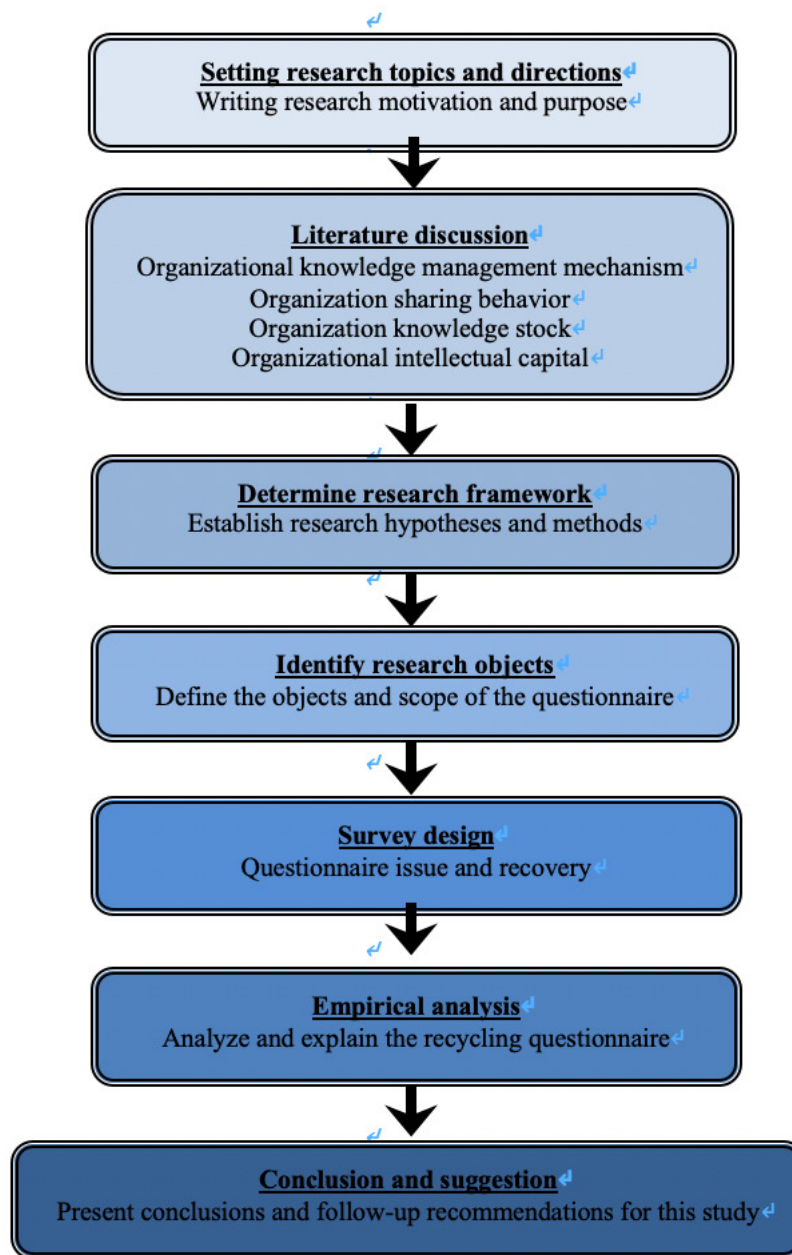


Figure 3.1 Research flow chart

Table 1. Basic Statistical Analysis

	Number of times	Percentage	Cumulative percentage
Information technology	60	11.98	11.98
Traditional industry manufacturing	152	30.34	42.32
Service of the people's livelihood	69	13.77	56.09
Retail and wholesale	45	8.98	65.07
Other	175	34.93	100
Name of variable	Item	Mean value	Value of Cronbach KMO
Knowledge management mechanism	5	4.04	0.813
Knowledge sharing behavior	4	4.33	0.836
Knowledge stock	6	3.88	0.919
Intellectual capital	4	3.85	0.846

than 0.8, it can be seen that there is good credibility for this questionnaire, i.e., the stability and reliability are excellent.

Verification of Hypothesis

The relationship between knowledge management mechanism, knowledge sharing behavior, knowledge inventory and intellectual capital is analyzed by linear regression method. It is known from Table 2 that the organization's knowledge management mechanism has a significant positive impact

on knowledge sharing behavior, knowledge stock, and intellectual capital, with coefficients of 0.599, 0.928, and 0.809, respectively. The organization's knowledge management mechanism is mainly intended to enable members to shorten the learning time of members through learning and integration, and at the same time develop a distinctive internal operation process. Through this process, the operation of the entire organization can be more perfect and create Competitive advantage to improve organizational performance. Organizations should

Table 2. Regression analysis among various dimensions

Dependent variable \ Independent Variable	Knowledge sharing behavior	Knowledge stock	Intellectual capital
Knowledge management mechanism	$\beta=0.599^{***}$ $R^2=0.425$	$\beta=0.928^{***}$ $R^2=0.61$	$\beta=0.809^{***}$ $R^2=0.531$
Knowledge sharing behavior		$\beta=0.685^{***}$ $R^2=0.280$	$\beta=0.643^{***}$ $R^2=0.283$
Knowledge stock			$\beta=0.750^{***}$ $R^2=0.644$

NOTE: “*” shows “ $p<0.05$ ”, “**” shows “ $p<0.01$ ”, “***” shows “ $p<0.001$ ”, β value is standardized value.

systematically establish a knowledge management mechanism to ensure that members of the organization share the flow and operation of the knowledge they possess in order to make the knowledge sharing behavior richer and smoother. The knowledge management mechanism is shown in Figure 3.2 .

Analysis of research results

The results of this research indicate that knowledge management mechanisms have a positive influence on smart capital, that is, "the knowledge of organizational members can be shared and circulated through the knowledge management

mechanism, and they can learn from each other to create new knowledge, and store it in the organizational structure, systems and systems. "In the process" and [29] believe that knowledge management is a process of self-organizing intangible assets to create value. This intangible asset is the intellectual capital. It can be seen that the knowledge management mechanism is a basic setting. Only after the management mechanism is consolidated and stable can knowledge sharing behaviors, knowledge stocks, and intellectual capital be brought into play, which confirms Hypothesis 1, Hypothesis 2, and Hypothesis 4 of this study.

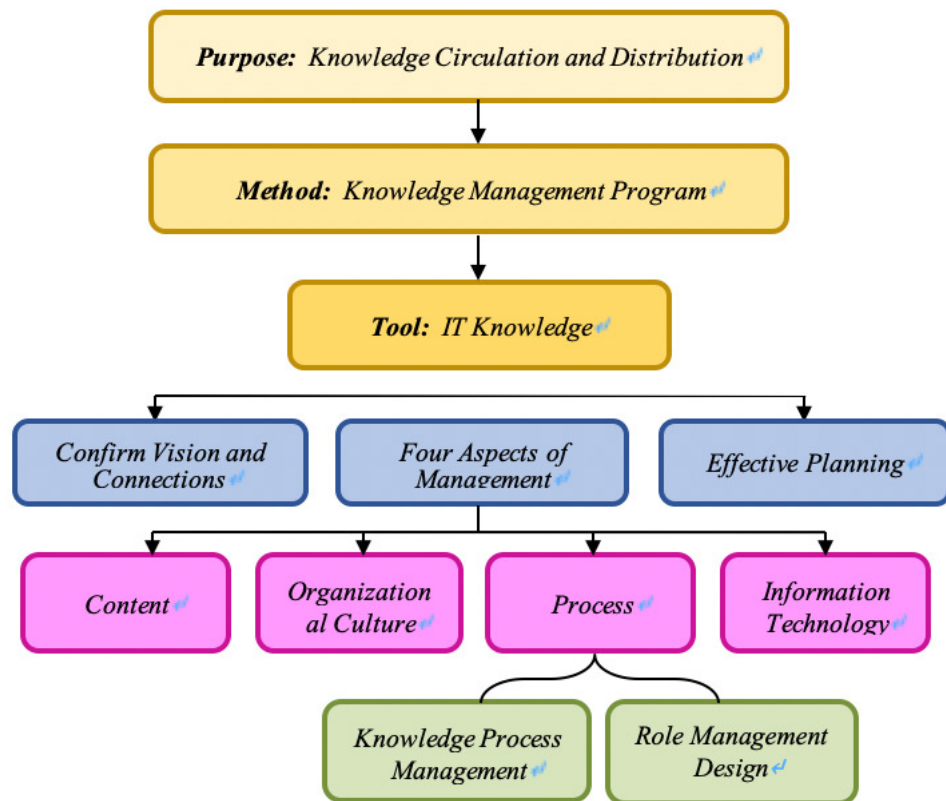


Figure 3.2 Effective knowledge management mechanism

Interpersonal relationships are the key to knowledge sharing. Both formal and informal channels can share and absorb knowledge. The faster the flow of information and knowledge, the faster the organization's competitiveness can be improved [14]. However, the faster the knowledge is shared, the better, but the hidden problem is how to effectively filter and store knowledge. The greater the amount of knowledge flow, the more it is necessary to check whether the incoming knowledge is needed by the organization. Therefore, the effective storage and filtering of

knowledge is particularly important. Therefore, the knowledge sharing behavior will affect the change of knowledge inventory, which confirms the hypothesis of the empirical results indicate that knowledge sharing behavior does affect the knowledge stock and has a positive effect, with a coefficient of 0.685 (see Table 2)

In other words, the knowledge management mechanism and organizational culture within an organization play a key role in how the organization generates and uses its intellectual

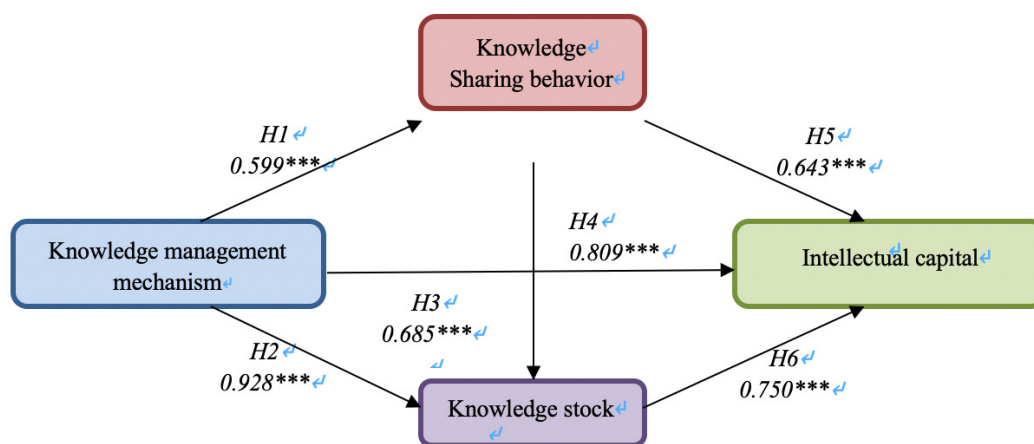


Figure 4.1: Road map of the overall theoretical model

capital [18]. Therefore, the knowledge sharing behavior affected by the knowledge management mechanism also has an impact on intellectual capital. Knowledge sharing behavior can stimulate learning and communication activities between members. If more members participate in knowledge sharing, the higher the value of knowledge, the more valuable intellectual capital can be created. Like the hypothesis 5 in this study, the empirical results in Table 2 indicate that knowledge sharing behavior has a positive and significant impact on intellectual capital (coefficient 0.643).

It is known from Table 2 that the knowledge stock has a significant positive influence on intellectual capital, with a coefficient of 0.750. The accumulated knowledge of an organization can transfer knowledge into intellectual capital through the establishment of

databases and basic resources [21], and the rich performance of the knowledge stock activates knowledge and increases the quality of intellectual capital.

Hypothesis 6 of this study is indeed consistent with the argument that “Smart capital is the accumulation of knowledge, information, wisdom and experience that creates value” by [20], confirming that the knowledge stock has a positive and significant impact on smart capital.

Conclusions And Future Research Suggestions

In the effective samples of this research, most of the company's industrial fields belong to mass production manufacturing. It can be seen that mass production manufacturing companies attach great importance to the concepts

of knowledge management. For them, only continuous innovation can continue the industrial life cycle. It is through innovation that companies can survive in a rapidly changing environment. Appropriate knowledge management can make the flow of knowledge smoother and create a culture of knowledge sharing within the organization, so that each member is willing to contribute professional knowledge. Through systematic construction, knowledge can be archived, analyzed, and reintegrated to allow new knowledge in this cycle, Researchers can constantly replace old ones with new ones.

And the accumulation of knowledge enables the organization to obtain a hidden value that is different from the outside. This value is specific and cannot be applied to other companies, because processes such as knowledge flow and filtering integration within the organization are generated for the internal strengthening of the organization. It may not be completely applicable to other companies with different attributes, so the intellectual capital accumulated through the accumulation of knowledge also has this specific attribute, so it can become an organization's unique competitive advantage. When the organization's intellectual capital is better, it means that the internal and

external relationships of the members of the organization have reached a certain standard. In addition to allowing employees to continue to share knowledge and effectively manage their operations, the organization also maintains excellent supply chain relationships with external vendors. From the knowledge management, knowledge management, knowledge sharing, knowledge inventory to intellectual capital can be said to be a process of knowledge construction, extending from the foundation to the structure, so that the organization can transform from it to better competitiveness.

The main contributions of this research:

1. This research shows that the knowledge management mechanism will have an impact on the organization's knowledge stock. It can be seen that the knowledge management mechanism is a basic setting. Only after the management mechanism is consolidated and stabilized can knowledge sharing and knowledge stock be played like (Johannessen, Olaisen, & Olsen, 2001) research is the same.

2. The accumulated knowledge of an organization may always be regarded as smart capital, and its skills can be used. Information and knowl-

edge can gain a competitive advantage, and the establishment of databases and basic resources can transfer knowledge into smart capital (Dzinkowski, 2000), and this research It is indeed consistent with the (Youndt et al, 2004) argument and confirms that the knowledge stock has a significant impact on smart capital.

Follow-Up Research Recommendations In This Study

1. Set up stratified sampling in the part of the test group, divided into the supervisor level and the employee level, and check whether the two levels have the same understanding of the research facet.

2. In the company industry part of the test object, companies in a certain industry category can be adopted uniformly, such as the medical biotechnology industry to discuss whether the industry's view on knowledge management is similar to its related operations.

3. Qualitative research methods can also be added. When the research sample is targeted at companies in a single industry, it is recommended that some representative companies should be selected for in-depth interviews, and how to target different companies and

how to address insufficient knowledge To strengthen and control the place, and at the same time understand how to transform it into intelligent capital that is beneficial to the organization during the accumulation of knowledge.

4. Bootstrap method can also be used for data analysis.

Conflicts of Interest

The authors declare no conflict of interest.

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