

The relationship between knowledge management and workforce productivity with a mediator role of strategic human resource management in Gilan Ports and maritime administration

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Abstract

Human resources as the key organisational resources, time efficient effect will be to work with management strategic vision. In a knowledge-based organisation, increasing productivity through the knowledge management. This is an applied research with descriptive research method and correlational. The statistical population of the province of Gilan Ports and Maritime Administration employees is 500 people, in order to determine the sample size, morgan table was used according to which the sample size was calculated to be 220. Descriptive statistics and frequency for Software SPSS16 and inferential analysis of structural equation modelling software, SMART partial least squares 2.0 method is used. The results showed good fit of the model created by the overall fit of 0.64. Load factor higher than 0.4 was obtained for these variables and structures, enjoyed good reliability and validity.

Keywords: Knowledge management, workforce productivity, strategic human resource management.

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1. Introduction

In order to compete in the arena of the global economy, knowledge has key and pivotal role, as far as the economy converts into knowledge economy and information economy. Knowledge management is one of the most important ways to succeed in the competitive market and this requires recognising and determining factors and taking scientific action based on such effective factors in different levels of using knowledge management system. The more capable firms which gain knowledge from inside and outside of the firm can reduce uncertainty and discover more opportunities and gain more technical benefits, therefore make more innovation in their products and services.

Knowledge management is an approach, which modifies the organisational knowledge and skills for creating value and upgrading the organisational effectiveness. Effective knowledge management, knowledge and facilitate the innovation process and innovation with a view to improve and develop new capabilities. For proper implementation and effective management of knowledge, promote an open culture, participatory and learner role in facilitating the knowledge management.

Wong defined the factors for the success of knowledge management activities as actions that should be identified to ensure the success of knowledge management. He adds that the activities or actions, if exists, have to grow up or if not there is still need to apply. These factors should be as internal environmental factors to be treated that can be controlled by the organisation, not as an external environmental forces.

Human resources as the key resources of organisation will apply with efficiency and more effectively, when it manages with a strategic approach. The strategic approach in managing human resources is in the concept of new technics and methods that organisation can rely them against unstable environment to react properly, and mobilize human resources in order to gain competitive advantage.

Strategic human resource management is a way to decide on the objectives and plans relating the following issues: employment, education, participation, compensation and evaluation of performance. The strategic human resource management also considers relationship management, human resources and strategic management of the company. It also focuses on the needs of human capital and the potential development of the process (i.e., ability to perform tasks in an efficient way). Totally strategic human resource management focuses on the major human issue or design strategy of its influence or influenced.

2. Main body of the article

Japanese researchers managed, Nonaka and Takeuchi have many effects on knowledge management principles. The concept of tacit knowledge and explicit knowledge by Nonaka's theory of organisational learning has been introduced for planning the theory. In this division, due to the convergence between overt and covert forms of knowledge, they have established a model that has become famous in their own name.

Unlike the previous models, focus on two types of explicit knowledge and tacit to convert methods and focus on making them at all of individual, group and organisational levels. By this dynamic model, the use and transfer of knowledge and how knowledge appears in this field for spiral (helical) move is as shown in Figure 2 and is assumed to be a continuous process.

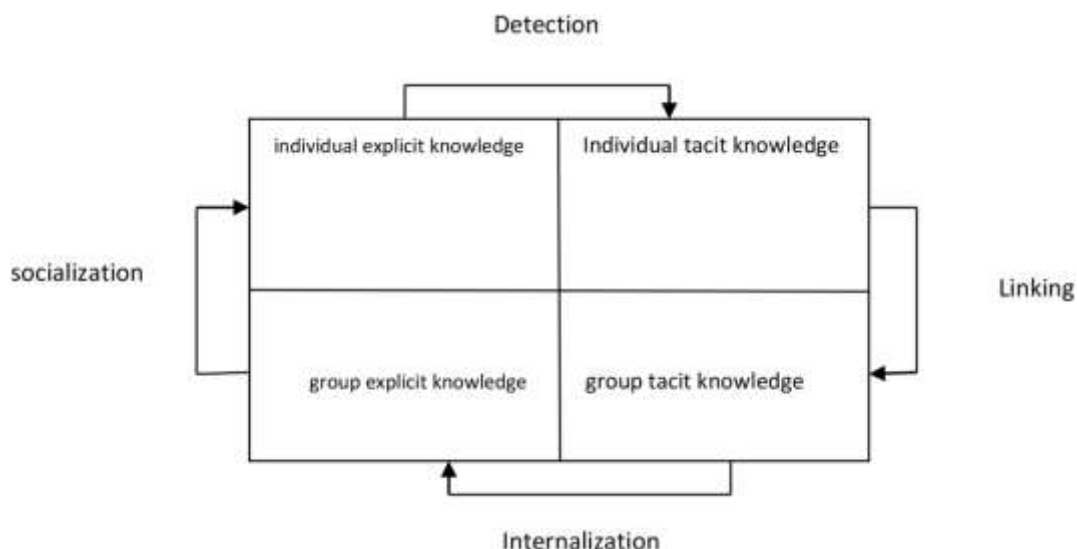


Figure 1. Spiral model of KM Nonaka & Takeuchi

Also in the same thought, it is assumed that only individuals can create the knowledge. Therefore, the production process of organisational knowledge should be a continuous process in which the knowledge generated by people, it is organised, strengthened and guided.

According to Nonaka and Takeuchi model, the following steps are to move (convert) these two types of knowledge at various levels of the organisation:

- a. Socialisation (tacit to tacit) transfer intangible knowledge of a person to another person, for the effective conduct of the process between the people, culture and the ability to develop teamwork. Using the social theories, cooperation becomes possible. Group discussing experiences, arguing them, are the activity in which hidden knowledge sharing can occur.
- b. Externalisation (tacit to explicit) converts intangible knowledge into tangible knowledge. In this case, the person can convert his knowledge in the form of regular articles, seminars, workshops to provide additional talks between one group, in response to questions or withdraw from the event, including the type of conversion in their ordinary activities occurs.
- c. Linking (explicit to explicit): In this stage, the movement of individual explicit knowledge, to the group and storage of explicit knowledge is done with a regard to the use of existing knowledge, ability to solve problems is provided by group, is developed following by knowledge.
- d. Internalisation (explicit to tacit): In this stage, explicit knowledge gained is established in the organisation. Also, taking the stage for the people is also following the creation of new personal tacit knowledge (acquiring tacit knowledge of existing explicit knowledge).
- e. Passing four steps above should be continuous and with spiral movement, in order to complete each stage, the stage prior to it and after the institutionalisation of knowledge generates and creates new knowledge.

It should be noted that any of the above-mentioned two types of knowledge must be managed in the organisation, and also their interaction way must be recognised, transformed to others and used. These two types of knowledge, each of which could be another source of creation and at the individual, group and organisational levels must be extended and expanded. In Figure 1, the components forming the four steps shown earlier.

3. Workforce productivity

Hersey and Goldsmith planned this model to help managers to determine the cause of performance problems and providing strategies for change and solve these problems. They plan to develop this model to analyse human performance in the two main objectives: to determine the causes of fundamental impact on the performance of individual employees and provide these factors so that managers and employees can apply and to remember them.

In Hersey and Goldsmith model, the relationship between employee performance and other variables is as follows:

Employee performance = ability × resolution × organisational support × motivation × motivation × evaluation × validity × environment

3.1. Ability: (The power to accomplish a task successfully)

The basic components of ability are the working knowledge related to the job (formal or informal training to facilitate the successful completion of the project) as well as work-related talent.

3.2. Resolution: (A clear understanding of how the adoption, location and how to do it)

For the employees to have completed understanding of the problem, major goals and objectives should be how to achieve these goals and objectives and priorities, and priorities of goals and objectives (which goals, when are of most matters), it must be quite explicit for them.

3.3. Organisational support (support that employees need to complete the effectiveness of the work)

Some organisational support factors include: funding, equipment and facilities to do the job right, the necessary support from other organisational units, access to a high quality product and eventually there is an adequate supply of human resources.

3.4. Motivation: (enthusiasm and willingness to work)

Motivating people to complete more tasks that have internal or external rewards. In the event that the employee has different forms of motivation, the first step is the use of rewards and punishments.

3.5. Evaluation (judgment in relation to how works done)

Evaluation is a review performance of daily feedback. It allows continuous feedback to subordinates informed of how the job is. The purpose of this kind of feedback is delivering daily performance to his unofficial and official periodical visits.

3.6. Validity: (the rule of law and the legitimacy of decision-director)

The appropriateness of the legal and management decisions about staffing shed. Staff decisions should be evidence and performance-oriented based.

Environmental factors are external factors even with ability to clarity, support and motivate for the job, and could impact on performance. Environmental factors include: competition, government regulations, logistics and...

4. Strategic management of human resources

If an organisation's capital (money, information, facilities and equipment) to be considered, in the case of management, works management is not too hard. But, the staff is different. If human forces and their morality be weak, we will not be able to manage the organisation.

The importance of human resources for the organisation is very high if not so, the entire program of the organisation disappears, because the most important part of the organisation is workforce which is an asset.

From the perspective of Marin *et al.* the case on the subject of human resources in the organisation is in fact a system of input, output and feedback process and its subsystems are included:

4.1. Employment

Recruitment process includes finding, evaluating and assigning people for jobs. This has a special impact on the skills and quality of new staff. Disproportion between individuals and organisation will hurts organisational performance, while a sophisticated recruitment mechanism, which selects the best people to suit the needs of long-term features, leads the organisation to significantly improved. Deligne and Haslid studies on 590 for-profit, nonprofit firms, showed positive relationship between employee and organisational performance is confirmed to be the right choice. The purpose of the 'right choice' in human resources management, is that employees and job fit together.

4.2. Human resources training and development

Organisations can use the comprehensive training and staff development activities, to improve their quality of life. According to studies, training activities on organisational performance impacts in two ways: First, improve the skills, knowledge, abilities and motivation of staffs in relation to their job functions. These programs are also increases employee satisfaction on the job and work environment.

Many empirical studies have confirmed the positive impact of training on individual and organisational performance. For example, Barthel *et al.*, showed that employees' productivity in manufacturing companies, which have been used employees formal training programs between 1983 and 1986 had 19% improved. There are many other studies that have confirmed the positive relationship of training and organisational performance.

4.3. Partnership

The purpose of employee partnership is a variety of methods and activities that take place in the context of the involvement of members of the organisation. In Robbins's view, this is a collaborative process that aims to encourage staff members to the commitment and participate in the success of the organisation. Finally, the employees are picked to comment of more satisfaction with their work.

4.4. Performance evaluation

In Carroll and Schneider's point of view, the process of observing, measuring and improving human performance is identifying in the organisation. Every component of this strategy is an important component of the evaluation process.

4.5. Identification component

The process of determining what areas should be focused on concerned. Identification typically include job analysis as a tool to identify and establish measures of performance rating. Identification determines what should be assessed and investigated.

4.6. View component

It suggests that all relevant evaluation criteria should be considered to the extent that would make the right judgments.

4.7. Assessment component

Assessment refers to the centre of gravity for assessing and evaluating. Assessor must make a value judgment so as to reflect the performance level of assessing person or thing.

If the performance evaluation process approach done correctly and continuous, the public sector promotes public confidence in the accountability of executive and organisational performance and the efficiency and effectiveness of government. The NGO also promotes resource management, customer satisfaction, contribution to national development, creating new features, stability and the promotion of world-class companies and institutions.

4.8. Compensation

Manager of the organisation should think about the welfare of the people and their living conditions. One of the responsibilities of the managers is to pay attention to issues of people life. So, in all organisations for the services and works done by staffs, a reward is considered as salary. In most of the managerial books, the meaning of compensation is salary: the department of salary is for financial receiving of the employees. (Kuzmits, 1988, p. 305 & Carrell). But, some believe that associated with salary for workforces, there is a need for some benefits such as opportunities for progress in job, promotion and ..., which can have remembered as compensation. Rewardable is referred as any kind of receiving value that an organisation may give to its employees in regard of the service or work that he or she have done for the organisation. The compensation which organisation is providing includes: financial services and nonfinancial services (Zarei Matin, 1379, p. 177). In other word, it refers to all salary and benefits in cash or credit, which are affected by features and job suites and conditions of the work environment against the services that the employee offers to the organisation. Compensation is in regard to work towards acceptance and motivation for better performance as a sign of gratitude to those granted to perform organisational tasks.

4.9. Conceptual model

Every research needs a theoretical framework; theoretical framework is a pattern that one researcher diagnosed on the relationship between the factors that create the theory based on the issue.

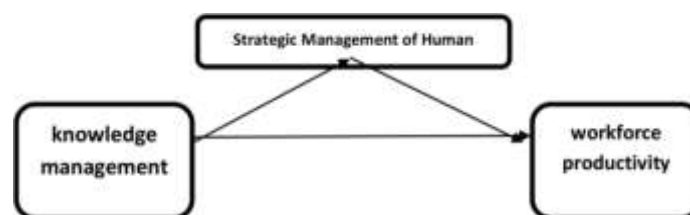


Figure 2. Conceptual model of the research

4.10. Hypotheses

4.10.1. The main hypothesis

There is a relationship between knowledge management and workforce productivity with the role of mediator between strategic management of human resources.

4.10.2. Sub hypotheses

First: there is a relationship between knowledge management and strategic management of human resources.

Second: there is a relationship between strategic management of human resources and workforce productivity.

Third: there is a relationship between knowledge management and workforce productivity.

5. Research methodology

This study has practical purpose and data collection is descriptive and in correlation type. The population of the research includes all employees of Gilan Ports and Navy department included 500 people. Morgan table was used to determine the size of the sample, according to which a sample size of 220 was calculated.

A questionnaire with 66 questions prepared that 26 questions were based on knowledge management of Nonaka and Tvkachy (1995), two dimensions of externalisation, internalisation, linking and socialisation were assessed. The questionnaire is related to strategic human resource management of Cheng and Huang (2009) which has 15 questions, which considers assessing five aspects of recruitment, training and developing human resources, participation, evaluation and compensation. The questionnaire related to workforce productivity (Hersi and Goldsmith, 1980) with 25 questions that assesses seven aspects of ability, understanding and identification, organisational support, motivation, feedback, validity and adaptation. For descriptive analysis and frequencies, we used SPSS v. 16 and for inferential analysis we used SMART partial least squares (PLS) 2.0 software, and the structural equation method was used.

6. Validity and reliability

Average variance extracted (AVE) score represents the average variance shared between each variable with questions. Simply, AVE indicates correlation of a variable with its questions, as the high correlation, represents the more fitting.

According to the table below and Fornell and Larker method, an appropriate amount for the AVE up to 0.5 has been introduced.

	AVE
Knowledge management	0.596
Workforce productivity	0.662
Strategic Management of Human Resources	0.675

6.1. Cronbach's Alpha

This standard classical criterion is considered for assessing appropriate measure for evaluating the reliability and internal consistency. One thing must be said about the reliability of internal structural equation which used to assess reliability is internal consistency measurement models. Cronbach's alpha values greater than 0.7 indicate the acceptable reliability.

6.2. Combined reliability

Since Cronbach’s Alpha is the traditional criteria for determining the variables, PLS used as a modern standard than alpha composite reliability. The value of the composite reliability for each variable is greater than 0.7 indicates good internal consistency for the measurement models and the score less than 0.6 indicates lack of reliability.

As specified in the table below, the values of these criteria, the Cronbach’s alpha and composite reliability of variables in any three variables is greater than 0.7, which indicates good reliability for model.

	Combined reliability	Cronbach’s Alpha
Knowledge management	0.933	0.861
Workforce productivity	0.905	0.902
Strategic Management of Human Resources	0.963	0.821

6.3. Research findings

Demographic frequency of research questions is presented in the table below.

6.4. Fitness of structural model

After checking the fitness of the measuring model, it is time to checking the fitness of the structural model of the research. As already mentioned, the structural model unlike the measures does not relates to the questions (the obvious variables) and only tacit variables associated with the relationship between them is checked.

6.5. Significant coefficients of t or t-values

To check the fitness of model, several criteria were used for the research of that the first and most fundamental criterion has significant coefficients of t or t-values which are the same values.

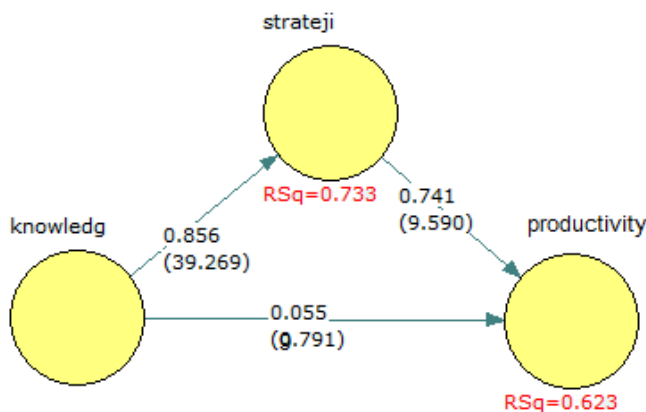


Figure 3. The path standard coefficient and t-value

6.6. The overall model fitness

GOF criteria (Goodness of Fit):

GOF criteria is related to overall structural equation models. This means that by this measure, the researcher can then evaluate the fitness of the structural measured part of the overall research model

and parts fitting, as well as overall control. GOF criteria by Tenenhaus et al. were created in 2004 and its formula is as follows:

$$GOF = \sqrt{R^2 * Communality}$$

Communality (shared value) = This value is obtained from the mean squared factor loadings for each variable.

$\overline{Communality}$ = is the average value of each share in endogenous variables of the model.

$\overline{R^2}$ = the average of R^2 for endogenous variables of the model.

$$GOF = 0.642$$

According to the three values of 0.01, 0.25 and 0.36 introduced as the values of weak, medium and strong for GOF, and acquisitions of 0.642 to GOF, showing a strong overall fit of the model.

6.7. Testing hypotheses

6.7.1. The main hypothesis

There is a relationship between knowledge management and workforce productivity with the role of mediator between strategic management of human resources.

According to Figure 3, the coefficient of path is 0.086 and t value is equal to 9.791. Since the amount of T value is greater than 1.96, it can be said that the role of mediator between knowledge management and workforce productivity with strategic human resource management has a significant positive correlation and the results confirmed the hypothesis.

6.7.2. Sub hypotheses

First: there is a relationship between knowledge management and strategic management of human resources.

According to Figure 3, the coefficient the path is 0.856 and t value is equal to 39.270. Since the amount of T value is greater than 1.96, we can say there is a positive relationship between knowledge management and strategic human resource management and the results confirmed the hypothesis is as follows:

Second: there is a relationship between strategic management of human resources and workforce productivity.

According to Figure 3, the coefficient of the path is 0.741 and t value is equal to 9.590. Since the amount of T value is greater than 1.96, it can be said that there is a significant relationship between the strategic management of human resources with workforce productivity and hypothesis is confirmed in conclusion.

Third: there is a relationship between knowledge management and workforce productivity.

According to Figure 3, the coefficient of the pass is 0.629 and t value is equal to 6.522. Since the amount of T value is greater than 1.96, it can be said that the relationship between knowledge management and workforce productivity is a significant positive relationship and the results confirmed the hypothesis.

7. Conclusion

The results of the current paper shows that there is a positive and significant relationship between knowledge management and workforce productivity with a role of mediating the strategic

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management of human resources. Firms which are more capable acquire knowledge from the outside of the organisation and can reduce the uncertainty, and discover more opportunities and use the technical benefits of it, so make innovations in their products and services. So, it is recommended that managers maximise innovative plans and new projects sharing their professions and encouraging their employees, and increase the workforce productivity.

Productivity is not individualised to industrial and manufacturing units. Public organisations which usually serve people also can use their patterns. Productivity plan must cover all parts of the organisation, and increasing productivity must be continuous.

Managers must motivate their employees in order to increase the productivity of workforce and try to use this ability in the path of organisation's goals. Salary, job security, promotion, personal development, working conditions, job attraction and ..., are factors which are more important for employees.

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Table 1. Frequency distribution of percentage of respondent's age

Age		
Items	fr	p
Less than 25	24	10.9
25–35	95	43.2
36–45	74	33.6
45–55	27	12.3
Total	220	100

Table 2. Frequency distribution of Percentage of respondent's job experience

Job experience		
Items	fr	p
Less than 5	84	38.2
6–10	48	21.8
11–15	61	27.7
16–20	6	2.7
More than 20	21	9.5
Total	220	100

Table 3. Frequency distribution of percentage of respondent's education

Education		
Items	fr	p
Diploma	8	3.6
Associate Degree	6	2.7
BA	81	36.8
MA	125	56.8
Total	220	100

Table 4. The standard error and the t-value

	The standard error	t-value
Strategic Human Resource Management \geq KM	0.065	39.269
Workforce productivity \geq Strategic Human Resource Management	0.059	9.59
Workforce productivity \geq KM	0.086	9.791

Table 5. Average of R square and communality

	Communality	R Square
Strategic Management of Human Resources	0.538	0.733
Workforce productivity	0.675	0.623