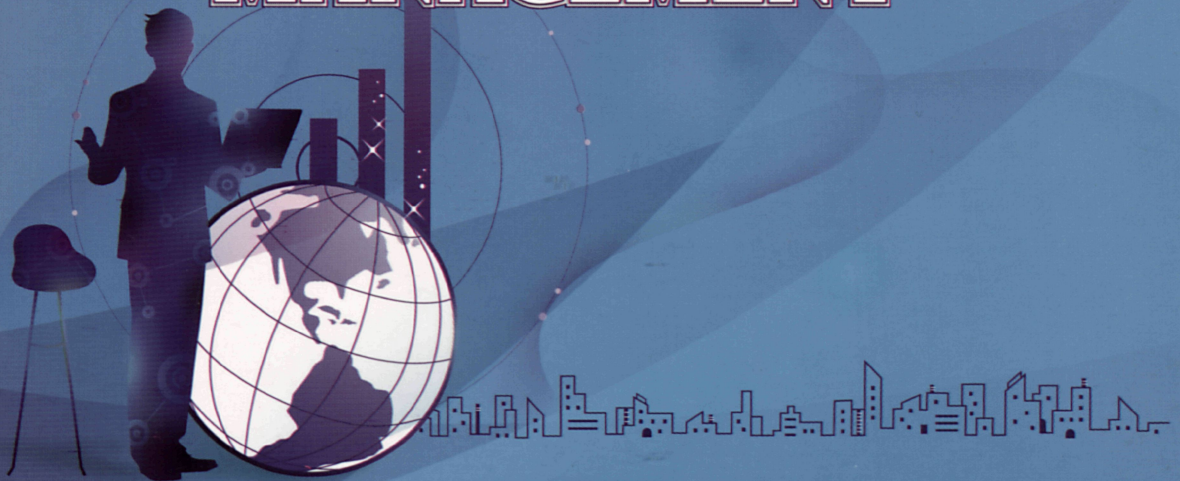


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EFFECTIVENESS OF KNOWLEDGE TRANSFER AMONG EMPLOYEES IN JARING

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Abstract: *This study surveyed the effectiveness of knowledge transfer practice in an organization. Knowledge transfer is a major strategy for contemporary organizational management and the impact of the major factors that influence the rate of organizational knowledge transfer is fairly unknown. This study aims to investigate the influence of organizational factors (IT, learning strategy, trust culture, and flexible structure and design) on knowledge transfer using a framework derived and adapted from the literature. A study was conducted amongst 200 employees in JARING and from the questionnaires that were distributed, 170 responded. The findings revealed that the most significant factor that impacted knowledge transfer in a particular organization is learning strategy. The findings can be used by the organization in order to manage their resource allocation to further optimize their organizational performance.*

Keywords: Knowledge Transfer, Organizational Factors, Learning Strategy, Organizational Performance.

INTRODUCTION

Nowadays, many organizations begin to realize that their organizational knowledge is the dominant source of developing a sustainable competitive advantage, primarily in a dynamic, yet turbulent business environment. Effective knowledge transfer is more than the movement of useful knowledge from one location to another. The basic notion is that the transfer of viable knowledge could assist with collaborative problem-solving between people, directly and indirectly, supported by networks and tools. Transferring knowledge between units and people can create significant learning benefits and is a “powerful mechanism for improving an organization’s productivity and increasing its survival prospects” (Argote, 1999, xvii).

There are several obstacles to implement knowledge transfer within organization. Lack of trust or pre-existing relationship among employees led to the creation of certain pressure in the execution of knowledge transfer. People absorb knowledge and practices of the people they know, respect and often like. If two managers do not have a personal bond or pre-established trust, they are less likely to combine experience with each other in their own work (Rajesh Setty, 2008). The same goes for other employees, if they mutually not trust each other or do not believe the superior or manager, the knowledge transfer will fail to be implemented. People, high in openness are motivated to seek new experiences. However, some people lack such openness as they find it difficult to make and accept change. In implementing knowledge transfer, attitude of openness is very important. Knowledge transfer is intended to improve an organization and not to make it worse. Thus, the openness in accepting new ideas is encouraged. Usually the senior employees found it difficult to accept new ideas. They are not ready to accept change because the team is reluctant to deviate from a common trend of thought.

Based on this fact, this study is undertaken to address the following research questions:

- What are the factors that have influenced on knowledge transfer in an organization?
- Which type of knowledge transfer (explicit or tacit) can affect innovative capabilities in an organization?
- What is the correlation between knowledge transfer, organizational innovation and organizational performance?

There are various methods of knowledge transfer (KT), including through training, product briefing, meeting and informal methods, such as casual conversations between employees. When and how does this knowledge transfer occur? It can be assumed that the transfer of knowledge in relation to learning, essentially, exploitation and knowledge transfer which clearly shows that it is possible to short circuit the learning cycle. Knowledge transfer implies that each individual/ group in an organizational unit need not learn from scratch but can rather learn from the experiences of others (Sue Newell, 2005).

HYPOTHESES

A hypothesis also can be defined an assumption or concession made for the sake of argument. It is assumed that there is a relationship between organizational factors and knowledge transfer. One of the organizational factors suggested as an important mechanism in knowledge management is information and communication technology (ICT). ICT not only enhances the performance of the organization but also expedite transfer of knowledge and transfer through enabling rapid access to search and retrieval of information and to support collaboration and communication between employees. In this study the relationship between organizational factors and knowledge transfer need to be identified.

There are four factors that have been highlighted in this study with their own hypothesis:

- *H1. ICT improves knowledge transfer significantly*

Information and communication technology, not only improves the performance of the organization but also accelerate the transfer of knowledge to search and retrieve information and to support collaboration and communication between members of the organization. Above hypothesis is to identify the relationship between ICT and knowledge transfer.

- *H2. Learning strategy has a significant and positive influence on knowledge transfer.*

Learning and contribute process elements are considered as the most challenging and important steps for innovation and overall organizational performance.

- *H3. Trust culture has a significant and positive influence on knowledge transfer.*

Trust plays an important role in how an individual transfer and share knowledge with others, organizational controls used to manage knowledge can have a significant influence on how individuals behave. Honesty is the most important fundamental for trust.

- *H4. Flexible structure and design has a significant and positive effect on knowledge transfer.*

The design structure of an organization can be a key determinant on whether internal knowledge can be efficiently integrated within the organization (Grant, 1996).

Relationship between Knowledge Transfer and Innovation Capability

An organization continuously innovates to sustain competitiveness. In order to foster organizational innovation, information and knowledge must be deliberately distributed through both structured channels (IT systems) and social network system. Based on the above, the hypotheses has predicted as below:

- *H5. Knowledge transfer has a significant and positive relationship with innovation capability.*

Relationship between Knowledge Transfer and Organizational Performance

It is important to know the relationship between organizational performance and knowledge transfer. In this study, only non-financial performance has been evaluated due to private and confidential reasons.

Thus, the following hypothesis has been predicted:

- *H6. Organizational performance has a significant and positive effect on knowledge transfer*

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Knowledge Transfer

There are numerous definitions of knowledge transfer within the literature. Knowledge transfer has been defined as an attempt by an entity to copy a specific type of knowledge from another entity (Rogers, 1983). Other authors have defined knowledge

transfer is a process how people share knowledge. However, confusion may occur on the differences between knowledge transfer and knowledge sharing. Knowledge transfer is about ensuring that efforts provide the desired results (effectiveness) and ensuring that the new knowledge becomes embedded within the . Knowledge can either be tacit or explicit. Tacit knowledge exists either in the heads of individuals or a collective body and has been acquired through experience and repetitive actions (Kostova, 1996). Explicit knowledge, which can exist either individually or collectively, is documented and can be transferred in a formal and systematic way through rules, policies, and procedures (Pablos, 2004; Polanyi, 1962).

Research in the area of knowledge transfer has identified a set of factors that impact knowledge stickiness (Szulanski, 1996), or the difficulty of transferring it. Several authors have studied the characteristics and kinds of knowledge, although they have analyzed this asset from different perspectives and levels of analysis (Nonaka, 1994; Reed and DeFillippi, 1990; Spender, 1996; Winter, 1987). Dimensional taxonomy of knowledge assets has been proposed in accordance with how difficult it is to transfer: tacit and fully articulable knowledge, teachable and unteachable knowledge, articulated and unarticulated knowledge, observable and unobservable knowledge in use, the dimension of complexity and simplicity, and dependence on or independence of a system. According to these dimensions, knowledge is more easily transferable when it is teachable, articulable, observable, simple and independent of a system (Winter, 1987). In addition, actions undertaken to facilitate voluntary transfer may well also facilitate involuntary transfer.

The effectiveness of knowledge transfer instruments turned out to depend on the stakeholders who participated and shared interest in the transfer of knowledge, and their acceptance, motivation and goals. Therefore, analyses of knowledge transfer effectiveness need to take the context of knowledge transfer instruments, the stakeholders and their goals, into account. Not only do the participants of knowledge transfer have intentions, but knowledge management initiatives in general are driven by goals that are attributed by stakeholders. However, to achieve the effectiveness of knowledge transfer in an organization is not easy. There are many pitfalls in implementing a successful knowledge transfer. Effective knowledge transfer is more than the movement of useful knowledge from one location to another. The basic notion is that the transfer of viable knowledge should assist with collaborative problem solving between people, directly and indirectly, supported by networks and tools (Andreas Riege, 2007). Transferring knowledge between units and people can create significant learning benefits and is a "powerful mechanism for improving an organization's productivity and increasing its survival prospects" (Argote, 1999, p. xvii).

Organizational Factors

Companies are a place to learn and gain or acquire knowledge. It is not only as a warehouse of knowledge where existing knowledge does not apply. The company itself is a place where knowledge is created, adopted and where the occurrence of knowledge processing and the transfer of knowledge within a social framework. Factors, such as organizational controls, culture, training, processes and activities, HRM policies are considered as a crucial key in enhancing the process of implementing knowledge transfer both tacit and explicit effectively. The ability to transfer the knowledge effectively in an organization can be further enhance by a structured IT network which enables individuals to deposit and share knowledge (O'Dell and Grayson, 1998); a flat structure with less hierarchy and bureaucracy; a trust culture where knowledge transfer relationships between individuals and groups are transparent, and supported through equitable performance related incentives and rewards; and a learning strategy whereby firms actively promote the double loop learning (Senge, 1990).

Innovative Capabilities

An organization must constantly innovate to maintain competitiveness. To encourage organizational innovation, information and knowledge must be intentionally distributed through the channels in both structured and social networking systems.

Every organization needs a strategy of innovation whether it be a high-tech product innovation, packaging innovations in consumer products, or process innovation in financial services organizations. At this age, innovation is the key to growth, to acquire and maintain a competitive advantage, and building long-term shareholder value. In the context of the study, knowledge transfer plays an important role in organizational innovation.

Organizational Performance

Organizational performance comprises the actual output or results of an organization as measured against its intended outputs (or goals and objectives) (wikipedia.com, 2012). Traditionally, organizations assess performance based on financial outcomes; tangible units such as profit, cost reduction, sales volume and inventory turnover rate are used.

Financial performance is based on the company's profits, liabilities and assets. The higher the profit earned by the organization, the stronger their financial performance will become. While non-financial performance is the performance of the organization which is not from financial resources. Based on the literature review, the organizational

factors are contextual resulting in varying degrees of influence on the knowledge transfer.

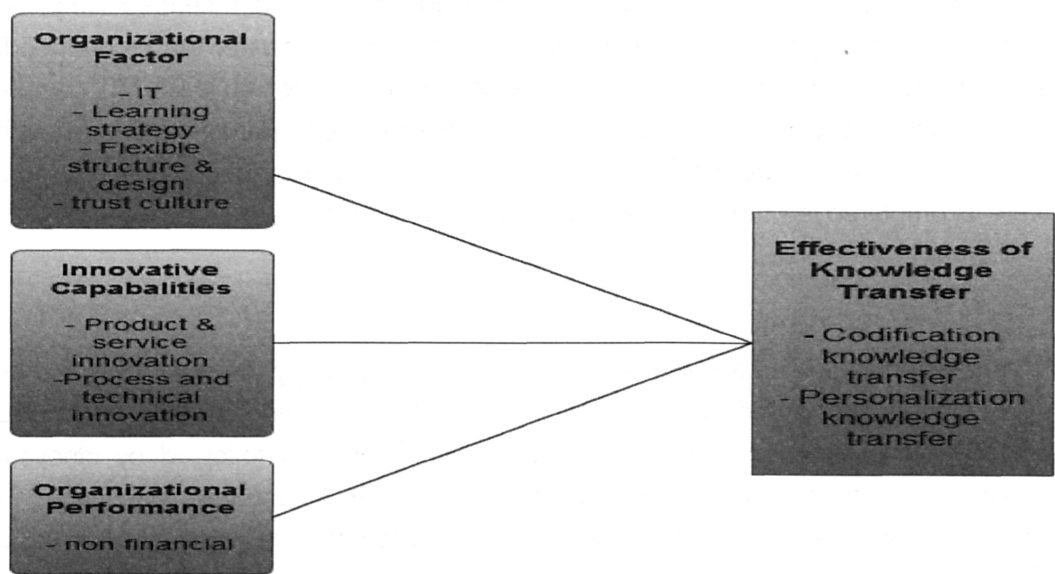


Figure 1: A Theoretical Framework of Effective Knowledge Transfer in Organization

The framework is adapted from a framework of effectiveness of knowledge transfer in organization by Jo Rhodes, Richard Hung, Peter Lok, Bella Ya-Hui Lien, Chi-Min Wu (2008) and a framework: factors influencing effective knowledge transfer by Swee C. Goh (2002). The literature review indicates that organizational factors are contextual, resulting in varying degree of influence on the knowledge transfer ability of the organization. Furthermore, innovation capabilities also have influences in effective knowledge transfer. Finally, the relationship between knowledge transfer, innovation and organizational performance can be determined.

RESEARCH METHODOLOGY

A survey research method examines the relationships between organizational factors, knowledge transfer, innovation capability and organizational performance. A questionnaire has been distributed and random sampling was used to sample JARING Communications Sdn Bhd.

Population and Sample

JARING population is about 300 employees, including the staff at the branches. With regards to the population, it was decided that at least 1 respondent is selected from

each department, except for the staff at the branches and the researcher applies random sampling from the population. The sample size calculation Raosoft is referred. By using the above software, the researcher manages to get recommended sample size to distribute the questionnaire. According to the above software, the recommended sample size is 169. This is mean that researcher should get at least 170 complete answered a questionnaire for data analysis. In order to save the situation, the researcher decided to distribute around 200 questionnaires. Of the 179 questionnaires returned, 9 were incompleated leaving 170 questionnaires useable for the final analysis.

Survey Design

The questionnaire used a five point Likert Scale from Strongly disagree (1) to Strongly agree (5) and considered four organizational factors; IT, learning strategy, trust culture and flexible organizational structure and design. Then it is followed by innovation capability; product and service innovation process and technical innovation. The knowledge transfer survey items were partly adopted from surveys by Nonaka and Takeuchi (1995). The question is divided into codification and personalization of knowledge transfer. Last but not least is organizational performance. As mentioned earlier, only non-financial performance has been counted. Therefore the survey items of non-performance reviewed to examine the relationship between human resource management practices and perceived organizational performance.

DATA ANALYSIS AND FINDINGS

Demographic Profile

The respondents demographic characteristics are presented in the Table 1 below:

Table 1: *Respondents Demographic Characteristics*

Demographic Characteristics		Frequency	Percentage
Gender	Male	47	27.6
	Female	123	72.4
Age	21 – 30	50	29.4
	31 – 40	88	51.8
	41 – 50	30	17.6
	51 – 60	2	1.2

Work Experience	1-5 years	59	34.7
	6-10 years	60	35.3
	10-15 years	27	15.9
	15-20 years	24	14.1
Educational Level	Secondary	0	0
	Under-Graduate	105	61.8
	Post- Graduate	65	38.2
Position	Manager	9	5.3
	Unit Head	12	7.1
	Executive	141	82.9
	Non-executive	8	4.7

The result shows that 123 (72.4%) of the respondents are females and only 47 (27.6) were males respondent involved in this study. This is because the number of female staff in JARING is more than male. 29.4% of the respondent are between 21-30 years old group. While 51.8% of them age between 31-40 years old and 17.6% is between 41-50 years old. Only 1.2% of respondents age between 50-60 years old. It can be concluded that most of the employees in JARING are on the average age of between 31-40 years old. The data also shows that about 60 (35.3%) of the respondents have work experiences at JARING for 6-10 years. 59 (34.7%) respondents have worked for 1-5 years. The senior respondents are 27 (15.9%) and super senior for employees who have served JARING are 24 (14.1%) out of 170 overall participants.

In this study, most of the respondents are under-graduates with 105 (61.8%) participants and 65 (38.2%) respondents are post-graduates. From the above table, it can be concluded that the majority of JARING employees possess higher education. The position of the respondents who have taken their time to answer the questionnaires distributed by a researcher shows that, 9 (5.3%) of them are Manager and 12 or 7.1% are Unit Head. About 141 (82.9%) of the respondents who have participated in this research are Executive and last but not least, 8 (4.7%) participants are from the non-executive level.

Organizational Factors

In this study, there are four (4) organizational factors that influence knowledge transfer, which is information technology, learning strategy, trust culture and flexible structure

and design. Below is the frequency and percentage of for the data that has been collected to analyze the output

Table 2: *Descriptive Profile of Organizational Factors*

	Mean	Standard Deviation
IT	3.956	.6084
Learning strategy	3.176	.6176
Trust culture	3.481	.5956
Flexible structure and design	3.271	.5720

Table 2 shows the descriptive analysis of organizational factors. The results indicate that IT (mean=3.956, SD=.6084) is the most influential factor that affects KT among employees followed by trust culture (mean=3.481, SD=.5956), flexible structure and design (mean=3.271, SD=.5720) and learning strategy (mean=3.176, SD=.6176).

Innovative Capabilities

Table 3: *Descriptive Profile of Innovation Capabilities*

	Mean	Standard Deviation
Product and service innovation	2.581	.8355
Process and technical innovation	3.196	.5643

As exhibited in Table 3, the mean of product and service innovation is 2.581 with a standard deviation .8355. However, most of the respondents agreed that process and technical support (mean=3.196, SD=.5643) is influenced the effectiveness of knowledge transfer.

Organizational Performance

It is important to know the relationship between organizational performance and knowledge transfer. In this study, only non-financial performance has been evaluated due to private and confidential reason

Table 4: *Descriptive Profile of Organizational Performance*

	Mean	Standard Deviation
Non-financial organization performance	3.081	.6196

The above Table 4 shows that mean for non-financial organization is 3.081 and standard deviation .6196.

Knowledge Transfer

As all of us know, knowledge transfer can be tacit and explicit. Therefore, the questions were selected to identify the codification of knowledge transfer and the personalization of knowledge transfer.

Table 5: *Descriptive Profile of Knowledge Transfer*

	Mean	Standard Deviation
Codification of knowledge transfer	3.377	.6170
Personalization of knowledge transfer	3.471	.5606

In the above Table 5, it shows that tacit knowledge has strong influence (mean=3.471, SD=.5606) in implementing good KT practices. Some of the respondents believe that codification of KT (mean=3.377, SD=.6170) also influence in implementing KT in the organization.

Descriptive Analysis

Table 6 shows the descriptive and the correlation matrix. From the table, it might be suggests that the mean scores of organizational factors were from 3.271 to 3.956. Meanwhile, the mean score for IT is the highest. The impact is huge compared with other factors. This is because JARING itself is an ISP organization and IT is closed with it. The different of mean score of innovation capability between production and service, and process and technical were quite high. The score is 2.581 and 3.196 respectively. These results suggested that both innovation capabilities had a dissimilar impact on organizations.

In this study, the organizational performance factor has been focused on non-financial performance only. The mean score was 3.081 and from the result, it could suggest that there is no significant difference between knowledge transfer and non-financial performance.

Table 6: Descriptive and Correlation Matrix

	Mean	SD	F1	F2	F3	F4	PSI	PTI	OP	KT1	KT2
F1	3.956	.608	1.000								
	4										
F2	3.176	.617	0.480*	1.000							
	6	*									
F3	3.481	.595	0.477*	0.522*	1.000						
	6	*	*								
F4	3.271	.572	0.424*	0.468*	0.465*	1.000					
	0	*	*	*							
PSI	2.581	.835	0.578*	0.623*	0.620*	0.566*	1.000				
	5	*	*	*	*	*					
PTI	3.196	.564	0.388*	0.433*	0.430*	0.376*	0.531**	1.000			
	3	*	*	*	*	*					
OP	3.081	.619	0.553*	0.597*	0.594*	0.541*	0.695**	0.505*	1.000		
	6	*	*	*	*	*		*			
KT1	3.377	.617	0.455*	0.500*	0.497*	0.443*	0.598**	0.408*	0.572**	1.000	
	0	*	*	*	*	*		*			
KT2	3.471	.560	0.388*	0.432*	0.429*	0.376*	0.530**	0.340*	0.505**	0.407*	1.000
	6	*	*	*	*	*		*		*	

Notes: * $p < 0.05$; ** $p < 0.01$. F1:IT; F2: learning strategy; F3: trust culture; F4: flexible structure and design; Inno1: production and service innovation; Inno2: process and technical innovation; OP: organizational performance; KT1: codification knowledge transfer; KT2: personalization knowledge transfer; N = 170

Finally, the next mean score is knowledge transfer. The score for codification knowledge transfer was 3.377 while the mean score for personalization knowledge transfer was 3.471. These findings suggest that the organization focused more on personal network that use tacit knowledge and less attention to information transfer process. This is because of the organizational business environment itself where they already focused on the technology. They might overlook on the importance of knowledge transfer in explicit form.

Structure model analysis results

Table 7 presents the results of theoretical framework. All four organizational factors had significantly positive relationship with knowledge transfer. The β value of IT to knowledge transfer was the highest at 0.722 ($p<0.01$), learning strategy to KT was 0.655 ($p<0.01$), followed by trust culture to KT was 0.630 ($p<0.01$), and flexible structure and design to KT was 0.613 ($p<0.01$). Thus H1, H2, H3 and H4 were all supported.

Table 7: *Parameter Estimates for the sStructure Modes*

Standardize estimate for each path (β values)	Theoretical Framework Model
IT to KT	0.722**
Learning strategy to KT	0.655**
Trust culture to KT	0.630**
Flexible structure to KT	0.613**
Production Innovation to KT	0.257**
Process and technical innovation to KT	0.034**
Non-financial performance to KT	0.611**
Chi-square	20.295
p-value	0.225
Notes: * $p<0.05$; ** <0.01	

In the above table, only personalization of KT had a significant correlation with innovation capability (β value=0.257, $p<0.05$), the H5 was partially supported. However organization performance (β value=0.611, $p<0.01$) had significant positive relationships with KT respectively. Hence, H6 was also supported.

DISCUSSION ON RESEARCH QUESTIONS

Research Question 1: What are the factors that have influenced on knowledge transfer in an organization?

By referring to the descriptive analysis, it can be concluded that the most significant organizational factor that influence knowledge transfer in organization is learning strategy factor with the correlation score 0.500. It is suggested that improvement in knowledge transfer can be achieved through the openness of communications channels, social networks and trust (McEvily et al., 2003). The ability to learn from others could have significant impact on how knowledge is transferred (Senge, 1990). Individual

learning intention and knowledge absorption from individual to group to an organization could be significant for effective organizational knowledge transfer. In JARING, employees are pleased to transfer the knowledge through such as training, briefings, meetings and discussions. That is why the respondents chose learning strategy as the most influential factor in knowledge transfer.

Research Question 2: Which type of knowledge transfer (explicit or tacit) have the impact on innovative capabilities in organizational?

Product innovation is the corporation's capability to offer differentiation or new product/service to a market in order to provide satisfaction to their customers. Process innovation from the organizational perspective is the capability to produce a better manufacturing process or service than the existing ones (Liao et al., 2007). Furthermore, the innovation

In research question 2, the researcher would like to identify which type of KT (explicit and tacit) has an impact on innovative capabilities. The category of knowledge has been divided into:

- codification of knowledge transfer (explicit)
- personalization of knowledge transfer (tacit)

The innovation capabilities also have divided into two groups which are:

- product and service innovation
- process and technical innovation

The result in descriptive analysis shows that both of the innovation capabilities have influence knowledge transfer. However, product and service innovation has big impact with codification knowledge transfer with the correlation score is r 0.598. From the correlation result, it can be concluded that the explicit knowledge transfer has the biggest impact on innovative capabilities in organizational.

JARING is one of the ISP company and of course most of the employees there is expert on using IT. That is why they prefer to share knowledge by transfer it via codification.

Research Question 3: What is the correlation between knowledge transfer, organizational innovation and organizational performance?

Innovation can be distinguished into two types; product and process. The connection between the management of knowledge and innovation is inseparable (Alam, 2005). Knowledge can 'positively' affect innovation. According to Forcadell and Guadamillas (2002) the cycle of KM, especially the creation of knowledge, is closely related to innovation.

The creation of new knowledge and of innovations implies the application of intelligence, tacit knowledge and information: that is, an interaction between actions and behaviors. When innovation diffusion or knowledge transfer takes place, the factors that inhibit or enable the processes can be enormous. This is mainly because of the organizational factors and cultural influences that can impact on the processes.

The impact of knowledge transfer with organizational performance was highly contingent. Depending on the specific characteristics and circumstances, knowledge transfer can better, matter little to, or even harm performance. Therefore it is important for this study to identify the relationship between knowledge transfer and organizational innovation; and between knowledge transfer and organizational performance.

Referring to the descriptive analysis, the high correlation is between codification knowledge transfer and product and service innovation with score r 0.598 and followed by correlation between codification knowledge transfer and organizational performance with r 0.572.

CONCLUSION

In this study, the framework explaining the relationship between organizational factors, knowledge transfer itself, innovative capability and the organizational performance in context nonprofit performance. The effect of organizational factors on knowledge transfer and innovation has demonstrated directly and indirectly. Generally, the knowledge transfer is very important and has great impact on the progress of the organization. In the context of this study, it could be concluded that knowledge transfer has an apparent relationship between organizational factors, innovation capability factors and organizational performance factor itself. There are a few limitations in the process of completing the research. The time constraint is the biggest limitation while conducting this research. Taking the program part-time is a big challenge. This research only focuses on one case study. Hence, the consequences of the scenario are not being able to do a comparison. Other challenges faced in doing this research are commitments and cooperation to answer the questionnaire. Even though the questionnaire has been distributed earlier, due to their work commitments, the

possibility of the delay is higher. Data and information access restriction due to data privacy in the organization also give rise to delay and assumptions of analysis.

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