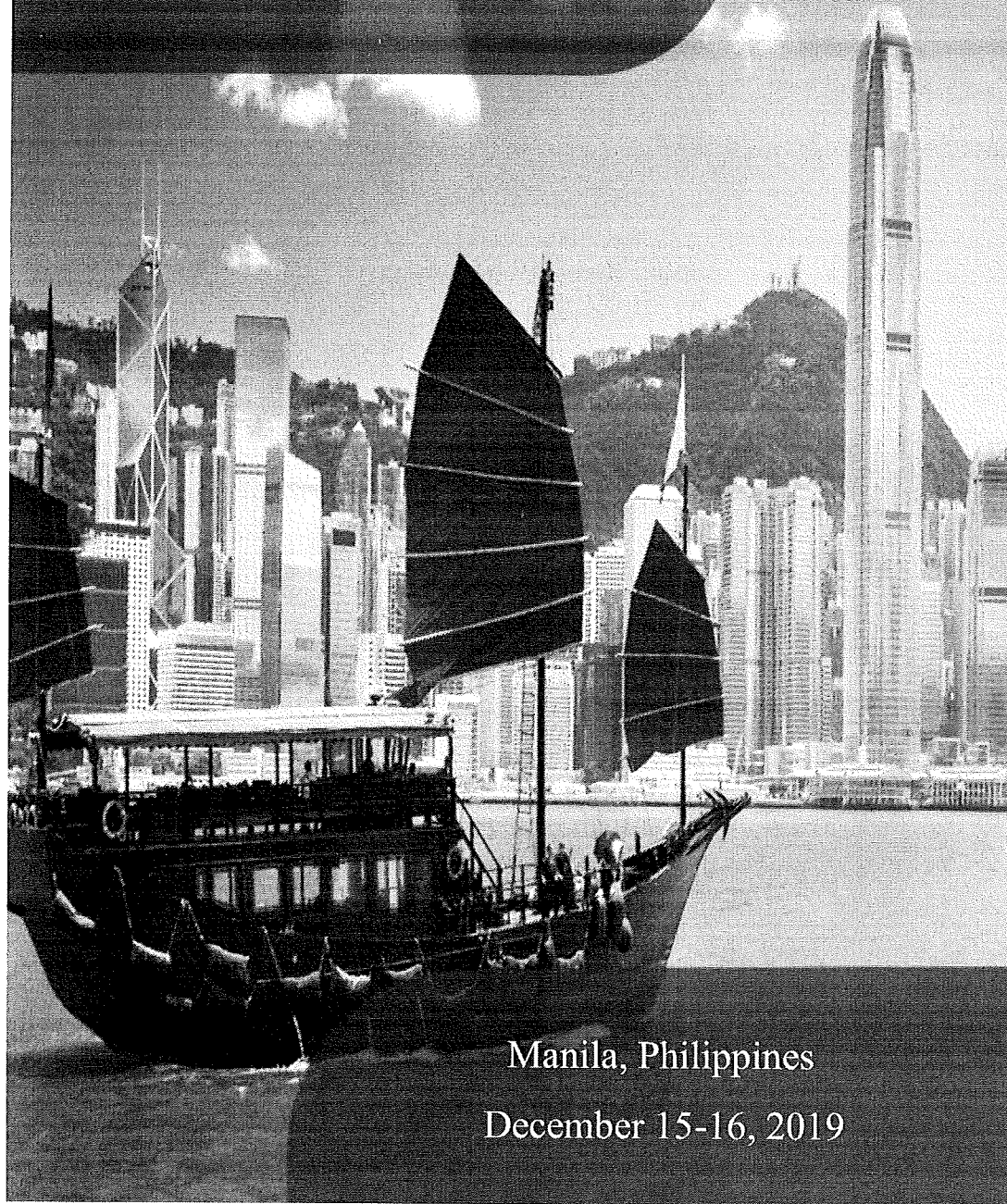


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Manila, Philippines
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MRSMB-2019

**39th International Conference on Modern Research
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The Tacit Knowledge Management that Affects the Innovation Performance of Lecturers in Private University

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Abstract The objectives of this research were to examine the tacit knowledge management that affects the innovation performance of lecturers in a private university. The sample in this research consisted of 202 lecturers at private university. A quantitative empirical research via survey questionnaires was conducted to fulfil the purpose of this research. Statistical analysis applied were the frequencies, the percentages, the arithmetic mean, the standard deviation, and stepwise multiple regression analysis. The result of the statistical analysis shown that tacit knowledge management by using SECI model has significant affected on innovation performance. Considering independent variables in each aspect, found that all of variables (Socialization, Externalization, Combination and Internalization) contribute towards the significant influences of tacit knowledge management on innovation performance with statistical significance at the level of 0.05. And tacit knowledge management by using PRO model has significant affected on innovation performance. Considering independent variables in each aspect, found that all of variables (Personal responsibility, Learner self-direction, Self-directed learning, Self-direction in learning and The social context) contribute towards the significant influences of tacit knowledge management on innovation performance with statistical significance at the level of 0.05. The contributions of these finding for development human resource management in organizations are discussed and conclude with directions for future research.

Keywords: Tacit Knowledge Management, SECI Model, PRO Model, Innovation Performance

INTRODUCTION

There is a clear format of the knowledge management system of an organization which consists of collecting information that is in the organization from a person or document to transform it into knowledge, transfer and share this knowledge systematically so that everyone in the organization can access it in order to upgrade oneself to be knowledgeable and be able to work efficiently shifting it into a model learning organization (Petcharat C. and Jiamprachanarakorn S., 2015). Sustainable Knowledge can be divided into 2 types: explicit knowledge is the theoretical knowledge which has an academic content of various information transmitted in many writing forms and is embedded in the people. Tacit Knowledge It is the knowledge that exists within a person, arising from the skills, experiences, and talents that are within the person. The knowledge that is embedded in this person is difficult to convey through characters because it has a unique context, and it is difficult to format. The transfer of tacit knowledge requires the exchange of experience through participation of various activities together or in the same environment. The exchange of knowledge within the individual is an important social process. The knowledge in most organizations is tacit knowledge rather than explicit knowledge (Explicit Knowledge) (Potang A. and Photisuvan C., 2016). When comparing it to the ratio of tacit knowledge to clear knowledge, it could be 80: 20, which can be compared to an iceberg. The part that emerged from the water was like a clear knowledge of about 20% of the total, while the submerged part which is like the knowledge that is embedded in humans, about 80% of the total (Knowledge Management Manual Department of Disease Control, 2014)

Innovation is an important tool in creating a competitive advantage for the market opportunity and success of the organization. Drucker (1985) said that innovation is an important tool for entrepreneurs to build capacity, business competition, and wealth by using existing resources or from the reconstruction as well as being developed from new knowledge. The innovative performance is a new thing that results from the use of knowledge and creativity that are beneficial to the operation, and the result of the operation is the achievement of the assigned objectives. It is beneficial that the organization creates motivation to help its personnel apply their knowledge as work skills or create originality by introducing new innovations, and to achieve targets (Wisuttakorn P. and Jedsadalug V., 2015).

In addition, Kruger & Johnson (2011) said that the knowledge influences the organization's performance and to formulate the Knowledge management strategies, especially the knowledge management within the individual, which is a competitive advantage. Therefore, in order to increase the performance of the organization, the organizations need to focus on employee knowledge management, especially the tacit knowledge that is important for the efficiency and effectiveness of the operations. Therefore, the researcher agreed that managing tacit knowledge is an important process that will transform knowledge at the individual level to become assets of the organization. Therefore, the researcher is interested to study the tacit knowledge management that affects the innovation performance of the lecturers at private University for the benefit of the organization and to be a guideline for the organization to understand the importance of human capital development as a mean to increase operational efficiency and increase the performance of the organization.

Research Objectives

1. To study the tacit knowledge management by using the SECI Model that affects the innovation performance.
2. To study the tacit knowledge management by using the PRO Model that affects the innovation performance.

LITERATURE REVIEW

Concepts of Tacit Knowledge Management by using the SECI Model

Nonaka and Takeuchi (1995) proposes a knowledge cycle or knowledge spiral which explains the transfer of knowledge and the change in knowledge between Tacit Knowledge and Explicit Knowledge until becoming a new knowledge in which various processes will continue to swirl together in a spiral of knowledge, and the faster the knowledge spiral is, the more knowledge will be used to benefit the organization. The knowledge cycle consists of: 1) exchange of knowledge (Socialization) Is a sharing exchange knowledge from Tacit Knowledge to Tacit Knowledge by exchanging direct experiences of messengers such as exchanging meetings and conferences; 2) Extracting knowledge (Externalization) is to pull the knowledge from Tacit Knowledge into Explicit Knowledge, which means to pull the knowledge from the inside of the people and transfer it in writing such as manual work; 3) Knowledge acquisition (Combination) is the collection of knowledge from Explicit Knowledge into Explicit Knowledge by organizing and integrating various forms of knowledge together. Through the process of creating new knowledge and 4) Embedding knowledge (Internalization) is to bring the knowledge from Explicit Knowledge back into knowledge. Tacit Knowledge is to put the knowledge learned into practice in which the theoretical knowledge that has been changed to tacit knowledge at the individual level becomes the property of the organization. These processes are called the SECI Model.

Concepts of Tacit Knowledge Management by using PRO Model

Ralph G. Brockett and Roger Hiemstra (1991) developed learning styles the PRO Model (The Personal Responsibility Orientation) with an emphasis on personal responsibility contain with 1) Personal responsibility stimulated in order to be aware of the need for learning to have self-responsibility in deciding to learn (Learning planning) 2) Learner self-direction is a characteristic or personality that occurs from within the student's self 3) Self-directed learning is an activity that occurs in self-directed learning caused by the management of teachers and students. Learning may occur while working or stop working with the students having to pay attention, observe, and try. 4) The Self – direction learning is learning as a student who has self-directed characteristics of learning in which learners are accepted and assigned for their roles (Self - acceptance) as learners for having the ability to do a learning plan (fullness plan) and for having an intrinsic Motivation (Potang A. and Photisuvan C., 2016) and 5) The social context is the social environment of the learners, in which the learners are still living in the society.

Innovation Performance Concepts

National Innovation Agency (2006) gave the meaning of Innovation and states that innovation is a new thing arising from the use of knowledge and creativity that is beneficial to the economy and society. Ueajirapongpan S. et al. (2010) said that innovation means new things arising from the use of knowledge, experience skills and creativity which in development may look like a new product, a new service or a new process that brings economic and social benefits. Additional meaning: (Wisuttakorn P. and Jedsadalug V., 2015) Innovative performance means new things resulting from the use of knowledge and creativity that are beneficial to the operation and resulting in better performance of the assigned objectives. In addition, measurement of Innovation Performance in research based research university that proposed innovation performance in terms of (a) Efficiency and effectiveness of innovation process, (b) Number of new project, service or product completed, (c) Amount of research fund granted, (d) Number of external linkages, (e) Duration to complete a research project. (Kowang O.T., Choi S.L. and Rasli A., 2015) As stated above, In this research has defined that innovation performance divided into 4 perspectives: Efficiency and effectiveness of innovation process, Number of new project, service or product completed/developed Financial success and Time to complete a project.

Therefore, innovation performance it is a result of learning working experience, discovering new things from work and accumulating knowledge creates new knowledge from participation in activities in the process of transferring tacit knowledge through mutual exchanges and learning that emphasizes personal responsibility to create knowledge, apply and disseminate knowledge for the benefit of the organization. From the study of the above concepts, it was found research studies about knowledge management within the organization (Knowledge Management) but still does not find research studies about Tacit knowledge management using SECI Model and PRO Model that affects the very innovation performance. The researcher is interested in studying the above issues.

CONCEPTUAL FRAMEWORK

Conceptual framework of this research is shown in figure 1.

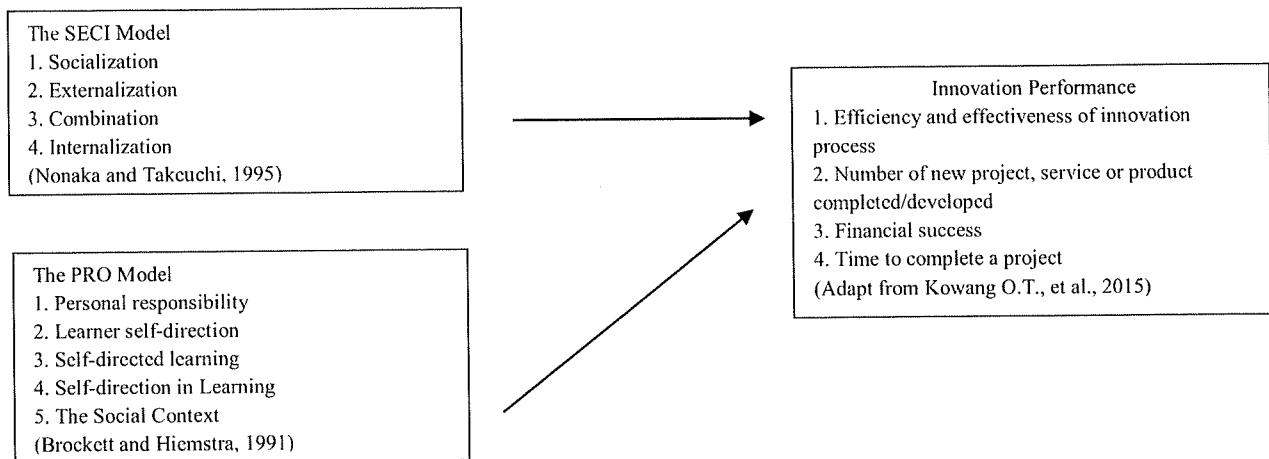


Figure 1: Conceptual Framework

Hypothesis

Based on the research problems and conceptual framework above therefore the hypotheses of this research are as follows:

Hypothesis 1 (H1): Tacit knowledge management by using the SECI Model to have a positive effect on innovation performance.

Hypothesis 2 (H2): Tacit Knowledge Management by using PRO Model to have a positive effect on innovation performance.

METHODOLOGY

This research is a quantitative research. It was used questionnaires as a tool to collect data from the target population. Then the data was analyzed to find conclusions that are consistent with the research's objectives. The details of the research are as follows.

Population and Sample

The population used in this research was lecturers at private university, 410 people, calculated the sample by Taro Yamane (1976) at the confidence level of 95%. Samples were 202 sample people. It was used the convenience sampling method of choosing to collect a specific sample of people who cooperated to answer questionnaires until complete the sample size of 202 samples.

Research Tools

This research used questionnaires as a tool for data collection. It was divided into 5 parts. Part 1: Questions about general information of respondents. Part 2: Questions about knowledge management process using SECI Model, amount 16 items. Part 3: Questions about knowledge management process using PRO Model, amount 15 items. Part 4: 10 questions on innovative performance and Part 5 additional suggestions were an open-ended question. The questionnaire of part 2 to 4 is a questionnaire that indicates the opinion level according to Likert (Rating Scale) and each item is divided into 5 levels which are the most agree (5) very agree (4) moderate agree (3) agree Least (2) and the least agree (1)

Research Quality Check

- Content Validity by bringing the questionnaires to experts to consider the consistency and coverage of the questions and the objectives of the research. By analyzing the Index of Item-Objective Congruence (IOC) between 0.50-1.00, it shows that the questions are consistent with the research objectives (Taweerat P., 2000). All questions pass the criteria. Correspondence index with every value greater than 0.5
- Reliability by using the questionnaire to test the confidence with the sample and then to analyze the confidence of the questionnaires by finding the Cronbach's Alpha Coefficient between 0.71-0.90 coefficient alpha with reliability requirement to have alpha coefficient greater than or equal to 0.7 (Nunnally, 1978).

Data Collection

The researcher used the questionnaire that passed the content validity test and confidence. To collect data from teachers at private University has been restored and completed 202 samples.

Data Analysis

In this research, the statistics used to do data analysis was descriptive statistics. The statistics analysis consisted of frequency values, percentage, average, and standard deviation used to analyze general information of respondents, analysis of relationships

between independent variables by using Pearson's Product Moment Correlation Coefficient to test the properties of the initial variable and the dependent variable and to analyze the influence of variables by using multiple regression analysis by using Stepwise technique. The definition of variables is as follows:

- SECI means Learning Management Process using a SECI Model;
- S means Socialization
- E means Externalization
- C means Combination
- I means Internalization
- PRO means the Personal Responsibility Orientation Learning using PRO Model;
- PR means Personal Responsibility
- LS means Learner self-direction
- SD means Self-directed learning
- SDL means Self-direction in Learning
- SC means The Social Context
- IP means Innovation Performance;

RESULTS

From the data analysis of tacit knowledge management that affects the innovation performance of lecturers in private university, the research findings can be summarized as follows:

1. The results of general data analysis of 202 respondents, found that most of the respondents are female, 127 people, accounting for 62.9 percent and 75 male accounting for 37.1 percent, 80 people aged between 31-40 years accounting for 39.6%. Education: most have education levels, bachelor degree students comprising 130 people accounting for 64.4% of work experience. Most of them have work experience between 6-10 years, 72 people representing 35.6 percent. Most of the university employees are 106 people, representing 52.5 percent.
2. The results of Average analysis, Standard deviation of variables used in the study and the correlation coefficient analysis to test the relationship between variables are shown in Table 1 and Table 2.

Table 1. *The Results of Average Value, Standard Deviation, VIF, and Correlation Coefficient of Knowledge management Process by using a SECI Model and Innovation Performance*

Variable	S	E	C	I	IP	VIF
\bar{x}	4.43	4.19	4.25	4.21	4.43	
S.D.	0.582	0.591	0.611	0.634	0.503	
S						1.755
E	0.622**					2.452
C	0.532**	0.712**				3.150
I	0.556**	0.635**	0.776**			2.729
IP	0.584**	0.677**	0.717**	0.750**		

**p < 0.05

In table 1, it was found that the factor with the highest mean is Socialization with Highest average of 4.43, followed by Combination, Internalization, and Externalization With an average of 4.25, 4.21, and 4.19 respectively. In addition, when considering the VIF values, it was found to be less than 10. This means that there is no correlation problem (Multicollinearity) and it was found that the correlation coefficient analysis (Correlations) r were between -1 and 1 (p-value <0.05), indicating that the variable has a linear relationship at a significant level of 0.05, leading to hypothesis testing by regression analysis.

Table 2. *The Results of Average Value, Standard Deviation, VIF, and the Correlation Coefficient of the Personal Responsibility Orientation Learning by using PRO Model and Innovative Performance*

Variable	PR	LS	SD	SDL	SC	IP	VIF
\bar{x}	4.43	4.39	4.39	4.38	4.28	4.43	
S.D.	0.616	0.551	0.550	0.565	0.658	0.503	
PR							2.522
LS	0.639**						2.167
SD	0.642**	0.999**					5.468
SDL	0.688**	0.695**	0.695**				2.549
SC	0.686**	0.576**	0.578**	0.640**			2.135
IP	0.755**	0.697**	0.695**	0.782**	0.773**		

**p < 0.05

In Table 2, it was found that the factors with the highest mean were personal responsibility, which had the highest mean of 4.43, followed by Learner self-direction, Self-directed learning, Self-direction in Learning, and The Social Context with an average of 4.39, 4.39, 4.38, and 4.28 respectively. In addition, when considering the VIF value, it was found to be less than 10, indicating no correlation problems (Multicollinearity) and Correlation Coefficient Analysis (Correlations) r were between -1 and 1 (p-value <0.05), indicating that the variable has a linear relationship at a significant level of 0.05, leading to hypothesis testing by regression analysis.

3. An analysis of tacit knowledge management of the knowledge management process on the efficiency of work by using a SECI Model, and a multiple regression analysis by using a Stepwise technique are shown in Table 3.

Table 3. *The Results of Tacit Knowledge Management by using a SECI Model that affects the Innovation Performance*

Independent Variables	Variable				
	Innovation performance (IP)				
	B	SE	β	t	p-value
Constant					
Learning management process using a SECI Model (SECI)	1.103	0.178		6.209	0.000**
	0.779	0.041	0.800	18.883	0.000**
Constant	1.189	0.180		6.594	0.000**
Socialization: S	0.116	0.048	0.134	2.412	0.017**
Externalization: E	0.175	0.056	0.206	3.130	0.002**
Combination: C	0.157	0.061	0.191	2.568	0.011**
Internalization: I	0.314	0.055	0.396	5.710	0.000**

Adjusted R² = 0.639, ** (p < 0.05)

In Table 3, a Stepwise Multiple Regression Analysis Of independent variables for each aspect found that the 4 variables that affect the innovation performance were Socialization: S, Externalization: E, Combination: C, and Internalization: I were equal to 0.134, 0.206, 0.191 and 0.396 respectively at the statistical significance level of 0.05. In the overall, it was found that the tacit knowledge management was affected by the innovation performance using a

SECI Model with statistical significance at the level of 0.05 ($\beta = 0.800$, $p < 0.05$). Therefore, the hypothesis 1 was accepted with a probability value of 63.9 percent.

Table 4. *The Results of Tacit Knowledge Management by using the PRO Model that Affects the Innovation Performance*

Independent Variables	variables				
	Innovation Performance (IP)				
	B	SE	β	t	p-value
Constant					
The PRO Model (The Personal Responsibility Orientation)	0.689	0.157		4.437	0.000**
	0.853	0.036	0.861	23.917	0.000**
Constant	0.741	0.150		4.937	0.000**
Personal Responsibility : PR	0.169	0.044	0.208	3.852	0.000**
Learner self-direction : LS	0.174	0.053	0.114	2.487	0.014**
Self-directed learning : SD	0.127	0.046	0.139	2.754	0.006**
Self-direction in Learning : SDL	0.287	0.048	0.323	5.950	0.000**
The Social Context : SC	0.263	0.038	0.344	6.908	0.000**

Adjusted R^2 0.740, ** $p < 0.05$

In table 4, a stepwise multiple regression analysis of independent variables in each aspect found that the variables that affected the innovation performance were 5 variables which are personal responsibility with the highest mean of 4.43, followed by learner self-direction, self-directed learning, Self-direction in Learning, and the Social Context that were equal to 0.208, 0.114, 0.139, 0.323 and 0.344 respectively at the statistical significance level of 0.05. In the overall, it was found that the tacit knowledge management was affected by innovation performance and by the learning that emphasized personal responsibility with statistical significance at the level of 0.05 ($\beta = 0.861$, $p < 0.05$). Therefore, the second hypothesis was accepted with a probability value of 74.0 percent.

DISCUSSION AND CONCLUSION

From the research on tacit knowledge management that affects the innovation performance of lecturers at private university, the results were summarized and discussed according to the objectives of the study as follows:

1. Analysis of tacit knowledge management of the knowledge management process that affects innovation performance by using a SECI Model: According to previous studies, it has been found that tacit knowledge management of the knowledge management process by using a SECI Model have a positive impact on innovation performance when considering each aspect found that Socialization, Externalization, Combination, and Internalization affected innovation performance with statistically significant levels due to personnel exchanging knowledge between each other and outsiders by disseminating knowledge, gathering Systematically knowledge, Applying the gained knowledge in this operation leading to the creation of knowledge to flow throughout the organization. This is consistent with the research of Chansukree P. and others (2017) the Study of Knowledge Management in Creative Tourism: A Case Study of Amphawa Floating Market Community Samut Songkhram Province by using the Knowledge Spiral theory used in data collection and analysis (SECI Model). It was found that the Amphawa floating market community has a knowledge management process according to the knowledge spiral theory, which includes exchanging learning (Socialization), knowledge extraction (Externalization), integration of knowledge (Combination), and the embedding or sealing of knowledge (Internalization). Therefore, the Amphawa water market community can use knowledge management to develop creative tourism in a variety and quite complete.
2. Analysis of tacit knowledge management that affects innovation performance by PRO Model that emphasizes personal responsibility. According to previous studies, it has been found that tacit knowledge management by PRO Model learning that emphasizes personal responsibility has a positive effect on innovation performance. When considering each variable factor, it was found that Personal Responsibility, Learner self-direction, Self-directed learning, Self-direction in Learning and The Social Context affected innovation performance at statistically significant levels because the students were responsible for themselves by setting goal plan to learn new things,

applying knowledge in their own work, supporting in the transfer of knowledge, and giving an opportunity to participate in the exchange of knowledge. This is consistent with the research of the sovereignty Potang A. and Photisuvan C. (2016) that studied the accumulation of knowledge in people in order to improve the work ability of workers in the workplace. The social interaction process (Socialization) is the learning of adults. According to the Personal Responsibility Orientation (PRO Model), the process of accumulating knowledge at the workplace of people is entering the labor state, surveying the work, setting Learning management targets, and the accumulation of knowledge in people.

RESEARCH CONTRIBUTIONS

Managerial Contributions

The human resource management of an organization is one of the important policies of the organization. The management of tacit knowledge arises from a knowledge accumulation, work ability, exchange of experience, beliefs, values. There is a process of search, exchange, and accumulate it from a social process through the interaction process. Therefore, the Knowledge Management process (SECI Model) is an important process to help build knowledge, to transform it into new knowledge, and to distribute it to members in the organization. In addition, the accumulation of knowledge also comes from their own learning methods, responsibility for developing one's ability by creating a learning process that focuses on personal responsibility to learn new things to be used in the organization and eventually become the property of the organization.

Theoretical Contributions

This research is a theoretical integration through the use of the concept of knowledge management that affects innovation performance by focusing on the management of Tacit Knowledge using the knowledge management process (SECI Model) and also taking the concept of learning that emphasizes personal responsibility (PRO Model) as a variable. The researcher agreed that it was consistent and suitable for the study in the context of the teachers at private University. The findings obtained from this study are a test for the relationship and influence of these variables, which in theory can bring the findings from this research to further investigation with other independent variables that can influence other variables in the context of each organization.

Suggestions for Future Research

1. This research is quantitative research that used the questionnaire to collect data from the sample only. In future research, qualitative research may be used as well to gain insights with more useful details and able to use research results to improve the efficiency and effectiveness of the organization.
2. In this research, the author was interested in the context of the lecturers of private University only. In future research, it will be able to apply the context of other sample groups to this research, such as personnel from other types of business organizations. The variables in this research can be applied to every organization.
3. It can be able to apply other theories to create variables, to have variable or to study the influence of other factors that affect the performance of various variables that will be beneficial to the organization's development.

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