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#### The Influence of Tacit Knowledge in Developing Small and Medium Enterprise

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This research examined the influence of tacit knowledge on certain factors concerning organizational development such as productivity, motivation, and innovation. The observation entity for this research is several centers of Small and Medium Enterprises in Malang, Indonesia, which produces *tempe* chips. Tacit knowledge is knowledge that is stored in individuals and usually is based on experience, making it difficult to be formulated yet could influence worker's innovation and working performance. Many processes require skill and experience to produce *tempe* chips. Hence these production processes need tacit knowledge from each of their workers. Tacit knowledge within these SME will theoretically affect the number of chips produced, innovation, and increase the motivation of the worker to work. Questionnaire deployment may acknowledge the influence of tacit knowledge on productivity, motivation and innovation. The result of the questionnaire is clarified or validated externally by The Institute of Union and Small and Medium Enterprise's Marketing Department. This research concluded that tacit knowledge does not affect innovation and productivity yet it affects motivation.

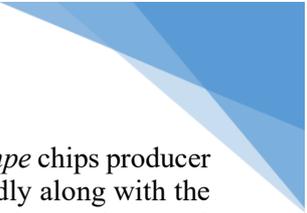
**Keywords:** *Tacit Knowledge, Small and Medium Enterprise*

#### 1. Introduction

Small and medium enterprise (SME) is an important business sector to country's economic growth, especially Indonesia, which consists of thousands of islands, with each island having a unique culture that triggers various kinds of business. Moreover, each business has its quality and style in demonstrating the characteristic of Indonesian culture. SME has a significant role in developing Indonesian economic condition through revenue generation and also helps in reducing unemployment with its 57.9% GDP contribution.<sup>1</sup>

The problem occurring in today's SME is the competition with goods produced by big industry from Indonesia or even another country. Those industrial products have higher quality and competitive price, which is a disadvantage for SME. There are internal problems that need to be fixed e.g. the education level of workers, which lies between junior high school and senior high school. It is also a disadvantage for SME to compete with industrial workers because industrial workers have better education level. Every organization will always be provided with important assets such as organizational knowledge, operational routines, skill or know – how<sup>2</sup>. Tacit knowledge is a part of knowledge management that can help the organization to increase their performance by designing a system integrated with human aspect (1), process aspect (2), technology aspect (3) and content aspect (4) which is a part knowledge database. Thus the recipe for increasing company's performance is by implementing a good knowledge management. Company's performance is also affected by worker's performance. Working performance as the primary indicator to measure operation management performance (5). Tacit knowledge can affect the performance of each worker.

The industries that become the object of these research are four SMEs producing *tempe* chips located in the center of these SME including so that it can be more measured the effect on the development of SMEs that produce traditional food in Malang such as *tempe* chips. One of the objects is Keripik *Tempe* Amel's



brand is quite familiar to the customer. Indeed SME Keripik *Tempe* Amel is the largest *tempe* chips producer in Malang, but now some SME producers of *tempe* chips have also started growing rapidly along with the increasing interest of domestic tourists to visit to Malang. Based on the empirical data during the initial survey, tourists and residents in Malang almost entirely (90%) know SME Keripik *Tempe* Amel.

The workers are local residents near the SME's location. Demand is another aspect that helps the SME to keep improving, which also caused their workers to produce more *tempe* chips. Nevertheless, a high number of workers turnover affects the quantity of the produced *tempe* chips negatively because it requires particular skill and experience to produce *tempe* chips. Every time turnover occurs, the business owner must guide the new worker on how to produce a *tempe* chips. For the same amount of *tempe* chips, a new worker will need more time than the experienced one. Moreover, this will cause inconsistent production from SME Keripik *Tempe* Amel. The gap is on delivering the same amount of chips under the same amount of time, with comparable quality.

The working procedures in the center of SME is created based on the general production process of *tempe* chips. Nonetheless skill and experience have a differentiating role to worker's performance, despite the fact that every worker received the same training on how to produce the *tempe* chips from the SME owner. Therefore this research is conducted with the aims to: Identify the characteristic of tacit knowledge on productivity, motivation and innovation; Analyzing connection between tacit knowledge and productivity, motivation and innovation.

## 2. Literature Review

### 1.1. Tacit Knowledge

Tacit knowledge can be defined as a formulated experience that is hard to communicate<sup>3</sup>. Michael Polanyi, a well-known philosopher, introduced the concept of tacit knowledge in 1998. Polanyi explained tacit knowledge as human's ability to know more than what we know and has the ability to know more than what we can say.

Tacit knowledge consists of technical skills such as, know-how and another cognitive dimension such as mental model, perspective trust, and experience. This kind of knowledge is almost impossible to be written formally. There are some characteristic of tacit knowledge, such as:<sup>3</sup>

- a) Hidden in human minds, yet hard to be formulated (e.g. someone's ability)
- b) Play an important part in creativity and innovation.
- c) It can be formulated by externalization process
- d) One of the examples of tacit knowledge is expert's years of experience

Tacit knowledge is another type of knowledge that is stored in someone's mind, such as opinion, perception, knowledge, skill and etc. Tacit knowledge plays a role in creating innovation, because it serves as the basis for one to innovate. Since it has a substantial effect to innovation, tacit knowledge can be classified as a competitive advantage. Tacit knowledge has a major effect on worker's daily activities by helping workers to manage their task, others' and basically themselves.<sup>4</sup> Tacit knowledge's role in managing worker's daily activities is considered to be affected by worker's motivation to give their best performance. Tacit knowledge's role in managing other people is based on interaction with the supervisor and with other co-workers. Equally, tacit knowledge's role in managing people's task is related to knowledge about what a good performance at work is.

### 1.2. Productivity

Productivity is an important measurement for performance in operation management, which then can be leveraged to determine the quality of resources. The resources should be managed as how the company desires, to deliver a good result.<sup>5</sup> The indicators to measure the employee's productivity are quality of work, quantity of work, effectiveness of work, efficiency of work, working methods, and the ability to work.

Quality of work is a measure of how far the states have met the various requirements, specifications, as well as expectations. The quantity of work is a measure that tells us how much work or optimization in executing work. Effectiveness of work is the measurement to evaluate the target that can be reached. The efficiency of work is the measurement to compare the resource plan we have made with the resource that are actually used for the work.

### 1.3. Motivation

Human behaviors have always oriented toward their purpose and are stimulated by the desire to reach their goal. Human action is based on the series of their activity.<sup>5</sup> Motivation is the power of the human that drives them to reach their purpose and goals. Several theories relate motivation to the benefit that the organization can have. This benefit lies within the human, thus indicates a relationship between motivation and the goal of the organization. There are three keys of motivation: effort, organizational goals, and needs. So it can be said that within an organization, an employee has the motivation to work if her behavior and her effort have the same direction with the goal of the organization.<sup>1</sup>

### 1.4. Innovation

Innovation is defined as an implementation process to change creativity concept to become a reality.<sup>6</sup> In the development process of creativity concept, time and efficiency are considered to be the elements of innovation that play a role in generating high revenue. It is known as an effective innovation.

Innovation is the activity of work that has some characteristics, i.e. organized, systematic, rational and conceptual. In action, innovation requires every change in both external and internal of the organization to be visible. Innovation is an attempt to realize and implement a new idea to be a successful business. In this step, innovation is a continuation from the invention. The invention is a creative activity to make a new concept.<sup>7</sup> Innovation highlights a new idea or creates something new, which can give benefit to the company or organization.

### 1.5. Partial Least Square

Partial Least Square (PLS) was first developed by Herman Wold. PLS is the general method to estimate path model that uses latent constructs with multiple indicators. In 1966 Wold presented two procedures to use the method of least square estimation for single and multicomponent.<sup>8</sup> In essence, Wold constructed PLS to examine some of weak theories and the problem of normality assumption data distribution. Part Least Square Analysis is a multivariate statistical analysis method to compare multiple dependent variables and multiple independent variables. PLS is one of SEM statistical methods that is based on variance. Moreover it can be used to test measurement and structural model. The measurement model is used to measure validity and reliability, on the other hand, structural model is used to test a hypothesis based on prediction model (causality test).

## 3. Research Methodology

Some existing conceptual models are chosen as the primary model in this research, they are:

1. Tacit Knowledge Model, which explains the factors that affect Tacit Knowledge.<sup>9</sup>
2. Tacit Knowledge and Innovation Model, which portrays the relationship between Tacit Knowledge and Innovation.<sup>7</sup>

In this research, productivity and motivation were added as new variables, which then be examined to find out how the relationships are with Tacit Knowledge in developing SME. The research hypotheses and research model are presented in Table 1 and Figure 1 respectively.

Table 1: Research Hypotheses

Hypotheses			
H <sub>01</sub>	Tacit knowledge does not influence productivity	H <sub>11</sub>	Tacit knowledge influences productivity
H <sub>02</sub>	Tacit knowledge does not influence motivation	H <sub>12</sub>	Tacit knowledge influences motivation
H <sub>03</sub>	Tacit knowledge does not influence innovation	H <sub>13</sub>	Tacit knowledge influences innovation

## 4. Discussion

The significance level of a construct can be obtained by conducting significance test through a T-statistic score that can be concluded from Total Effect score, obtained from Smart PLS output. It will then be compared to T – statistic score from T – Table. T – Statistic score from 95% confidence level and 46 data is 2,016 (v: (n-1); 45, 0,025). For instance, the T-Statistic score for the manifestation of experience variable

(tacit knowledge construct) is 8.45, so it can be concluded that manifestation of experience variable is the right way to measure latent variable since it has a higher score than 2,016.

In order to prove the research hypotheses, a test is being conducted by Smart PLS. This test is conducted by comparing T-Statistic score from PLS output to T-Statistic score from T – Statistic Score table. This test is two-way statistical test with 95% of confidence level. This hypothesis test  $\alpha$  is 0,025 with 46 data, thus the T- Statistic score from T-Statistic Score table is 2,016. If T-Statistic score from PLS output is higher than 2,016, researcher’s hypothesis will be accepted. The output of Smart PLS is presented in Table 2 and Table 3.

Table 2: Hypothesis Test Result

Endogen Relationship	T-Statistic	Result
Tacit Knowledge → Productivity	1.89	Accept H <sub>0</sub> 1
Tacit Knowledge → Motivation	7.36	Accept H <sub>1</sub> 2
Tacit Knowledge → Innovation	8.55	Accept H <sub>1</sub> 3

Table 3: Computation Result of Smart PLS

Latent Variable	Manifest Variable	T-Statistic Score	Remarks	Latent Variable	Manifest Variable	T-Statistic Score	Remarks
Tacit Knowledge	Experience	8.45	Significant	Productivity	Working Quality	7.09	Significant
	Personal Interaction	7.82	Significant		Quantity	6.77	Significant
	Communication	8.55	Significant		Effectiveness	8.25	Significant
	Workplace Condition	9.02	Significant		Efficiency	7.56	Significant
	Transfer Knowledge	7.99	Significant		Working Method	9.20	Significant
	Situation	7.67	Significant		Working Performance	8.92	Significant
	Oriented Target	8.87	Significant		Strategy	7.77	Significant
	Informal	6.23	Significant	Uniqueness	6.43	Significant	
Motivation	Needs	7.11	Significant	Innovation	Research	7.49	Significant
	Desire & Hope	10.44	Significant		Working Experience	10.33	Significant
	Working Environment	9.33	Significant		Knowledge	7.66	Significant

The process of frying on the production of *tempe* chips is an essential factor to ensure that the final *tempe* chips are perfectly done and crunchy to eat. That requires specialized skills in the process of frying thus the adequate experience is needed to perform this well, which cannot be replaced with one or two-day training.

According to the information from the business owner, employees who can perform the process of frying well (good quality) have working experience at the frying station for about four years. The frying process is a process that requires the most technical skill, so much that it needs nourished tacit knowledge, which can only be done by an experienced worker. It was not a surprise then to discover during observation that the experienced worker (around 4 years of experience) can fry more *tempe* chips than a new one despite the fact that both of them have the same tutoring session from the business owner on their first day of work. It is possible that the tacit knowledge based on the experience is obtained when the employee works in the frying section for more than one year only.

In this Center of SME, there is no competition between workers to produce the most *tempe* chips to get more payment. In this case, the workers split the assignments by prioritizing experienced worker. It is firmly believed to be the reason why tacit knowledge does not influence productivity. Productivity, on the other hand, can be measured precisely since the workload is split based on prioritizing experienced worker.

This research concluded that tacit knowledge influences motivation. The reason for that is the worker's need and their desire to buy their needs (food, house, etc.) is their basis to do their best.

Innovation is one of the variables that use in this study. In the process of frying in *tempe* chips business, there are innovations that can be done related to the process and products. Innovation can be done by formulating the amount of vegetable oil used, the duration of frying *tempe*, the type of stove used, the heat needed and storage shortly after fried *tempe*. From this research, it can be concluded that tacit knowledge influences innovation.

Worker's productivity is not affected because workers split the assignments by prioritizing experienced worker. It means that each worker's is not competing to do their best, because they respect the more experienced worker, so workers just let the more experienced worker do more work so that they can earn more money than another worker.

## 5. Conclusion

Based on the data analysis, two conclusions can be made:

1. Tacit knowledge influences motivation and innovation, however, it does not influence productivity.
2. Tacit knowledge does not influence productivity since workers are dividing their task by prioritizing experienced worker hindering the trajectory of an incentivized environment for producing more.

Several suggestions for the SME to facilitate innovation and productivity based on the result are as follows:

1. For theory development:
  - a. Further research can be done for other food-producing industries to produce a comprehensive conclusion
  - b. More exploration is needed to determine possible relationship between tacit knowledge and collisions to factors other than productivity, motivation and innovation.
2. For SME development:
  - a. Evaluate for each department or section that gives a significant effect on the final product result
  - b. Perform and arrange a division of labor so that each new employee can work with more experienced employees, with the aim of speeding up the process of sharing tacit knowledge.
  - c. Start having dialogue and initiatives with employees, particularly the frying team, with regards to fair and constructive assignment deployment to foster similar capability development.
  - d. Identify the areas where innovation is possible to apply by asking inputs from workers on the pain points in operational execution.

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## Figure Captions

Figure 1. Research Model

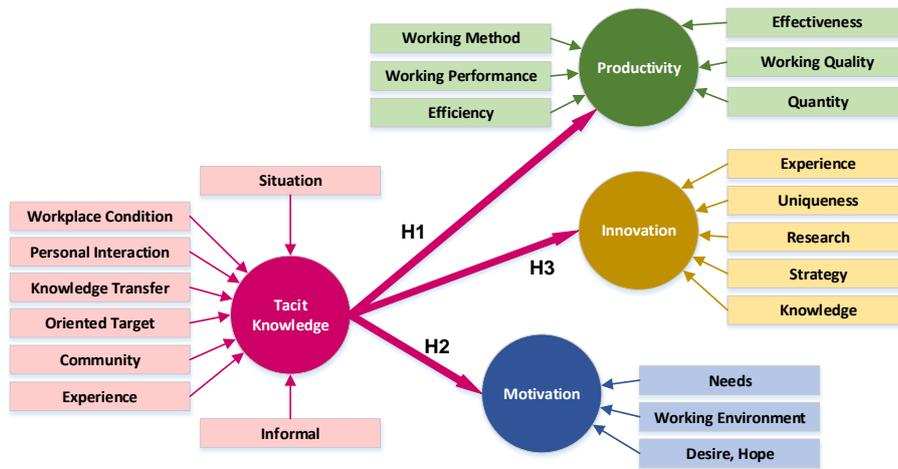


Figure 1. Rumanti et al.