

## **The Model Of Knowledge Transfer Of Small And Medium Enterprises In Creating Product Innovation (A Case Study Of Cracker Enterprises In Tuntang, Semarang Regency)**

Linda Ariany Mahastanti <sup>1)</sup>, Widi Yeterina Nugrahanti <sup>1)</sup>, Sri Hartini <sup>2)</sup>,

<sup>1)</sup> Staff Lecturer Faculty of Economics and Business of SWCU Salatiga Indonesia

<sup>2)</sup> Staff Lecturer Faculty of Mathematics and Science of SWCU Salatiga Indonesia

---

**ABSTRACT:** *The growth of SMEs in Indonesia are very fast, but they do not have any good competitive advantages. It happens because they do not have good knowledge transfer in creating product innovations. Knowledge transfer has become one of strategic issues in SMEs, in order to increase their capabilities in running and creating good innovations for their businesses. However, a review of the literature shows that no empirical research has analyzed any knowledge management issues at the inter-organizational level in SMEs. This paper reported a result of an empirical investigation which was taken in manufacturing sector of local SMEs in Salatiga to identify their needs and practices regarding inter-organizational knowledge transfer, and thus to provide empirical evidence to support the above beliefs. This study used a two - tier method (i.e. used both questionnaire survey and interview approaches) which were deployed to address the main research objectives. A questionnaire survey of SMEs was carried out to investigate their current inter-organizational knowledge transfer situation and owner perception on various relevant issues. Then five face-to-face interviews with SMEs owner were conducted to have further valid key findings drawn from the questionnaire survey. The empirical evidence which was collected from the survey and interviews confirmed the general belief that external knowledge is the most important thing for SMEs, and it also demonstrated that SMEs have very strong needs for external knowledge and inter-organizational knowledge transfer. This study has certain limitations: its results may not be applicable to other industrial sectors or the same sector in other countries; or to any other micro or large companies. Besides, it did not involve any cross-cultural issues.*

**KEYWORDS :** *Knowledge Management; Knowledge Transfer; Inter-Organization, Innovation, SMEs*

---

### **I. INTRODUCTION**

#### **1.1 Background**

Recently, the founding of many small developing businesses are based on the philosophy of the *family business* because they involve family members in managing the businesses. One portrait of those small businesses is a small business in which the establishment is based on family business. It is a cracker industry which is located in Tuntang, Semarang Regency. Their small industries were mostly started from the family, the fathers as owners and other family members such as wives, sons, and daughters assist in the management and production processes. In Tuntang, Semarang Regency, there are two villages that almost all of their livelihoods are from the cracker business, i.e. Gading and Praguman, with a total entrepreneur of approximately 107. Crackers which are produced can be divided into two, namely soybean crackers and cassava crackers. The types of cracker business conducted crackers have two different kinds of crackers, that are by using raw soybeans and cassavas. Almost all of the entire population of those villages (Gading and Praguman) are crackers entrepreneurs. They do the same business because they were motivated by other neighbors who had started it and had succeeded before. The potency of this cracker business is huge, because in one month, those crackers entrepreneurs are able to produce and sell 800 packs (5 kilograms/pack) with the cost of Rp 7,200,-/kg (IDR). Thus, their average monthly turnovers can reach Rp 28,000,000 (IDR),- with the average net profits of 3.6 million Rupiahs per month.

Based on the research held by Mahastanti and Nugrahanti (2010), it was stated that most of the cracker entrepreneurs had experienced for 11-15 years, but their turnovers are still relatively small, about 5 million Rupiahs/month. This data shows that the cracker entrepreneurs have not been able to utilize their knowledge to do the business innovation in order to improve their incomes. The research held by Mahastanti and Nugrahanti (2010) also found that the cracker entrepreneurs had problems in fulfilling the raw cassavas which the price recently have been increased for about 25%/kg compared to the previous year. On the other hand, they were also reluctant to raise the prices of their crackers, since they were worried that there would not be any buyers who

wanted to buy it. In addition, they also have some constraints associated with the process of innovation in producing crackers. Whereas, if the entrepreneurs are succeed to make the innovation for their crackers well, for example by providing various spices and nutritional value as well as the different packaging according to the market tastes, it will not be impossible to raise the price of the crackers. It indicates that the *competitive advantage* owned by *entreprenur* in those areas is still very low. Whereas, the increasing competitions in the business requires higher creativity and product innovation to increase the *competitive advantage*, profitability, and business continuity support (Pimentel and Campos, 2008). During this time, those entrepreneurs still regard crackers as ordinary snacks. In fact, if crackers can be produced by adding some innovation in the taste and different nutrients, then it is possible that these crackers can be processed into high quality dishes. The higher value of the crackers can definitely increase the price. The process of product innovation that can not run well in those area is thought to be the result of the level of education which is owned by crackers entrepreneurs are still very low. Mahastanti and Nugrahanti (2010) found that the average level of education of those entrepreneurs in Tuntang is only in Elementary School level. It shows that the quality of Human Resources (HR) there is still very low. However, their level of work experience in the cracker industry is approximately 11-15 years. This condition is interesting to see that the process of product innovation can not running easily, even though they have long experiences. This is thought to occur because of the low quality of human resources which makes it difficult to develop the innovation process because they do not have adequate *knowledge*.

To foster the process of learning in creating the product innovations, they need good *knowledge* transfer. The learning process which is needed to develop innovations can be done individually, in groups, or in the level of industrial organization (Shrivastava, 1993, in Sabestova and Rylkova, 2011). Looking at the characteristics of *entrepreneurships* in the cracker businesses, the process of learning for *knowledge transfer* can be done either individually through the work experiences, or as a group to make the process of *sharing knowledge* regarding their education levels are quite low, this group work is expected to build a good learning process among them. *Sharing knowledge* is one form of communication that is needed in *transferring knowledge*. According to William and Gibson (1991) in Wahab (2009), the approach of communication is a good way to do a two-way interaction in a sustainable manner and simultaneously to express the ideas. Regarding their low education levels, the model of communication will be done through a group work. In the group work, the entrepreneurs will be able to work collectively and can also easily gain access to the information altogether because they will learn to create networking system among the cracker entrepreneurs collectively. Ribeiro Soriano and Urbano (2009) stated that by working collectively, an entrepreneur can broaden his horizon in entrepreneurship and can also easily create new innovations to create a new market. With this collective work, it is expected that they can exchange information each other about the productions of crackers that exist today which will then encourage them to innovate.

### 1.2 The statement of the problem

This research will create a model of the development of production innovation through the appropriate *knowledge transfer* process for *entrepreneurs* by using business group as a medium in growing good *knowledge capital* among them. It is important to analyze that the characteristics of the cracker entrepreneurs in Tuntang, Semarang regency are very different, i.e. their average level of education is only primary school, with high level of work experience, so that the model of its *knowledge transfer* also needs to adapt to the characteristics of their education.

### 1.3 Research Objectives

Creating a model of *knowledge transfer* in accordance with the characteristics of cracker business in Tuntang, Semarang Regency.

## II. LITERATURE REVIEW

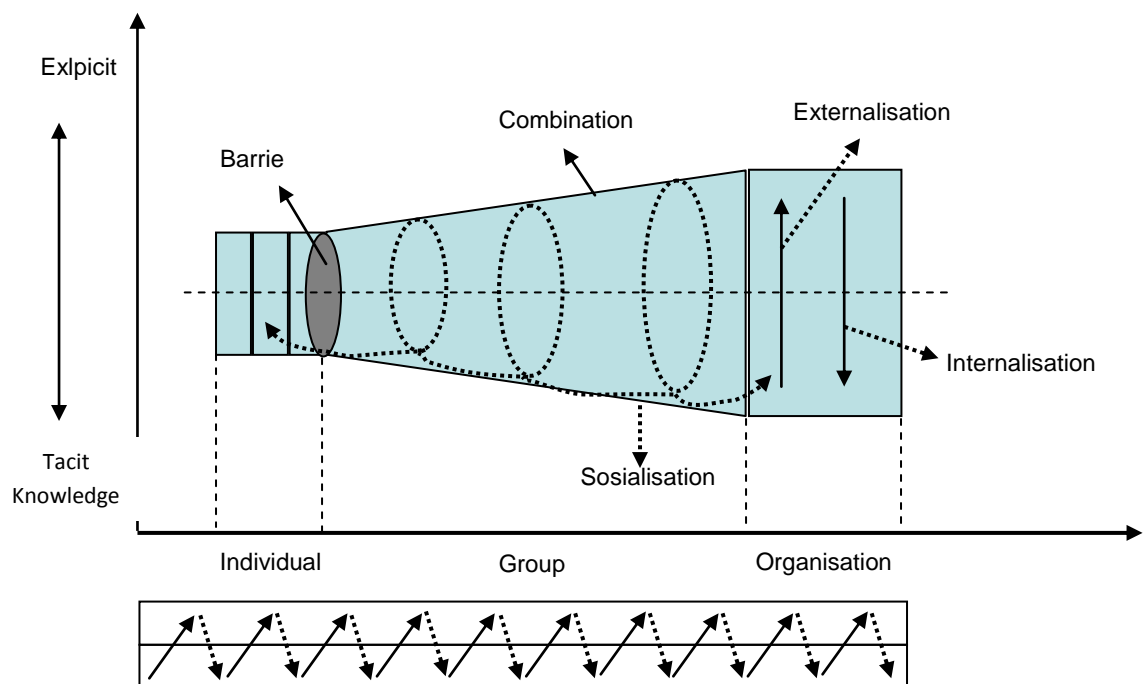
### 2.1 Knowledge capital: Definition and Development

In this globalization era, managing knowledge can be applied as strategies to improve competitiveness (Evans, 197; Hedlund, 1994; Hibbard, 1997; Martinez, 1998; Trussler, 1998). Knowledge possessed by the human beings is very important capital and is needed to develop innovations that are needed to increase productivity in various sectors. Innovation which is based on knowledge has two forms; *exploitative innovation* and *explorative innovation* (Martin & Lu, 2006). *Explorative innovation* is more directed to how to find new ways or new discoveries, while *exploitative innovation* is more about the development that has already existed to be more efficient. The biggest challenge in developing the innovation lies in how to develop and balance the *explorative* and *exploitative innovation* to improve competitiveness. There are some definitions of innovation that exist in the literature, but apart from those debates about the definition of innovation, Sexton and Barrett (2003) explained that the "idea" is only the first step in the emergence of innovation. In general,

innovation is a product which is considered as new product by the society (Rogers, 1983). Furthermore, innovation is also meant as an action to do something by using the way, technology, products, and processes differently in order to improve the efficiency and effectiveness or achieve the expected goals. Basically, humans have had knowledge that can be used in completing certain activities or works in certain ways either they are done independently or with others. The possessed knowledge is the dynamic ability to innovate. Thus, the development of the innovation ability must be in line with the development of human resources knowledge. Knowledge is traditionally classified into 2 types: tacit and *explicit knowledge* (Polanyi, 1962, 1967). *Tacit knowledge* is a "verb", so it is more a process of knowledge in creating and using knowledge. De Long and Fahley (2000) identified three types of knowledge that can build humans' *tacit knowledge*: 1) *human knowledge* (HK), which is the knowledge of what individuals know or how an individual should in doing something that can be based on experience, knowledge, and skills. According to Polanyi (1958), one of the forms of human knowledge is tacit knowledge that comes from the accumulation of experiences; 2) *Relationship/social knowledge* (RK), which is the knowledge that comes in the relationship of individuals and groups to increase the added value of the activities which are done together; 3) *Structural knowledge* (SK) which is the knowledge about how a system, process, technology, and routine exist. Those three types of knowledge are very important in order to understand how innovation can be developed. HK, RK and SK, are very important in managing the possessed knowledge possessed effectively and creatively (Martin & Lu, 2006). HK, RK and SK always relate one to the others. Those three types of knowledge are the resources that are needed to build *knowledge capital*.

Figure 1. Spiral of Knowledge (Martin & Lu, 2006)

Spiral of knowledge creation



The picture above explains how *knowledge capital* can be developed through *knowledge sharing* with the dissemination of information. The good flow of information from each party involved in a system, can lead to knowledge management and knowledge *sharing* which are also better (Buckman, 1998). Theoretically, a growing knowledge can have a potential impact towards behavior (Slater & Narver, 1995), so the presence of these behavioral changes can lead to better productivity (Slater & Narver, 1995; Agryris, 1992). The level of product innovation of cracker entrepreneurs is shown from a relatively low level of productivity that is not really different annually shows that the behavior and knowledge possessed by the entrepreneurs do not have much changes. The low level of knowledge is also one result of the low level of education. In addition to the education level, cultural factors are often be an obstacle in the process of adoption of innovation as the development of the existing knowledge. Culture and customs give certain difficulties when the people implement their new knowledge (Hibbard and Carrillo, 1998). The flow of information becomes one important factor in the process of knowledge transfer and innovation development. Some results of researches showed that the good flow of information can support the process of innovation adoption better. Thus, the development of knowledge does

not only happen through education to increase *human knowledge*, but *relationship knowledge* through the development of networks to support the flow of information is also very important in developing *knowledge capital*. Three types of knowledge as described above, namely *human knowledge*, *structural knowledge*, and *relational knowledge* become the basics which are needed in the process of improving the ability to innovate (Lu & Sexton, 2006). The weak flow of information in making an effort to develop innovation in the sector of cracker businesses becomes very slow. This condition is a constraint in developing innovations.

## 2.2 Development of Knowledge Transfer among the Cracker Entrepreneurs

Based on the results of research held by Mahastanti and Nugrahanti (2010), it was found that the *women entrepreneurs* have the average level of education of Elementary School with the work experiences between 11-15 years. From the data above, the average level of education of women co-entreprenur is still very low, only in Elementary School (SD). Nevertheless, the experience of the entrepreneurs is already quite high, at 11-15 years. The low level of educational quality is thought to be the cause of why product innovation process can not be carried easily, although they already have a sufficient level of work experience. In addition to education level, cultural factors also become obstacles in developing the cracker business sector. In implementing new knowledge, the culture and customs can cause obstacles (Hibbard and Carrillo, 1998). The lack of ability to innovate in the cracker business sector is also caused by most cracker entrepreneurs who do not have adequate knowledge. Three types of knowledge as described above, namely *human knowledge*, *structural knowledge*, and *relational knowledge* basics are needed in the process of improving the ability to innovate (Lu & Sexton, 2006). In the cracker business sector, most entrepreneurs are only Elementary School graduates, so the way how to process the crackers is based on traditional ways and habits followed by the suitable possessed experiences. The weak network of cooperation between the business sector and outside the cracker business sector, has created very weak access to information and market. The weak flow of information makes the effort in developing innovations in small-scale business sectors to be very slow in Indonesia. This condition is a constraint in developing the productivity of small businesses in Indonesia. The foundings of business groups are potential to increase innovation within and between groups of small-scale farmers and farm workers. In addition to the business groups, it may foster greater sense of enthusiasm among cracker entrepreneurs, which finally is able to induce a sense of trust between them, so that it can grow the courage to take a chance in doing business with innovations. Innovation process can be grown well in doing the *knowledge transfer* and learning processes together (Swan, Scarbrought, Robertson, 2002).

## III. RESEARCH METHODS

### 3.1 Research and Development

Research and Development is a process or steps to develop a model of knowledge transfer for cracker businesses in Tuntang. The characteristics of Research and Development is that this study shaped "cycle", which began with the needs, problems that needed to solve with a particular product (Danang, 2010). The cycle consisted of planning, making the acts of planning, observing, evaluating (including self evaluation) and critical analysis to go back to the early stages of planning (O'Brien, 2001; McNiff, 2002). All those cycles were followed by the direct participation of the objects of research with the aim to improve the practical ability of the objects and also capable of empowering the ability of local communities (Dick, 2002). /on the other hand, according to Borg and Gall (1989:782) in (Danang, 2010)., a model of research and development is "a process used to develop and validate educational product."

Research and Development also aimed to discover new knowledge through 'basic research', or to answer specific questions about the problems of a practical nature through 'applied research', which is used to improve the practices of empowerment of SMEs. In this research, Research and Development were used to produce a model of knowledge transfer as empowerment, so the ability of the cracker entrepreneurs can be developed. In this study, the research stages by using research and development methods are as follows: 1) researching and collecting information about the needs of development, cracker's product innovations, 2) planning component prototypes which would be developed, including defining types of crackers that would be developed, setting the goals, determining the sequence of events and making a measurement scale (research instrument), 3) developing an initial prototype to be used as a model for communicating (knowledge transfer of cracker innovations to the crackers entrepreneurs), 4) validating the conceptual model to the experts or practitioners, 5) conducting a limited trial (phase I) to the initial model, 6) revising the initial model, based on the results of testing and analysis of data, 7) conducting extensive tests (phase II), 8) doing a final revision or smoothing the models, if the researchers and other parties assessed the processes and products related to the resulting models had not been satisfactory, and 9) creating research reports and dissemination to various parties.

### 3.2 Research Sites

The research was conducted in the area Tuntang, Semarang regency, Central Java Province, with a population of small entrepreneurs who engaged in the cracker industry. The selection of this location was based on the social and economic condition of small cracker businesses that could describe the situation of the research. Another consideration was the ease of accessing information from the site (manageable). This site selection was expected to describe the research problems that had been formulated.

### 3.3 Data Collection Techniques

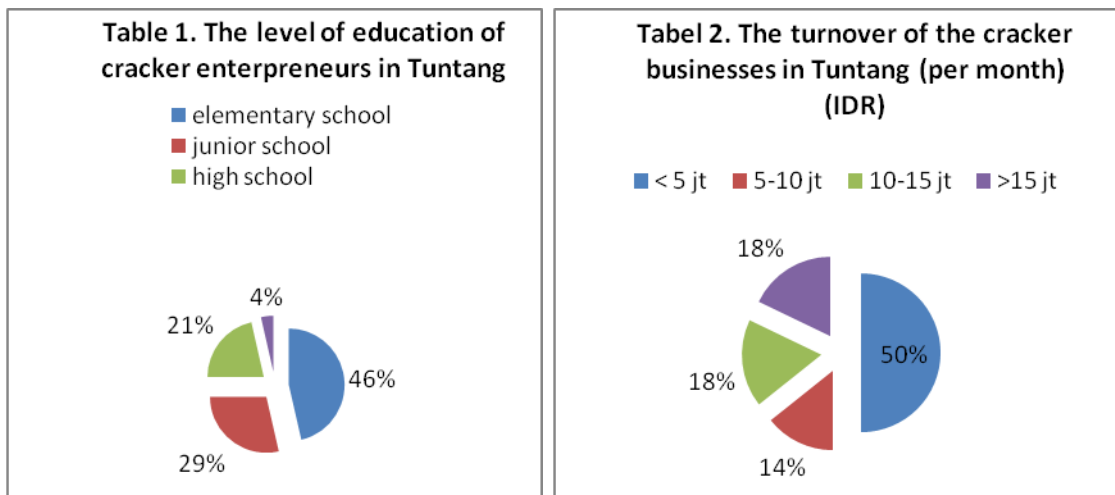
The data consisted of primary data and secondary data. The primary data was obtained through direct observation in the field with the guidance on the use of questionnaire as the research instruments, while the secondary data was obtained from various reports and relevant publications of the research. The completion of the questionnaire was conducted by using direct interview technique to the respondents through the FGD process. In addition, it would also be studied in depth (in-depth interviews) to a few key people to describe the role of the entrepreneur there.

### 3.4 Sampling Techniques

The population of this study was the small crackers entrepreneurs. The unit of analysis of this research was the cracker entrepreneurs who involved their wives in managing their businesses. The samples who would be used as the unit of analysis would be taken by using purposive sampling technique with the type of judgment sampling. According to Emory and Cooper (1991), this technique should be used when the researchers want to carefully choose the sample members to meet several criteria in accordance with the research objectives which are wanted to be achieved and to meet the criteria of the picture of the population.

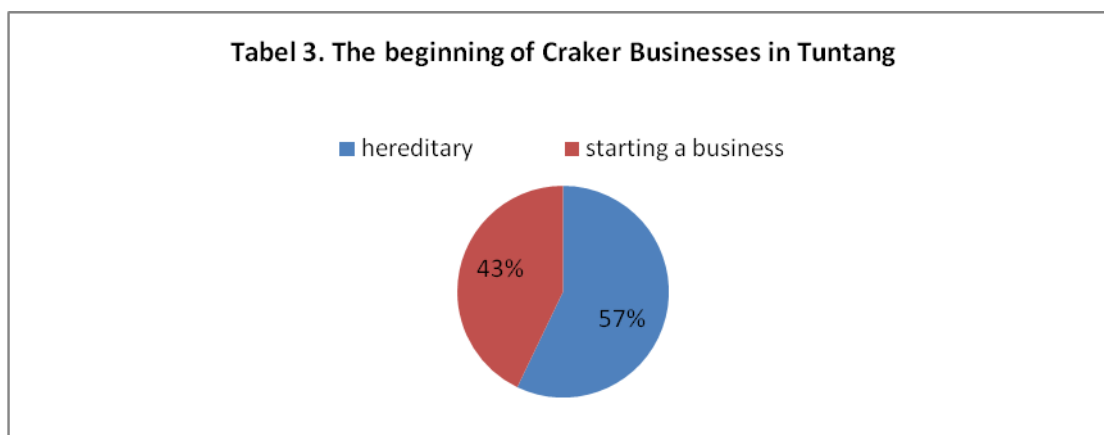
## IV. RESULTS AND DISCUSSION

The appropriate model of *knowledge transfer* for SMEs is also influenced by the characteristics of the respondents of the entrepreneurs. The data of the respondents of this research are as follows:



Based on their education level, most of cracker entrepreneurs in Tutang had a level of education that was not too high; they just graduated from Elementary School (46%) and Secondary Schools (29%). While the turnover which was earned in month was at the range of <5 million with the value of 50%. This indicated that there was a positive relationship between the level of education and their incomes. With low levels of education which make those cracker entrepreneurs were not able to innovate and apply good management of their businesses. Low levels of education made their knowledge not too high, so that their innovations and managerial skills were also low.

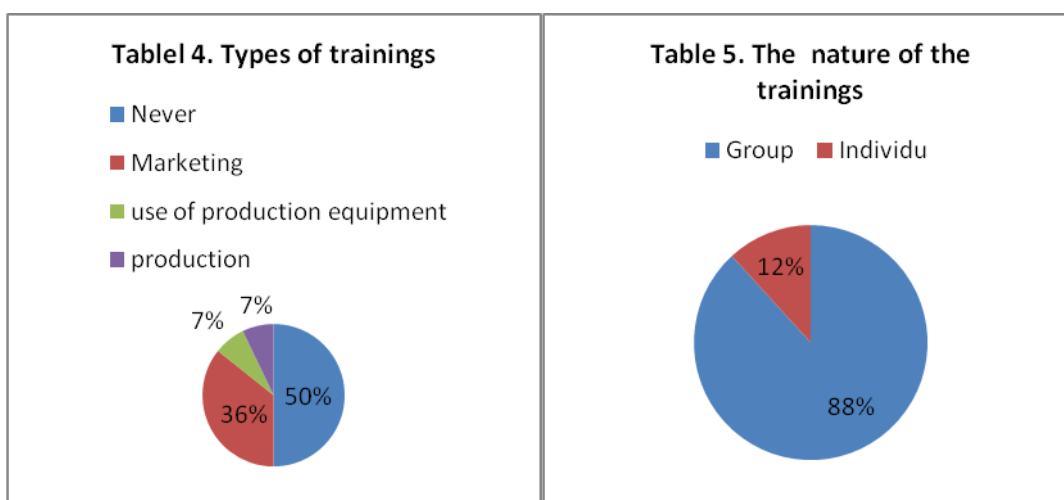
To see the characteristics of *knowledge* (knowledge), which had been owned by the cracker entrepreneurs, it will be explained in table 4 below in more details.



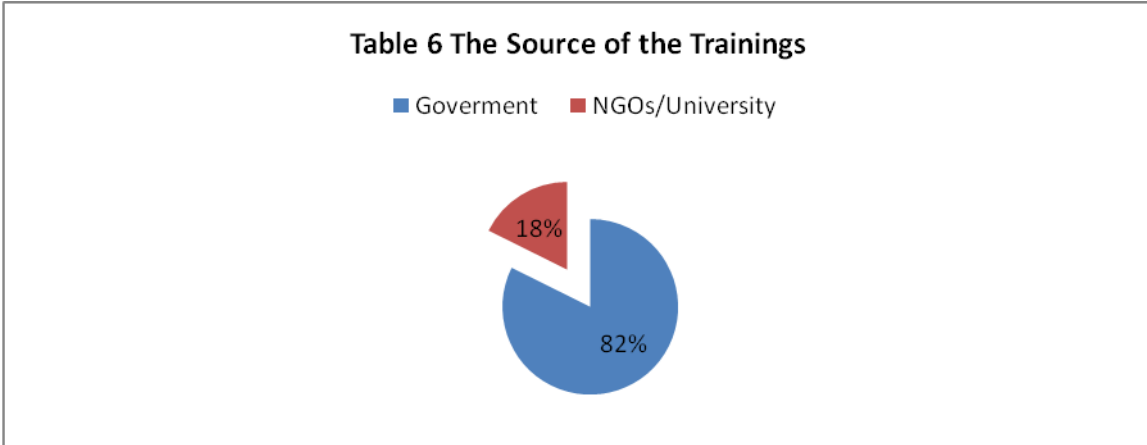
Source: Data processed in 2013

Based on the table above, it can be seen that most of the cracker entrepreneurs in Tuntang started their businesses from their parents' business heritage. Since childhood, they had observed the process of making crackers. It occurred because the production process was located in the same house where they lived. This process was not directly embedded in their minds through the process of accumulation of *knowledge* over the years. As they grew older, most of them were interested in doing the same business with their parents. It was chosen because nowadays, it was quite difficult to find a job for the people whose average education level was not too high, that most of them were rather being entrepreneurs than working in a factory in which the salary was not too high. Thus, the ability of *tacit knowledge* possessed by the cracker entrepreneurs in Tuntang was unbelievably good enough, because it was formed from the process of observation and long experiences of their parents, which were then inherited to their own businesses. The *tacit knowledge* that had been owned by entrepreneurs is like seasoning in the dough of crackers and the process of its productions.

Next, it would discuss about the *explicit knowledge* that had been owned by the cracker entrepreneurs. *Explicit knowledge* has the opposite characteristics with *tacit knowledge*. Usually, the *explicit knowledge* can be seen and studied more easily because it has a clear procedure in doing so. It does not require a long observation and experience to be mastered. Therefore, the *explicit knowledge* would be seen from the participations of the cracker entrepreneurs in joining business trainings. Here is some information related to the trainings that have been attended.



Source: Data processed in 2013

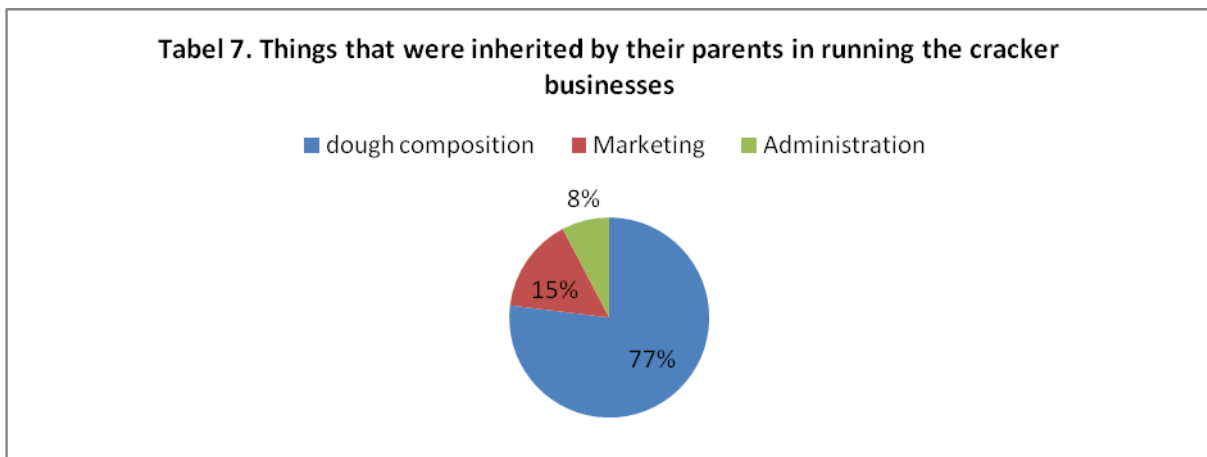


Source of data processed in 2013

The picture above shows that there was a balance between the entrepreneurs who joined the trainings and the ones who did not join the training; 50% of them joined the trainings, and the rest did not join them. The large number of entrepreneurs who did not join the trainings was due to the information received from the training providers (Department of Cooperatives and SMEs) were often not distributed evenly. Only some of entrepreneurs who had close relationships with the Department were aware about the information. Most trainings which had been joined were marketing trainings (36%), most of training providers were from the Department of Cooperatives and SMEs (82%). While the nature of the training was in groups (88%). It happened because usually those Departments always held the trainings in the form of a business group so that the knowledge could be disseminated widely to the members of the group. On the other side, the roles of Universities and NGOs in providing training in cracker businesses in Tuntang were still very limited, only about 18%. Because many entrepreneurs had not received training assistance from the Department (50%), it was expected that this opportunity could be taken by the Universities and NGOs to provide trainings in creating innovations and enterprise management.

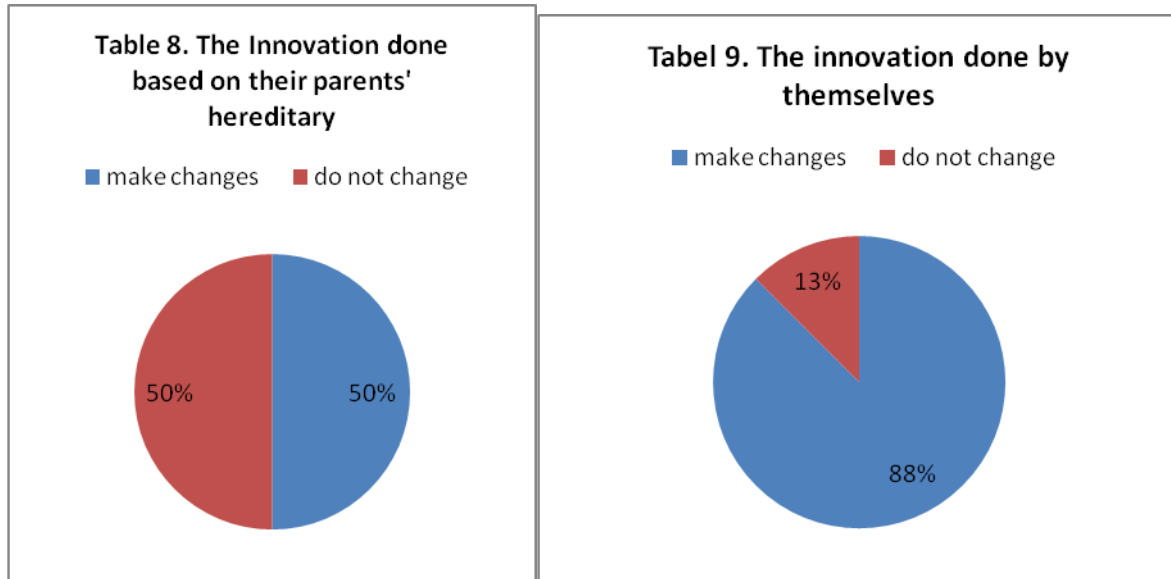
#### 4.1 Business Hereditary

In the following discussion, it would be disclosed in details about business hereditary they had been doing. The following table describes some knowledge about what their parents inherited to them.



Source of data processed in 2013

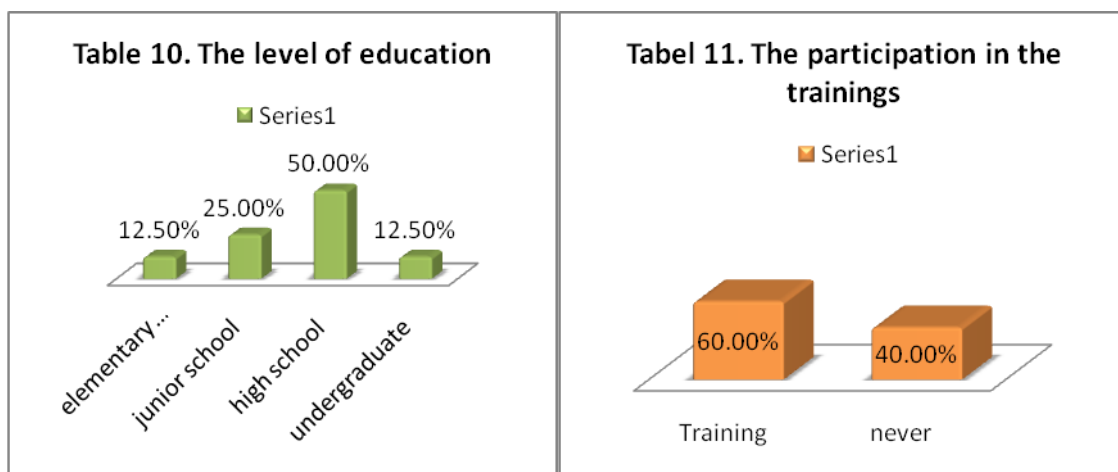
The recipe of the cracker dough was the major legacy given by parents to their children (77%). It suggested that the *tacit knowledge* in giving a flavors of different entrepreneurs towards their crackers that could differ one from the others. The process of *knowledge transfer* from the parents to their children in forming the *tacit knowledge* required a long process and blended into their daily lives.



Source: Data processed in 2013

Interesting things that can be seen from the table above is that 50% of the second generation who continued parents' business had dared to innovate, while the rest had not. The innovation that they did mostly related to the compositions of the dough-making (87%), it was done because the price of raw materials for the manufacture of the cracker dough was highly fluctuating, from the prices of soybean, onions, and flour from year to year. The increased price enforced the cracker entrepreneurs to create innovations in the spices of the dough recipe that did not change the taste with reduced price of production cost. On the other hand, innovations in the field of marketing were very still very low (13%). The existing second generation entrepreneurs of crackers businesses often used marketing networks that had already established by their parents. It was done because there had been trust among them.

These following tables would explain the characteristics of crackers entrepreneurs who dared to innovate from knowledge that has been inherited by their parents.



Source: Data processed in 2013

Entrepreneurs who dared to push the boundaries of knowledge production that had been owned mostly by high school graduates or above (62.5%) and also had frequently attended trainings (60%). This suggests that the *tacit knowledge* that had already good from the parents, which was completed with the *explicit knowledge* from the school or the trainers were able to make them to be motivated in doing their innovations when their binis conditions changed based on the consumers' demands.



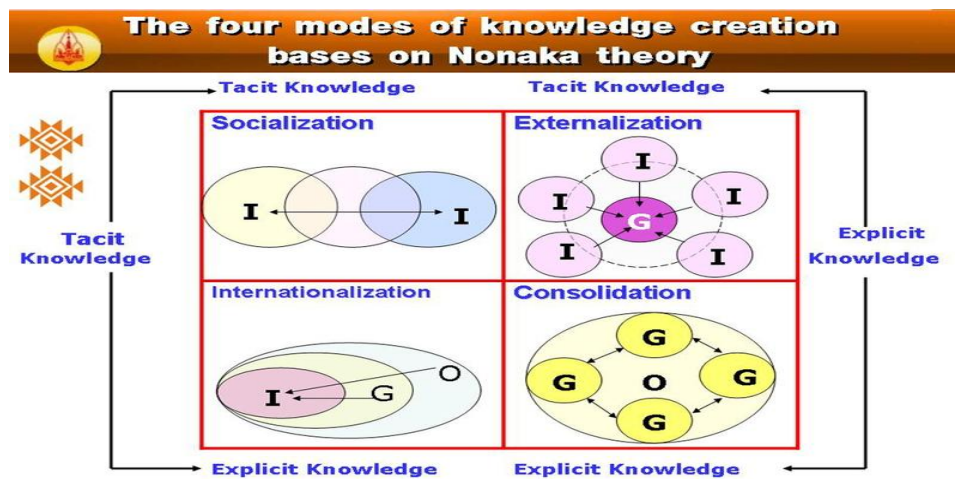
#### 4.2 Knowledge from Neighbors

In addition to gain knowledge from their parents hereditary, the cracker entrepreneurs in Tuntang also gained knowledge from their neighbors who had started those businesses before. The following table describes the knowledge that was learned from their neighbors. Based on data, the knowledge gained from neighbors was the ways of production (81%) and the process of making dough. This knowledge was obtained through the process of becoming employees of the previous business owners. When they were still working as the employees, they observed how to do the production, after that, they tried to practice it themselves at home. Some of the cracker entrepreneurs did not want to innovate their crackers. It can be seen from the table below. If it was compared with entrepreneurs who inherited the knowledge from their parents, they did more innovations in the production process. It happened because they had deeper knowledge because from their childhood, they had accustomed to participate in the cracker business.

#### 4.3 The Model of Knowledge Transfer

Based on the information of characteristics of the entrepreneurs and the potency of cracker developments in Tuntang above, the proposed model of *knowledge transfer* are as follows.

Figure 2 The model of knowledge transfer according to Nonaka Theory



Sources Nonaka (1997)

The model of *Knowledge transfer* proposed above was in accordance with the model of Nonaka Theory. It was done because in general, the entrepreneurs had two *knowledge*: *tacit knowledge* from their parents (the spices of the cracker dough) and *explicit knowledge* from the trainings followed. The model of Nonaka also included some cognitive skills, such as confidence, intuition, and *technical knowledge*, such as *knowhow*. This Nonaka's model was begun from 2 x 2 matrix as shown in the picture above, which consisted of 2 *tacit knowledge* and *explicit knowledge*. Each knowledge could move from one *knowledge* to the other *knowledge*. If it was done continuously, it would be a continuous learning, so it was expected that this process would be a spiral learning in which knowledge acquired was more and more profound. Nonaka divided knowledge transfer into 4 parts:

##### 1. Socialization

It occurs when a person transfers tacit knowledge to the others. In the process of knowledge transfer, there should be direct interaction between the source of knowledge and the recipient of knowledge. In this process, there is a sharing of experience among them. Therefore, the knowledge which is gotten from hereditary business is included in this model.

##### 2. Externalization

A process of making the knowledge transfer occur because of the changes of tacit knowledge into explicit knowledge. In this process, the interaction occurs between the individuals and the groups. In this process, the tacit knowledge owned by individuals should be changed in knowledge (knowledge) which can be easily understood by the individual groups (group), that it needs the process of analogy, the articulation in a procedure or a language that is easily understood from the existing tacit knowledge. It can be seen from entrepreneurs who did their businesses because of the bandwagons done by their

neighbors who had become cracker entrepreneurs before. Because they learned by working to the neighbors first. It indicates that the employers were able to make a production procedure that was easily understood by the workers from the *tacit knowledge* that had been owned. With the interaction between the individuals or groups, it indicated that there was *social knowledge* that developed between them. Tacit knowledge is able to drive the process of innovation if it can be distributed to others. To make the change process of *tacit knowledge* into *explicit knowledge*, that can be understood by other people, it takes an opened and mutual culture and also trust among one person with the others. The process of interaction among the individuals is an important factor to make knowledge not isolated (Stover, 2004). *Competitive advantage* will be obtained by a company if the individuals in that company are able to change *tacit knowledge* into *explicit knowledge* that can also be understood by others. Thus, the individuals within the company will learn continuously from the possessed *tacit knowledge* to create a new competitive edge for their companies in the future (Kikoski and Kikoski, 2004). A learning process in groups through cooperatives or Business Group was thought to be suitable for cracker entrepreneurs in Tuntang. It happened because the level of education of the cracker entrepreneurs in Tuntang were not too high, so if they learned together in groups to transfer their tacit knowledge today, they could help each other.

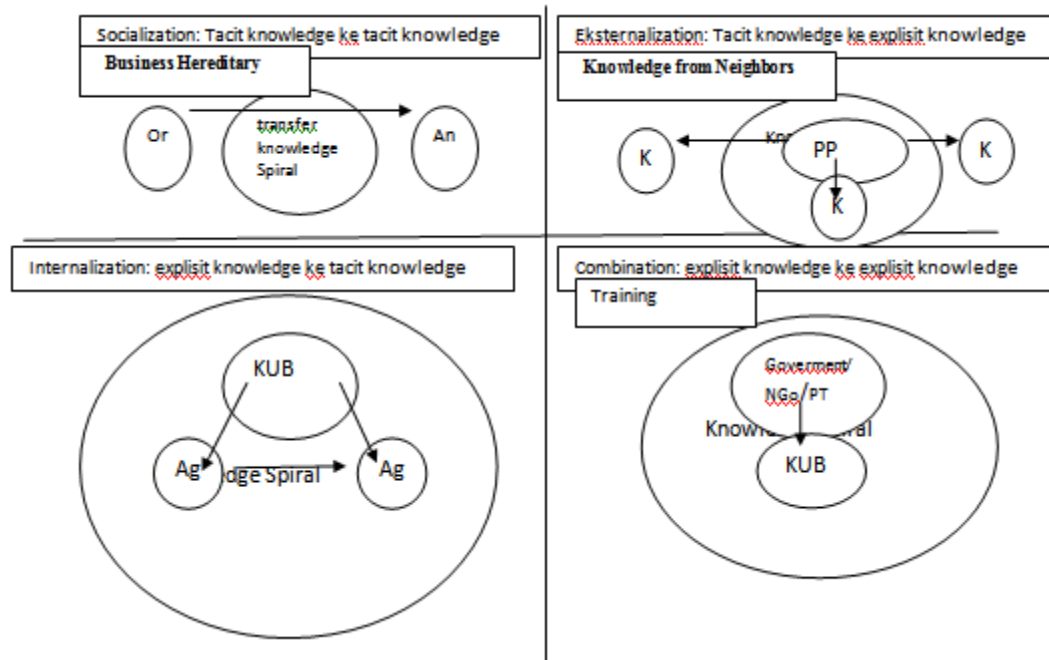
### 3. Combination

Combination occurs when a knowledge is transferred from *explicit knowledge* to *explicit knowledge*. In this combination process, the role of technology is very important in order to produce a clear documentation of *explicit knowledge*, that it can be applied quickly when there is an innovation process. In the process of this combination, it is also possible to carry out the collection towards the internal and external *knowledge* stored properly and dissemination of knowledge can also be done well. The interaction occurred is between the groups and the groups. This process can occur from trainings which are often followed by business groups that exist in the cracker business. The Role of Universities and the Department in conducting *knowledge transfer* can be done at this stage, because it will cause a transfer of explicit knowledge from KUB groups with group from related Departments and the Universities. The initiation process of the replacement of borax with STPP will be done through this stage.

### 4. Internalization

In this stage, there is a change of *transfer knowledge* from *explicit knowledge* into *tacit knowledge* which is performed by each individual. This process can occur if each individual can absorb and do continuously towards *explicit knowledge* possessed, so the learning process will emerge from the continuous simulation that is accumulated into an experience. The interaction which occurs between the organization / group to and the individuals. This process occurs when the cracker entrepreneurs apply the knowledge which is gotten from continuous trainings in business process that has been done. By learning from the implementation of those experiences, the training materials will be *tacit knowledge* for each individual. This process can be seen later on which individual entrepreneur who can absorb the training materials well and succeed in applying them, they will have the ability to innovate better products. Problems encountered in this stage is the lack of motivation of the entrepreneurs to practice it by themselves in absorbing knowledge acquired during the trainings. It is thought to occur because of the culture of "nrimo" among the Javanese. This culture makes people reluctant to get out of the comfort zone which have been owned over the years. Based on the model of SECI (Socialization, Ekternalization, Combination, Internalization) from Nonaka's theory above there are several things you need to be changed by adjusting the conditions of the cracker entrepreneurs in Tuntang. The model of *knowledge transfer* which is in accordance with the cracker entrepreneurs is as follows:

Figure 3. The Model of Knowledge Transfer of Cracker Entrepreneurs in Tuntang



### V. DESCRIPTION:

Or: Parents : An: Children : PP: The owners of the Company : K: Employees : PT/ Universities : KUB: Business Groups : Ag: The members of Business Groups Based on the picture above, SECI model of Nonaka has been updated in accordance with the conditions of SMEs of cracker entrepreneurs. Several stages in Nonaka has been adapted to the existing knowledge transfer processes, such as:

- [1] Socialization: This stage further described the knowledge process that occurred when this business was the hereditary business, in which science to conduct business from their parents was absorbed by their children in the long process of observation through their daily lives. Through the stages of this observation, a process that involved emotions, values, beliefs and intuition that emerged from experiences and observations in the long term appeared. Through the process in this stage, it would be different skills (Nonaka and Takeuchi, 1995).
- [2] Eksternalization: This stage happens to entrepreneurs who started their businesses because of the bandwagon of their neighbors. At first, they asked about how the production process or the way to do it to their neighbors, then they absorbed the knowledge from the owner of the company (their neighbors). This stage would transform tacit knowledge into explicit knowledge, which was easier to understand because there was a structured procedure. In this process, the owner of the company was able to make cracker production procedures that were easily understood by their employees. After they had understood the production process, there were some employees who started to open their own businesses. Cultural characteristic that is more willing to accept the influence from outside will better be obtained in the eastern culture, where people are more opened to others (Andriessen and Broom, 2007). In this process, it will encourage business owners to always think creatively in creating new ideas of production if they do not want many people to imitate their efforts.
- [3] Combination: This stage occurs when the transfer occurs between explicit knowledge to explicit knowledge. In this stage, it happened in the process of business training that had been done by the Department or NGOs and Universities to the cracker entrepreneurs. Usually, the training process is not an individual but through KUB. The selection of KUB is considered appropriate that such trainings (marketing, the use of production assistance tools) can be well documented by KUB and this knowledge can be stored for the other members. With relatively low education level, the knowledge transfer will also be easier if it is done jointly by business groups.
- [4] Internalization: In this stage, KUB is expected to be able to encourage the members of the group in an effort to make the learning process itself continuously in order to apply the knowledge acquired from each training. Through a process of continuous learning, it is expected that the members will be able to learn from any mistakes that have been made and eventually explicit knowledge may be changed into

a *tacit knowledge*. At this stage, it needs a strong process of motivating themselves among the entrepreneurs. This last process is more to *individual learning* compared to *organizational learning*, while the three previous stages are included to organizational learning (Bratianu, 2000).

If the model of SECI is implemented continuously, it will establish a greater knowledge spiral. It will result in the continuous increase of innovation processes. If the innovation can be created as a culture, so the *competitive advantage* among the entrepreneurs will be formed automatically. Ultimately, it will result in the increased revenues that will be earned by the cracker entrepreneurs.

## VI. CONCLUSION

Nonaka's model of *knowledge transfer* can reflect the approach of Javanese culture that had been owned by the cracker entrepreneurs in Tuntang who tended to like working in mutual cooperations and keeping in together. It would be able to accelerate *tacit knowledge* transformed into *explicit knowledge*. Besides that, Javanese people also have a sense of "ewuh pekwuh" (a kind of hesitation for the sake of politeness with their neighbors), so that the information from the *tacit knowledge* that has been owned could also be shared to others by using good communication approaches. However, there are also some disadvantages that are owned by Javanese people, especially at the stage of Internalization. At this stage, they need to be highly motivated, so that the entrepreneurs are willing to continually apply knowledge from any trainings received to their businesses. Javanese people often feel that they are already comfortable with their current state/situation (*nrimo*). If they do not do their own developments of business innovations, they will gradually be shifted the business world, because of the large number of newcomers who join the competition. It makes business competition to be tougher. It becomes a critique for Nonaka's model, because it is very attached to certain cultural elements, and if it will be applied to organization or other businesses, it may require several adjustments (Hong et al., 2006).

## ACKNOWLEDGEMENTS

we extend our thanks to the Higher Education and Satya Wacana Christian University (SWCU) who already provide funding assistance in conducting this research. We wish to thank crackers entrepreneur who are willing to provide the data to aid researchers in making this article

## REFERENCES

- [1] Bratianu, C. 2009. "A Critical Analysis of Nonaka Model of Knowledge Dynamics" *Electronic Journal of Knowledge Management* Volume 8 Issue 2 pp 193-200
- [2] Andriessen D, & Broom M. 2007. "East is East and West is West and(n)ever its Intellectual Capital shall Meet". *Journal of Intellectual Capital* Vol 8 ,No 4.
- [3] Danang, Hidayat. 2010. The Role of Research Research & Development in Improving Quality Learning and Vocational Education Technology. Taken from [www.google.com](http://www.google.com)
- [4] De Long, D.W. (2000). Diagnosing Cultural Barriers to Knowledge Management. *Academy of Management Executive*, 14 (4), 113-27.
- [5] Dick, B. (2002). *Action research: Action and research* Accessed on Feb 3, 2007
- [6] Emory, C. William and Donald R.Cooper,1991. Business Research Methods.*Fourth Edition. Richard D. Irwin, Inc*
- [7] Garavan, T.,Ocinneide,B., and Fleming, P. (1997).Entrepreneurship and Business Start-ups in Ireland, *Oak Tree Press*
- [8] Hong, J., Easterby-Smith, M. and Snell, R. (2006), 'Transferring organizational learning systems to Japanese subsidiaries in China', *Journal of Management Studies*, vol. 43 no.5, pp.1027-1058.
- [9] Kikoski, C.K. and Kikoski, J.F. (2004), *The Inquiring Organization: Tacit Knowledge, Conversation, and Knowledge Creation Skills for 21st-Century Organizations*, Praeger, Westport, CT and London.
- [10] Lonescu Dina.LEED Programme OECD (1999). "Women Entrepreneurship: Exchanging Experiences Between OECD and Transition Economy Countries. *Brijuni Conference October 1999*.
- [11] Lu, Shu-Ling dan Sexton, Martin. (2006) Innovation in Small Construction Knowledge-Intensive Profession Service Firm: A Case Study of an Architectural Practice. *Construction Management and Economics*. Vol 24, p 1269-1282
- [12] Mahastanti. L dan Nugrahanti, Yeterina (2010). Entrepreneur role in thresholded the business (ecase studies crackers Tuntang areas of Semarang District). *Jurnal Siasat Bisnis Vol 14 :1-100*.
- [13] McNiff, (2002) *Action research for professional development*. Accessed online Feb 2, 2007
- [14] Nonaka (1997). Organization knowledge Creation. At the Knowledge Advantage Conference held November 11-12,
- [15] Nonaka I Takeuchi.,H 1995. "*The Knowledge Creating CompanyHow Japanese Company Create the Dinamics Of Innovation*". Oxford University Press, Oxford
- [16] O'Brien, R. (2001). *An overview of the methodological approach of action research* In Roberto Richardson (Ed.), *Theory and Practice of Action Research*. João Pessoa, Brazil: Universidade Federal da Paraíba. (English version) Accessed online on Feb. 2, 2007
- [17] O' Connor Valerie, Hamauda Angela, Henry Colette,Johsonston (2003)."*Co-entrepreneurial Venture:a study of mix gender founders of ICT companies in Ireland.(www.google.com)*.
- [18] Polanyi, M. (1962). *Personnal Knowledge: Towards a Post Critical Philosophy*, Rouldege and Kegan Paul. London.
- [19] Polanyi, M. (1967). *The Tacit Dimension*, Rouldege and Kegan Paul. London.
- [20] Robeiro-Sorano, D. And Urbano D. (2009). Overview of Collaborative Entrepreneurship ; An Intregeted Approach between Business Decissions and Negotiations. *Group Decission and negotiations*, 18 pp.419-430

- [21] Sabestova J, Rylkova Z. (2011). Competencies and Innovation Within Learning Organization. *Economic and management* vol 16 pp 954-960.
- [22] Sexton, M.G and Barret (2003). A Literature Synthesis of innovation in small construction firm.
- [23] Sexton, M.G and Barret. (2003). Appropriate Innovation in Small Costruction Firm.
- [24] Stover, M. (2004), "Making tacit knowledge explicit", *Reference Services Review*, Vol. 32 No. 2, pp. 164-73
- [25] Swan,J.,Scarbrouht,H.,And Robertson,M.(2002). The Contruction of Communitiesof Practice in The Management of Innovation. *Management learning*. 33.477-97
- [26] Wahab A,S.,Rose R, Uli J,Abdullah. (2009). A Review on yhe Technology Transfer Model : Knowledge Based on Organizational Learning Model on Technology Transfer. *Europian Journal of Social Sciences* vol 10 Nov 4,pp 550-562.
- [27] Timmons, J.A. (1994). "New Venture Creation: *Entrepreneurship for the 21 Century*, Irwin.