

A Study of Intellectual Capital and Its Supply Chain Strategy for Business Performance in Small Medium Enterprise (SMEs)

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Abstract— Intellectual capital is one of important activity for organizations which want to be efficient on the market and obtain a sustainable competitive advantage. However, most company only measure and create company value based on tangible assets rather than intangible assets. In conjunction with the present issue, this investigation focuses on intangible assets (intellectual capital) in Small Medium Enterprise (SMEs) and its supply chain strategy for business performance. This study is designed using a qualitative approach. A total of 30 entrepreneurs from the three largest Batik industries in Central Java, consist of Lasem-Rembang, Pekalongan and Laweyan Solo has participated in this study. The data collection technique is using observation, interview and some relevant reference such as reports, books and journals. The results of the analysis showed that the intangible assets (intellectual capital) are a strategic way to improve the performance of SMEs. Also, this study identified that the intellectual capital consists of human capital, spiritual capital, organizational capital, consumer capital and social capital. In conclusion, as intangible assets (intellectual capital) is a knowledge-based view that can create value and increase organizational performance. Also, the concept of intellectual capital is relatively new, especially for SMEs, so the subjectivity of perception given is still very high.

Keywords— Intangible and tangible assets, intellectual capital, supply chain strategy, organizational performance

1. Introduction

In the past decade, the organizations have been measuring and creating its value based on a tangible asset (physical capital) rather than intangible assets, namely knowledge or intellectual capital [1]. Intellectual Capital is defined as the skills, knowledge, and technologies that are used to create a competitive advantage for the organization [2]. Today, the new businesses have changed from traditional to a knowledge-based economy

(intellectual capital). In contrast, cash, buildings and equipment's do not use as a benchmark to differentiate the business performance in term of competitive advantage [3]. Intellectual capital is one technique that can be used to measure the intangible assets, and it's a source of competitive advantage of a company [4]-[5]. Also, intellectual capital is a primary resource as a competitive advantage for SMEs compared to companies with large-scale.

Further, a study was conducted by [6]-[7], stated that the tangible assets owned by SMEs are smaller compared to large-scale companies. Also, as intangible assets, intellectual capital can create a competitive advantage to the organization's and increase business performance. Also, the intangible asset can create the added value for a company to achieve a competitive advantage [8]. Sveiby identified that three components could develop intellectual capital such as human capital, structure capital and relational capital [9]. Also, Khalique et al. (2013) stated that the primary function of intellectual capital is to create the value-added of products and services through proactive management. Also, intellectual capital has positively affected the performance of the organization [1].

The intellectual capital is a valuable resource. It is difficult to imitate and irreplaceable to increase competitive advantage and improve company performance [10]. Then in [11], Intellectual Capital is a useful knowledge package. It consists of the main elements of the company, which include human, structural and relational capitals. Also, it is considered could increase the company's business performance and keep the competition stability with other companies [12].

Various studies mostly have been conducted to investigate the intellectual capital of a big company. However, a study of intellectual capital

for SMEs is still relatively limited. Of these, further study needs to develop intellectual capital, which is theoretically or empirically [5]. In conjunction with the lack of previous studies and the significance of intellectual capital as a strategic way to enhance the competitive advantage for Small Medium Enterprise (SMEs), this study is written to investigate the intangible assets (intellectual capital) in Small Medium Enterprise (SMEs) and its supply chain strategy for business performance.

2. Literature Review

In the early stage of development, intellectual capital is designed as a framework for analyzing the contribution of the value of the intangible asset in an organization [2]. It is an intangible asset that can create a competitive advantage and will lead to the organization's performance. Intellectual capital because the resource is hard to duplicate even can be considered as a strategic resource [6]-[7]. Intellectual capital consists of three indicators: Human capital (knowledge and skills), structural capital (database and organizational structure) and customer capital (customer and supplier relationships) [3].

Human capital is generally recognized as a critical component of intellectual capital on the basis of competence, attitude and intellectual skills [13]-[15]. The new theories of intellectual capital, including strategic perspective, enables the identification and evaluation of core competencies that help to achieve continuous competitive advantage [16]. The trained and educated workers will make processes and tasks more efficient, as well as facilitating their formalization. Values and attitudes of human resources affect the culture of the organization. The training facilitates the creation of organizational knowledge and technological development within the company. Even though the employees are the one who has the knowledge, but the company could successfully institutionalize their knowledge in the company culture and work routines.

Further, in ref [17] found that the relationship among company would be led to a structural capital. The Processes and company systems enable the development and using structural capital to improve the company, but they do not create new knowledge. The people who are integrated into the company create new knowledge [5]. Human capital

will be the "spirit" on how the company is managed by creating systems, procedures, mechanisms, structures, organizational processes and organizational culture and be part of the structural capital [18]. It indicates that the structural capital is the supporting infrastructure for human capital and the existence of structural capital.

Numerous studies about intellectual capital have been examined the effect of human capital toward the structural capital. In [19], human capital has positively affected structural capita. Further, in [20]-[22] identified that relational capital is generally can be made by the company with external parties, such as customers, suppliers, partners, and regulators [23]-[24]. In other words, knowledge has a significant relationship with external parties on the company's organizational life [25].

Human capital as the fundamental basis of intellectual capital has an important role in developing relationships with interested parties, such as customers, suppliers, competitors and governments. Knowledge, skills, knowledge, experience becomes the basis for creating a good relationship. Various research shows that human capital significantly influences the relational capital. Those researches are [19]-[21]. Structural capital is a non-human knowledge in the company such as hardware, software, database, organizational structure, patents, trademarks, and everything about the capabilities of organizations that support employee productivity [17]. It is also related to the effort in establishing the mechanism and organizational structure that can assist employees in optimizing their intellectual and overall business performance. In the structural capital, we should know how to build relationships with the parties interested in the company, such as customers, suppliers, competitors and government. Many researches evaluate the effects of the structural capital towards relational capital. Some of them can be seen in [5], [13], [20].

Intellectual Capital is a precious resource, difficult to imitate and irreplaceable that produce a long-lasting competitive advantage and improve company performance [10]. The Intellectual Capital (IC), according to Stewart (1997), is a packaged useful knowledge [11]. Human capital, as part of the intellectual capital, has an important role in the making of competitive advantage, because in the human capital there are the knowledge, skills and experience of employees" [26]. At the

organizational level, this capital plays an important role in strategic planning for the creation of competitive advantage. Hsu and Fang (2008) explain that the high-quality employees are the most important competitive strategy in the context of the knowledge economy [27].

These people do not always have the conventional skills, but they have the creative ability to the generation of new knowledge, new processes, and new system. Competitive advantage is better achieved by companies that succeeded in mobilizing intangible assets in the form of knowledge, technology skills, experience, and strategic capabilities in creating new processes and product or services offerings [15]. A company retains and trains the best human resources are the most important competitive strategy in the context of the knowledge economy [27]. Many types of research that examine the effect of human capital on competitive advantages, such as in ref [27]. When knowledge is codified into routines, it makes tacit knowledge activity rules and procedures change into a system by using structural capital in intellectual capital. What makes the tacit knowledge that is systematic and open to the use, application and diffusion structural capital [28].

Therefore, following is the cycle; knowledge affect the ability to maintain a higher level of performance, the performance is an indicator of competitive advantage in strategic management literature and knowledge is embedded into the organization through structural capital. This discussion concludes that structural capital affects the achievement of competitive advantage [29]. Lopez et al. (2006) conclude that the structure is the ability needed by the organization. Although it is difficult to replicate and to transfer, the duration can be varied and prone to substitution, so that it can be a competitive source of parity [30]. Many pieces of research examined the effect of structural capital on competitive advantage, for detailed can be seen in [29]-[31].

In particular; relational capital allows the relationship between diverse groups and organizations; it also explains the reasons to keep the communication between and in the organization with various stakeholders [28]. The power of the external parties is having a role in influencing the position mapping of the company, including determining the authority [25]. Thus, building good relationships with the external environment is greatly needed to do because it can determine the

competitive advantage of companies. The creation and maintenance of effective interaction, a good relationship with customers, suppliers, distributors, stakeholders, partners, investors and the government will enhance the reputation, credibility, customer satisfaction, government and financial support, brand and customer awareness/organization supplier loyalty. It will encourage the company one step ahead on its competitors [29].

Human capital is important because it is a source of innovation and renewal strategy [14]. The essence of human capital is the depth of the members' intelligence of the organization, and if that intelligence is combined, it can motivate employees to achieve organizationally or the company goals that will eventually impact on the company's performance. Hence the impact of human capital to improve performance and achieve competitive advantage for organizations is also supported by a lot of research that shows the influence of human capital, either directly or indirectly to the achievement of performance and organization sustainable competitive advantage [32]-[33].

If the systems and procedures which an organization possessed to carry out activities are good, then the intellectual capital will be able to reach the full potential, so the performance of the organization will also be a maximum. If an organization can manage the knowledge of companies and develop the structural capital, for example, creating a good routine, good organizational culture, then the competitive advantage will be achieved. Those advantages relatively will result in higher employee performance [34].

An organization with strong structural capital will support the efforts of individuals to try new things, to learn. It is what enables the company to create new opportunities, creation and will spur innovation. An organization with intellectual capital but without structural capital is human capital. The research that evaluates the effects of structural capital and performance explains that structural capital gives good impact either directly or indirectly to the organization's performance [5], [14], [20].

Relational capital by [35] is a function of longevity: This capital will give the excess value to the company when it was able to create a relationship 'in the long term' with parties outside

the company. When a relationship with one of the actors in the external environment is difficult to maintain, the company will incur a loss. The higher the level of relational capital, it will improve the process of planning, problem-solving, production and service efficiency. It will reduce the cost of the organization. This capital can also be instrumental in improving customer profits by helping the improvement of the quality, reliability, and flexibility, creating value for customers, through production and innovation delivery process service.

In a study is explaining that a resource-based view is important, because it can be used as a conceptual guide for business organizations to improve their differential advantage position. Competitive advantage is mentioned as an advantage above the average competitor [36]. The superior performance and advantages of production resources reflect the competitive advantage [37]. The competitive advantage is the ability to stay ahead of the trend or potential competition; so that superior performance is achieved through competitive advantage will ensure market leadership. Many types of research examine the effect of competitive advantage to the organization's performance can be seen in [38]-[39]. The results show that the competitive advantage is having a significant effect on performance.

3. Methodology

This research was carried out in three biggest clusters of batik industry in Central Java: Pekalongan, Laweyan-Solo and Lasem-Rembang. The study was conducted for three months (September - November 2018) by visiting key informants directly to explore deeply about the intangible assets and capabilities of SMEs. Thirty entrepreneurs became key informants to get the actual results. The key informants chosen are those who understand and know in detail about the resources owned by the company, especially those resources that have a competitive advantage. The method in this study was qualitative. In qualitative data collection, the technique used is an in-depth interview and FGD, to avoid bias in the formulation of research variables, the research component can be collected from various stakeholders such as owner and manager and based on a theoretical framework which exists.

4. Results

The analysis found that there are 57% were male, and 43% were female. Most of the respondent education was senior high school (53%). Meanwhile, most respondents (50%) have experienced between 13 and 18 years. Labour on Batik industry usually consists of permanent workers and contract labour. Majority employers have a workforce of between 11 - 20 employees (45%). Table 1 describes the demographic profile of the respondents.

Table 1. Demographic Profile of The Respondents

Characteristics	Frequency (N = 30)	Percentage (%)
Gender		
Male	17	57
Female	13	43
Education		
Elementary School	2	7
Secondary School	6	20
High School	16	53
Diploma	2	7
Bsc	4	13
Manpower		
≤ 10	8	26
11 – 20	13	45
21 – 30	5	17
31 – 40	2	5
Experience		
8 - 13 years	10	33
> 13 - 18 years	15	50
> 18 years	5	17

SME Batik resources consist of two, tangible and intangible resources. SMEs Batik as traditional industries, tangible resources do not become a strategic resource that can enhance the competitive advantage. This is because the resources intangible owned SMEs Batik just a *canting*, *cap*, cloth and dye as a material in the manufacture of Batik, which does not require sophisticated technology. While the intangible resources, those resources turned out to be recognized by SME owners. Even considered as a resource that can enhance the

competitive advantage. In the knowledge-based era, knowledge-based intangible resources become strategic resources that can improve the performance of SMEs.

By using the result of interviews, this study recognized that human capital is an important component. In the batik industry, human is the subject of the production process. Without human involvement, this industry will not run especially in the classification of batik tulis and batik cap. According to SME owners, human capital plays a very important role. Without the presence of this capital, the company will stop operating. This contribution shows that human capital is “spirit” about how the company is managed [40]. This is because knowledge, abilities and experience are in humans. When asked what are values that need to exist in human capital, here is the explanation.

Ethical Behavior - ethics of behaviour is a personal reflection of a relationship in a good relationship with leaders, colleagues or with outsiders. Ethics is needed because of the distance command on SMEs Batik is not too much between managers and staff. An attitude of mutual respect, being able to position ourselves well is one of the behaviours in promoting ethics, considering that sometimes batik employees have a much older age than their leaders.

Motivation - Motivation is the most important factor in managing human capital, considering that Batik is a traditional industry that requires “patience and seriousness” in progress. High motivation is the driving factor for an employee to go ahead. It is following the results of interviews with respondents 27 “*Sing penting motivasi mbak, yen wis ora duwe motivasi wis mending mandeg dolanan Batik. Angel mbak, duweno pendidikan duwur yen ora duwe motivasi duwur wis percuma mesti menggko bubar tengah dalan yen ora metu golek gawean liyo*” (Responden_27, 2018).

The important thing is motivation, if you have no motivation, it’s better to quit Batik. Higher education if it does not have the motivation certainly will be disbanded in the middle of the road or out looking for another job).

When asked by respondents / UKM Batik owners about how to increase the motivation of batik employees/craftsmen, in general, three strategies can be done, namely training for craftsmen, appropriate salary/wages and family relationships built between craftsmen and owners. This training is usually carried out internally, which

is usually done by sharing experiences and being informal. While for external training which a work program is carried out by the Office of Cooperatives and MSMEs, and often the owners will send workers to gain experience, such as training in selling online, processing waste for increasing work performance.

The owner provides salaries/wages according to the minimum wage standard eligibility. The results of the owner’s interview usually provide a range of IDR. 25,000 -100,000/day depending on the level of work and paid every week. While family relations are the main factor in shaping high motivation, the flexibility of organization makes workers/craftsmen comfortable to stay opted in to work, due to their unexpected needs do not have to enter the appropriate hours of work. Workers can enter regardless of hours and still get a good salary with a percentage or in whole, in addition to the ease of borrowing money to the owner is also considered as one of the factors that strong family relationships. This strategy turned out to be almost equal to that done for the owners/managers of SMEs in Mexico, that motivation becomes an important part of workers, especially in developing human capital.

Professional Expertise - Professional skills needed in the Batik industry, given Batik is a traditional industry that requires specific expertise. Professional expertise makes Batik SMEs can survive in the long term. The creation of successful intellectual capital is mainly based on competence, one of which is professional expertise.

Knowledge - knowledge related to Batik is very much needed, meaning that when workers/craftsmen know everything about the process of making Batik it will make it easier for leaders to direct.

Creativity - In the Batik, industry creativity is needed. Given that batik designs are easily imitated, or their terms are “*ditembak*” so that when another Batik industry imitates a design, creativity is needed so that the batik “*ditembak*” is slightly different, for example in terms of colouring, or the design of Batik is slightly different.

In addition to human capital, other intangible resources are **social relations / social capital**. On Batik SMEs, social relationship reflected by the network. There are two network schemes found in UKM Batik, collaboration with **competitors and other parties**. On competitor network formed is usually in the form of clusters of areas, such as

Forum Pengembangan Kampoeng Batik Laweyan, Cluster Kampung Batik Ds. Babagan Lasem Rembang, Kampung Batik Pesindon Pekalongan etc. The formation of this network aims to develop Batik in each region. Recognized by the respondents currently very difficult to find skilled labour in Batik. *“sekarang susah cari anak muda yang bisa membetik, jadi kita perlu kerjasama dengan sesama pemilik untuk membentuk forum pengembangan Batik. Jadi yang kita jual tidak hanya batik tapi juga wisatanya”* (Responden_8) (now hard to find young people who can make Batik, so we need cooperation with other owners to create a forum for the development of Batik. So, we sell not only Batik but also tourism).

Also, the development of Batik, it is currently being activated is the establishment of a tourist village. The concept of the Batik industry as one tourist destination into one that is developed. When later Batik product is touched by “a pleasant experience” will increase the value of Batik itself, which in turn will increase sales. “Banyak turis asing yang datang biasanya dari Belanda yang datang ke sini, selain melihat pembuatan batik, mereka juga istilahnya “klangenan” dengan batik yang pada akhirnya kemudian membeli. Bahkan karena membeli tidak banyak kemudian dilanjut dengan membeli secara online” (Responden_11. (Many foreign tourists who usually come from the Netherlands who came here, in addition to seeing the batik making, they also call it “klangenan” with Batik, which in turn then bought. Because buying is not much, then continued to buy online).

Networking with outside parties can be done with **the government** - as an institution that handles SMEs through cooperative services and MSMEs - also can be with **banks** - through CSR activities. In this network, both the government and banking institutions in addition to helping also sometimes provide capital assistance to improve the performance of SMEs. KUBE Sekar Mulyo who received support from BNI to establish a gallery in front of the village of Babagan. There was also training with natural colouring which was initiated by the Department of Cooperatives and SMEs. Collaboration through the utilization of networks could be improving the performance of SMEs also fosters the spirit of owners in managing the business.

In addition to human capital and social capital, the customer is also a factor to be considered to improve performance. Based on interviews with

respondents, those customers are the key to the success of the company. No matter how good the product is but does not attract the buyer, the company is considered a failure. Collaboration with customers is usually a long-term relationship. Trust is a keyword. Through this trust will create loyal customers who will improve organizational performance.

Spiritual capital is also an organizational performance factor. In various interviews, this capital provided the peace and submission of SME owners when they were in trouble. Spiritual capital includes values such as morale, faith, honesty, ethics, desire and motivation, commitment, self-esteem, enthusiasm, and sincerity. Spiritual capital is essential in an individual as well as an organization. It could influence the way an entity or company is managed, making sure business operations run following law and standards, being truthful and honest in financial matters, etc. of which would eventually improve corporate performance. Based on an interview, there is some spiritual activity that is practised by the owners of SMEs, including the Dhuha prayer, pray together before starting work, study, pilgrimage and fasting sunna.

Organizational capital is all non-human knowledge in the company such as hardware, software, database, organizational structure, patents, trademarks, and everything about organizational capabilities that support employee productivity. Organizational capital is also associated with efforts to develop a mechanism and organizational structure that can assist employees in optimizing the performance of their intellectual and overall business performance. Organizational capital can take the form of corporate culture, cooperation, internal communication, and the use of technology.

Culture - Existing organizational culture batik SMEs is a largely informal shape, though the culture is well understood by employees/craftsmen. An organizational culture that is built on SMEs Batik is a supportive culture that emphasizes mutual help and support among members of the organization.

Cooperation - in the process of batik production needed to support cooperation among the craftsmen, when one of the phases is not done then the production process will be halted. Therefore, it takes empathy and willingness to respect others.

Communication - built-in Batik SMEs is usually informal, considering the distance between the command lines is not too wide. But sometimes miss-communication occurs it is due to their differences in an age much distance between the owners/managers of SMEs Batik with craftsmen so that there is a lot of owners/managers of SMEs are “ngemong” of craftsmen.

5. Discussions

The result shows that SMEs of Batik industry in Central Java has an intangible asset which can give rise to advance competitive by the presence of intellectual capital factor. In this factor, that forms intellectual capital in SMEs. This finding in line with Knowledge-Based. The intellectual capital as intangible capital can give rise to advance competitive, which will lead to organizational performance because such resource is a resource that is difficult to be imitated. Moreover, it can be considered a strategic resource [6]-[7].

Human capital on Batik SMEs becomes the spirit on how the company is managed by creating systems, procedure, mechanism, structure and organization process, even organizational culture which is part of organizational capital [40]. It shows that organizational capital is supporting infrastructure for human capital; in other words, the existence of organizational capital makes the human capital develops. Social capital generally identified as a relationship that can be established by the company with external parties [23]-[24]. The knowledge embedded in Human capital plays an essential role in building a connection with social capital. Knowledge, skill, knowledge, and experience become the basis for creating a good relationship.

Human capital as a part of intellectual capital plays an important role in creating competitive advance because human capital contains knowledge, skill and employees' experience". In the organization level, this capital plays an important role in strategic planning during the process of creating competitive advance. Organizational capital can also give rise to competitive advance. Lopez et al. (2006) concluded that structure is an ability required by the organization, and even though it is difficult to imitate and to transfer, the duration may be varied and prone to substitution so that it can be competitive parity source [30]. Power owned by the

parties in the external environment of the company plays a role in influencing the mapping of the company's position, including in determining its power [25]. Therefore, the relationship with external parties must be established well by the company as it can determine the company's competitive advance. Creation and maintenance of effective interaction, a good relationship with the customer, supplier, distributor, stakeholder, partner, investor and government will improve reputation, credibility, customers' satisfaction, government and financial support, brand and customer awareness/loyalty of supplier organization. It will trigger the company to be one step ahead of its competitors [29].

The essence of human capital is the depth of organization members' intelligence, and if the intelligence is combined, it can motivate the employee to reach the goal of organization or company which will eventually give an impact to the company's performance [40]. The importance of human capital influence in improving performance and reaching advance competitive for the organization is supported by many research results that show the influence of human capital, either directly or indirectly, to performance achievement and advance competitive sustainably in the organization. If the system and procedure owned by a certain organization to run activity are good, intellectual capital will be able to reach its fullest potency that makes the organization performance reach the maximum result. If a certain organization can codify the company's knowledge and develop organizational capital, for example, by creating good routineness and good organizational culture, advance competitive will be achieved. The advance will relatively result in better employees' performance [40].

Customer capital is a function of *longevity*: this capital will give added value to the company when it can create 'long term' relationship with the external party [35]. High level of *customer capital* will increase planning process, problem-solving, production and service efficiency. It can reduce organizational cost. This capital is also able to play a role in increasing benefit for the customer through its assistance in improving quality, reliability, and flexibility, creating value for the customer, through production and service in the process of innovation delivery.

6. Conclusions

For Small and Medium Enterprises, intellectual capital plays a crucial role in developing the competitive advantage of Batik SMEs. As an intangible asset, intellectual capital is a valuable, inimitable and non-substitutable resource. Thus, the SMEs emphasized more to human capital because human capital is essential to organizational management. Human capital is the key to existing resources. In conclusion, as intangible assets (intellectual capital) is a knowledge-based view that can create value and increase organizational performance. Also, the concept of intellectual capital is relatively new, especially for SMEs, so the subjectivity of perception given is still very high.

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