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CONTENTS

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Intellectual Capital, Business Performance, and Competitive Advantage: An Empirical Study for the Pharmaceutical Companies

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Abstract

The purpose of this research is to formulate a study of the influence of intellectual capital on Business Performance and Competitive Advantage of the pharmaceutical industry in East Java. The research method used a quantitative approach, and using the techniques of data collection by survey method with the distribution of questionnaires, in depth interviews, documentation and observation. These results indicate that the hypothesis is accepted and supported by the evidence of empirical data are human capital affects on structural capital, relational capital, and competitive advantage. Structural capital affects on relational capital and competitive advantage. Relational capital affects on business performance and business performance affects on competitive advantage. Meanwhile the other result form this research are human capital not affects on business performance and structural capital not affects on business performance.

Keywords: *intellectual capital; business performance, competitive advantage.*

1. Introduction

Intellectual capital (IC) is crucial for pharmaceutical companies because its classification as a high IC intensive (Woodcock & Whiting, 2009) (Hermawan & Mardiyanti, 2016). Pharmaceutical companies require the management of intellectual capital because they are knowledge-based and utilizing massive number of research. In addition, pharmaceutical companies conduct many innovations, knowledgeable activities, and interactions between people and technology, and they also depend on ICs as renewal sources (Bharathi Kamath, 2008). Intellectual capital is proven to have an influence on company performance, competitiveness and prosperity (Nick Bontis, Chua, Keow, Richardson, & Richardson, 2000) (Y. S. Chen, 2008).

However, the results of a study (Hermawan, Ekonomi, & Sidoarjo, 2013) stated that managers of pharmaceutical companies in Indonesia have lack of understanding and take less advantages from intellectual capital as intangible assets of companies. Consequently, Indonesian pharmaceutical companies cannot compete in exporting markets, especially in South-East Asia (SEA) (Sampurno, 2007) even though the opportunity is huge because of the single market creation of pharmaceutical industry in South-East Asia. This situation should be taken as an opportunity by pharmaceutical industry in Indonesia to develop intellectual capital either individually or integrated thus can improve the business performance and competitive advantage.

By putting concerns in the importance of intellectual capital for pharmaceutical companies, then it is necessary to research the influence of intellectual capital on business performance and competitive advantages. This study was distinct from previous article (Cabrita & Bontis, 2008) examining only the influence of intellectual capital on business performance in the Portuguese banking industry without considering competitive advantage. This study also differs from (Hermawan, Ekonomi, Muhammadiyah, & Herlina, 2013) identifying and connecting intellectual capital with firm performance using qualitative approach.

2. Literature Review

The basic and appropriate theory for this research is the resource based theory (Wernerfelt, 1984). This is because intellectual capital is one of intangible assets that, if developed, would become an instrument or mean for the company to improve its business performance and competitiveness. As an intangible asset, intellectual capital consists of three components namely capitals of humans, structures, and relations-customers. All of these three intellectual capitals, individually or in synergy, can improve the performance and competitiveness of the company (Hermawan, 2015).

This is possible because if the company has employees with high capabilities, good competencies, and well satisfaction, then the company is well-governed with established structure, clear processes, and decent organizational culture. Furthermore, with marketing capabilities, satisfied customers, propitious market intensity, and great community relationships, these also can improve the performance of businesses.

The result from previous study (Sharabati, Jawad, & Bontis, 2010) depicted that intellectual capital variables significantly and positively correlated with business performance. They contended that relational capital had the greatest significant value compared to other variables of human and structural capitals. Other results described that there was a positive relationship between intellectual capital and enterprise performance (M. Chen, 2004). Apart from the positive and significant impact on business performance, intellectual capital also has a positive and significant impact on the competitiveness of companies. The result of the study depicted that three elements of green intellectual capitals consisting of green human, green structural, and green relational capitals positively affected the competitive advantage of small and medium enterprises in electronic field in Taiwan.

3. Methodology

This research was a quantitative study (Creswell, 2009) that connected and examined the influence of intellectual capital on business performance and competitive advantage with five variables and 31 indicators. For intellectual capital, there were three variables, namely human capital with three indicators (capability, satisfaction, and creativity of employees), structural capital with three indicators (information system, organizational process, organizational culture), and relational capital with four indicators (basic marketing capability, loyalty of customers, market intensity, and community relations). For business performance variable, authors employed 10 indicators i.e. leader of industry, future outlook, profit, profit growth, sales growth, return on assets after tax, return on sale after tax, competitive response, success of new product launch, and company success as a whole. For competitive advantage variable, there are 11 indicators i.e. costs, product quality, research and innovation capabilities, management, profit, company growth, main influencer or motivator, image, product imitation, creative idea, and position of the company. Determining the variable indicators of this research was based on the choice of 10 managers of pharmaceutical companies in East Java when conducting depth interview and Focus Group Discussion (FGD).

This research was performed in pharmaceutical companies, member of the Association of Pharmaceutical Company of Indonesia (Indonesian: Gabungan Perusahaan Farmasi Indonesia, GPFI) in the region of East Java. This organization had as many as 44 pharmaceutical companies. The respondents of this study were financial managers and accounting employees. The survey was conducted by distributing questionnaires either directly or through mail, and email. Data analysis was conducted using Structural Equation Modeling method (SEM) because all variables in this study cannot be measured (latent variables). The analysis used to test the hypothesis was Partial Least Square (PLS) which was a variance-based structural equation (SEM) that could simultaneously perform the measurement models and structural tests.

4. Result

Based on the data analysis of hypothesis test with Partial Least Square (PLS), results were presented in Figure 1 and Table 1.

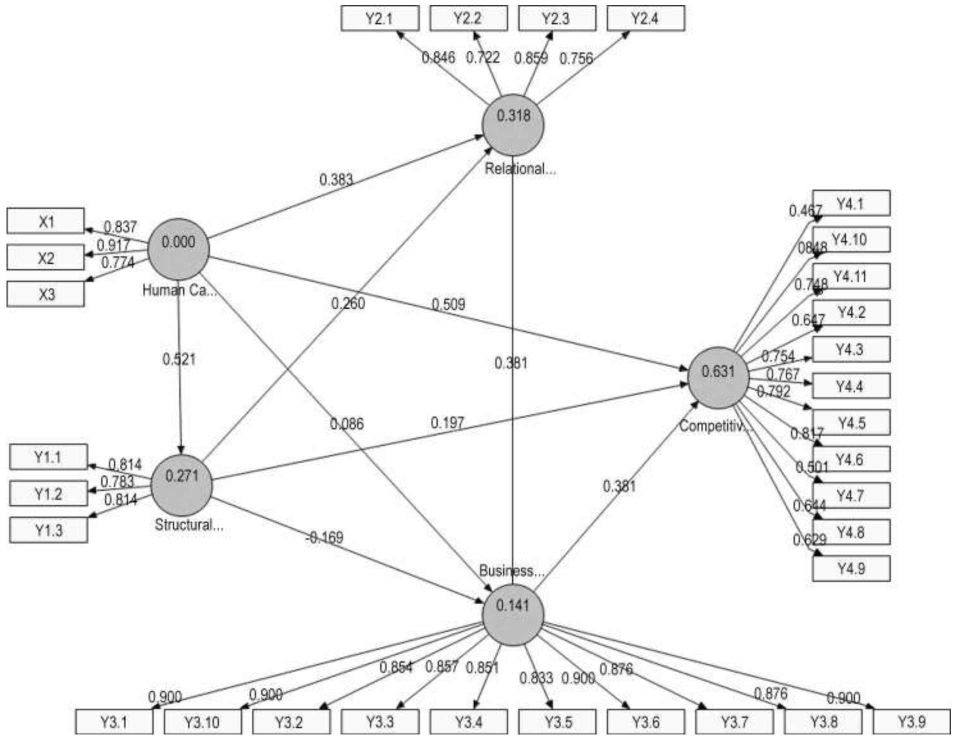

Figure 1. Diagram of Path of Hypothesis Testing Results

H	Influence			Coeff. *Path*	$T_{calculated}$	Explanation
H1	*Human Capital (X)*	→	*Structural Capital (Y1)*	0.520	10.675*	Significant
H2	*Human Capital (X)*	→	Relational Capital (Y2)	0.382	4.039*	Significant
H3	*Human Capital (X)*	→	Business Performance (Y3)	0.085	0.568	Insignificant
H4	*Human Capital (X)*	→	Competitive Advantage (Y4)	0.508	8.244*	Significant
H5	*Structural Capital (Y1)*	→	Relational Capital (Y2)	0.260	3.077*	Significant
H6	*Structural Capital (Y1)*	→	Business Performance (Y3)	-0.169	1.345	Insignificant
H7	*Structural Capital (Y1)*	→	Competitive Advantage (Y4)	0.196	2.809*	Significant
H8	Relational Capital (Y2)	→	Business Performance (Y3)	0.381	2.863*	Significant
H9	Business Performance (Y3)	→	Competitive Advantage (Y4)	0.381	3.938*	Significant

Table 1. Hypothesis Testing Results

Based on Table 1, results of hypothesis testing are identified. Meanwhile, the acceptance criteria of hypothesis were 5% level with a value of T_{table} 2.015. This means that if the value of $T_{calculated}$ is more than 2.015 then the hypothesis is accepted and vice versa. Thus, there were seven hypotheses received, namely Hypotheses 1, 2, 4, 5, 7, 8, and 9, and there were two rejected hypotheses, namely Hypotheses 3 and 6.

The result of Hypothesis 1 acceptance implied that human capital affects the structural capital. This shows that human capital is the spirit of how a company is managed by creating systems, procedures, mechanisms, structures and organizational processes and even organizational culture as parts of the structural capital. This is because human capital relates to the human resources having competence, capability, and knowledge to manage the company. Hypothesis 1 supported other studies indicating that human capital positively and directly influences the structural capital (Shih, Chang, & Lin, 2010) (Hsu, 2006).

The result of Hypothesis 2 acceptance denoted that human capital affects the relational capital. This makes sense because to conduct relationships with external parties (e.g. customers, suppliers, creditor, debtor, and broader society) requires adequate knowledge, capability and competence of employees so that the relations can be executed properly. Similarly, to manage the images of product, service, corporate, customer loyalty, customer satisfaction, negotiation skills, relationships with the community will depend heavily on human capital of company. Hypothesis 2 supported the research revealed that human capital positively and directly influences on structural capital (Maditinos, Šević, & Tsairidis, 2010).

The result of Hypothesis 3 rejection implied that human capital had no effect on business performance. This statement is in line with the diamond specification model (N. Bontis, 1998) revealing that there is no relation between human capital and business performance. Instead, the appropriate link is between human capital and (1) relational and (2) structural capitals, which then both capitals are categorized as business performance. This describes that human capital can affect business performance only through structural and relational capitals. Hypothesis 3 supported the diamond specification model, yet not supporting the previous research (Gogan, Artene, Sarca, & Draghici, 2016) (Bollen, Vergauwen, & Schnieders, 2005).

The result of Hypothesis 4 acceptance meant that human capital affects the competitive advantage. This proves that companies with good human capital such as competence, capability, knowledge can create more competitive products than competitors. Also, cost efficient and creative ideas would be better compared to other counterparts. The results Hypothesis 4 supported the study stating that human capital positively and directly affects the competitive advantage (Chahal & Bakshi, 2014) but there is also other research suggesting human capital cannot directly affect the competitive advantage, instead they must go through relational capital (Yaseen, Dajani, & Hasan, 2016).

The result of Hypothesis 5 acceptance depicted that structural capital effects relational capital. This proves that organizations with strong structural capital will respect the culture of employees trying new things, being innovative, creative, and not afraid in failure. Meanwhile, relational capital activities are mostly related to product innovation, product image, service innovation, customer satisfaction, customer loyalty and community engagement. Hence, structural capital allows employees with high creativity and innovation, which then will increase positive performance of relational capital. Hypothesis 5 supported a study describing that structural capital positively and directly affects relational capital (do Rosário Cabrita, Landeiro de Vaz, & Bontis, 2007) (Nick Bontis & Fitz-enz, 2002).

The result of Hypothesis 6 rejection showed that structural capital did not affect business performance. This also makes sense because structural capital affects more relational capital. It means structural capital in form of system, procedure, strengthening relational capital (e.g. establishing procedures in promotion, product image, relation with society and others). Subsequently, relational capital affects business performance. The result of Hypothesis 6 did not support the results of research stating that the structural capital effect on business performance (Örnek & Ayas, 2015).

The result of Hypothesis 7 acceptance described that structural capital effects relational capital. It is acknowledged that companies with good structural capital in systems, procedures, working mechanisms, organizational structures, and corporate culture will make companies more well-managed than competitors, and have more research capabilities and innovations. The results of Hypothesis 7 supported the research that contended that structural capital had a positive and direct effect on relational capital (Abazeed, 2017).

The result of Hypothesis 8 acceptance implied that relational capital affects the business performance. It is known that if the company is capable to manage a good relational capital such as giving satisfaction to consumers for the sake of loyalty to company's product or service, business performance will then increase. Also, creating a good relationship with the community for a good image in the eyes of society will improve business performance easily and will become advantage for firms. The results of Hypothesis 8 supported the research suggesting relational capital had a positive and direct effect on business performance (Sharabati, Shamari, Nour, Durra, & Moghrabi, 2016).

The result of Hypothesis 9 acceptance meant that business performance affects the competitive advantage. It is understood that a company that has a good performance can win the competition with other companies in the same industry. Another argument is that the relationship is reciprocal i.e. business performance can either affect or be affected by the competitive advantage (Majeed, 2011).

5. Conclusion

Results identified that human capital affected structural capital, relational capital, and competitive advantage. Structural capital affected relational capital and competitive advantage. Relational capital influenced business performance. Business performance had an effect on competitive advantage. Other results showed that human capital had no effect on business performance, and structural capital had no effect on business performance.

6. Limitation and Future Research

The limitation of this study was in the selection of the ideal indicator for each variable based on in-depth interview with key informants. For future research, elaborating appropriate literature review is suggested, and adding other variables such as knowledge management. Pharmaceutical companies can make the results of this study as a reference to improve business performance and competitive advantage by understanding, identifying and integrating intellectual capital components.

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