

The Role of Intellectual Capital in the Performance of Universities in Medan

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Abstract

The main purpose of this research is to find out the relationship of intellectual capital and three components of intellectual capital on the performance of public universities in Medan. Three components of intellectual capital such as human capital, structural capital and relational capital were taken as independent variables and universities' performance was taken as dependent variable. The population of this research is three public universities in Medan, such as UIN-SU (*Universitas Islam Negeri*) of North Sumatera, USU (University of North Sumatra) and UNIMED (*Universitas Negeri Medan*). Sample for this research was 300 respondents, which is collected using convenience sampling technique from lecturers and employees of three public universities in Medan. Structured questionnaires were made as a research instrument to collect data from respondents. Structural Equation Model (SEM) with AMOS was used to test the relationship between components of intellectual capital and universities performance. Results indicate that (1) all the three components show a significant relationship with performance (2) among the three components, the relation of human capital is more prominent on performance of universities.

Keywords: intellectual capital, human capital, structure capital, relational capital, performance.

Introduction

Nowadays, public universities have competitive pressures from the private universities in providing education and transfer knowledge. Private universities have become a choice for society in fulfill their need of education, because they provide many facilities and programs which is more interesting and fit with people need at this time. And also private universities can improve their operating efficiencies. So, to survive, public university must develop a competitive strategy for improving the performance over the private universities and building a sustainable competitive advantage.

University is known as the palace of national higher education, knowledge treasury and location for executing, creating and spreading knowledge for society. Knowledge is one form of intangible assets of organization that will be one of important factors to achieve competitive advantage. An intangible asset is referred as intellectual capital of an organization. Intellectual capital is a solution to achieve the competitive position by utilizing a unique combination of human, structural and relational capital

(Saeed, Sami, Lodhi, & Iqbal, 2013). It is clear the intellectual capital is major asset for universities to improve their performance.

The combination of human and science resources will provide added value and competitive advantage in the modern enterprise (Chen et al., 2005). But it is not easily for organization to combine both of assets for improving the performance. Kristandl and Bontis (2007) said that intangible assets by which an organization is capable of creating sustainable position but this is not easily available to many organizations. Some organization have the feature of immobility, which they have limited life and they are non-physical assets.

Companies in Indonesia tend to use conventional based in building its business so they do not have a competitive advantage. Implementation of Intellectual capital is not familiar in universities or education sectors. Focus of this research is on education sector because universities have a critical and important role in the development of the knowledge-oriented society. Some of the common models of Intellectual Capital include three components of Intangible assets: human capital, structural capital and relational capital (Bontis, 2002).

Intellectual capital becomes a way to gain competitive advantage and become very important for the prosperity, growth and development of an organization in era of knowledge-based economy. Many literatures show that intellectual capital has a significant role in improving performance of organizations (Mention & Bontis, 2013; Muhammad & Ismail, 2009). Sharafi and Abbaspour (2013) shows that intellectual capital has a significant influence on education sector performance especially universities and an academic institution. Universities have been recognized due to their two main functions, they are teaching and research. And nowadays universities are required to perform the function of social & economic growth and development. Shehzad et al. (2014) said in their study that three components of intellectual capital such as human capital, structural capital and relational capital has a significant relationship with performance and human capital is more prominent. Lu (2012) also concludes in the study that intellectual capital does play an important role in influencing teaching and research efficiency as the performance improvement strategies, which helps the manager and/or authorities to improve their operating efficiencies.

Intellectual capital is still not familiar for education sector in Medan. It is necessary to use the intellectual capital at public university in Medan, in purpose they can compete with other universities in Indonesia. Intellectual capital can use as a strategy for improving performance and make a sustainable competitive advantage in producing high quality graduates.

Literature Review

Intellectual Capital (IC)

Intellectual capital is an intangible asset owned by the company. The term Intangible Assets is often found in the accounting literature, while the term Knowledge Assets is usually used by economists and Intellectual Capital (IC) is used in the management literature, but all of them refer to the same intangible value that includes: employee relations, staff management, users/customers and other stakeholders.

Although some organizations are not the same as companies, because Public Universities are not profit-oriented, they are required to include performance indicators. Sanches et al. (2009) said that there are some similarities between universities and corporations where they are required to use IC Framework in the management of organization: (1) there is a need to create value Corporate Social

Responsibility. In this case, Universities should provide information to users, the public, the public sector, business systems, the scientific community and students. ICs can help by providing a new approach to Higher Education managers, focusing on key objectives and performance orientation. (2) Alliance and networks. There is an increase in the importance of relationships and networks. It makes the universities focus on the assessment of relationships.

Human Capital

Fitz - Enz (2009) explains that human capital as a combination of three factors, which is called: 1) the character or nature that is brought to the job, for example, intelligence, energy, positive attitude, reliability, and commitment; 2) person's ability to learn, it's called intelligence, imagination, creativity and talent; 3) motivation to share information or knowledge, the team spirit and goal orientation.

Human capital is a combination of knowledge, skills, innovation and a person's ability to perform his duties, so as to create a value to achieve goals. The establishment of added value contributed by human capital in carrying out its duties and work will provide sustainable revenue in the future for an organization (Malhotra & Bontis in Rachmawati & Wulani 2005).

Structural Capital

SC is the ability of the organization or company to fulfill the company's routine process and structure, which supports the employee's effort to produce optimal intellectual performance, as well as the overall business performance, for example: company's operational system, manufacturing process, organizational culture, management philosophy and all forms of intellectual property owned by the company.

Definitions of Structural capital is the infrastructure which facilitates employees to create their optimum performance, such as the ability of the organization to reach the market, hardware, software, databases, organizational structure, patent, trademark, and all the ability of organizations to support employee productivity (Bontis et al., 2000).

Relational Capital

Relational capital is the knowledge collected by the company as a result of exchange with third parties and potential accumulated knowledge of the future as a result of such exchange. The main focus of relational capital is the level of mutual trust, respect and friendship arising from the close interaction between internal and external partners (Kale et al., 2000). For internal and external stakeholders, it is said that corporate relational capital is represented by relationships between employees, customers and suppliers (Tomasz, 2008).

Performance

Tangkilisan (2005) mentions the performance as a description of the level of achievement of the implementation of tasks within an organization, in realizing the goals, objectives, mission, and vision of the organization. Sharafi and Abbaspour, (2013) shows that intellectual capital has a significant influence on performance of universities and an academic institution. Universities have to improve their capability based on their main functions, such as teaching and research. And nowadays universities are required to perform the function of social & economic growth and development as good as possible. Intellectual capital plays a role to improve the functions of universities. Shehzad et al. (2014) said in their study that three components of intellectual capital such as human capital, structural capital and relational capital has a significant relationship with performance and human capital is more prominent. Human capital has more significant relationship

with performance, it makes universities has to keep in their strategy that the employees are important for their efficiency and strength.

Hypothesis

The hypotheses in this research are as follows:

H1. Intellectual capital has a significant influence on universities performance

H2. Human capital has a bigger influence on universities performance.

Research Method

Population and Samples

The population of this study is public universities in Medan; they are USU, UNIMED and UIN-SU. Sample for this research was 300 respondents, which is collected using convenience sampling technique from lecturers and employees of three public universities in Medan.

Type of Research

This research is an explanatory research studies to test hypotheses about how the influences of intellectual capital on universities performance and which component of intellectual capital has a bigger influences on universities performance. Structured questionnaires were made as a research instrument to collect data form respondents. Structural Equation Model (SEM) with AMOS were used to test the relationship between components of intellectual capital and universities performance

Results and Discussion

Analysis of Descriptive Statistics

Respondent data based on socio-demography can be seen in Table 1.

Table 1. Frequency of gender.

		Frequency	Percent
Valid	Male	135	45
	Female	165	55
	Total	300	100

Respondents are female that is 55% while the remaining 45% is male. It indicates that public universities prefer female as lecturers as well as employees as a structural and administrative worker.

Table 2. Frequency of age.

		Frequency	Percent
Valid	<31 years	60	20
	31-40 years	120	40
	41-50 years	80	27
	>50 years	40	13
	Total	300	100

Lecturers in public universities are still in a very productive age. This condition describes that they still have a full of activities related to devotion, teaching and research as a lecturer. It will support and have a positive impact on the process of strengthening of intellectual values of universities.

Table 3. Frequency of education level.

	Frequency	Percent
S-2	185	62
S-3	115	38
Total	300	100

It is known that public universities are dominated by lecturers and employees with master degree. It shows that public universities need to support lecturers and employees to continuously improve their education and competence. It will support the strengthening of intellectual values of universities and achieving the intelligence and competitive advantage.

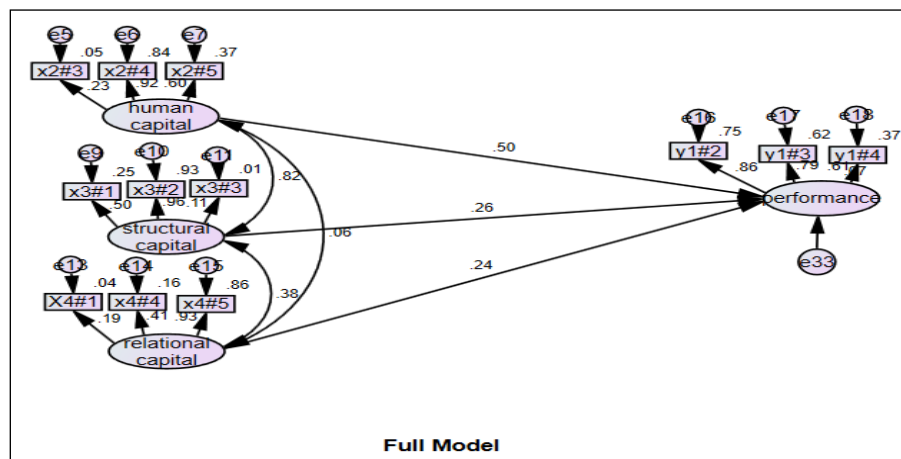


Figure 1. Model of structural equation model of intellectual capital to performance of university.

Table 4. SEM Output of intellectual capital effects on universities performance.

			Estimate	P	Result	Hypothesis
performance	<---	human_capital	0.500	.000	Significant	acceptable
performance	<---	relational_capital	0.240	.005	Significant	acceptable
performance	<---	structural_capital	0.260	.002	Significant	acceptable

The result of this research shows that intellectual capital has a significant positive relationship to the performance improvement of three public universities in Medan (USU, UNIMED and UINSU). Intellectual capital components: human capital, structure capital and relational capital can affect the performance of universities based on the education given, research conducted, and in transferring knowledge and information to the community. All the components of Intellectual capital are positive significantly related to performance of public universities in Medan. Universities could improve assessment of their intangible assets, performance measurements, allocation of resources and benchmarking exercise (Todericiu & Serban, 2015). Todericiu and Serban (2015) conclude that all organizations are requirement to understand and manage the intellectual capital because they need to assess the knowledge, but sometimes it is difficult to translate in to financial terms. Kontic and Cabrilo (2009) also argued that intellectual capital will provide information about emerging trends, such as declining talent availability, higher turnover of strong performers, unionization vulnerability and emerging ethics risks.

Human capital has the most significant relation with public universities performance. Human capital is people who give learning and education, experience and expertise, innovation and creation play an important role in intellectual capital of universities. The lecturers should have a good quality of science and a good method of teaching that can transfer knowledge in a good way so it makes the students feel happy and enthusiastic to continue the study, make an innovation and create a new works which are useful for the nation and country.

Conclusions

The three components of intellectual capitals are linked directly with the performance of the public university in Medan. First of all we focus structure capital which is supported of human capital's role because all the programs and organization needs people who supports the programs of universities. If they are managed properly then they can surely lead the organization toward success. IC has a significant influence on the performance of public universities which is human capital is more prominent among all of them. Structural capital as a second variable has a strong influence on performance. And relational capital is the last one gives a significant effect on the performance of public universities.

References

- Abidin, Sawarjuwono & Kadir. (2003). Intellectual capital disclosure commitment: Myth or reality? *Journal of Intellectual Capital*, 13(1), 39-56.
- Bontis, N., & Fitz-enz, J. (2002). Intellectual capital ROI: A causal map of human capital antecedents and consequents. *Journal of Intellectual Capital*, 3(3), 223-247.
- Bontis, Keow, & Richardson. (2000). Intellectual capital and business performances in Malaysian industries. *Journal of Intellectual Capital*, 1(1), 85-100.
- Fitz-enz, J. (2009). The ROI of human capital: Measuring the economic value of employee performance (Second Edition). New York: Amacom.
- Kale, P., Singh, H. & Perlmutter, H. (2000). Learning and protection of proprietary assets in strategic alliances: Building relational capital. *Strategic Management Journal*, 21, 217- 237.
- Kontic, L., & Cabrilo, S. (2009). A strategic model for measuring intellectual capital in Serbian Industrial Enterprise. *Economic Annals*, 54(183).
- Lu, We-Min. (2012). Intellectual capital and university performance in Taiwan. *Economic Modeling*, 29(2012), 1081-1089.
- Mention, A.L., & Bontis, N. (2013). Intellectual capital and performance within the banking sector of Luxembourg and Belgium. *Journal of Intellectual Capital*, 14(2), 286-309.
- Muhammad, N. M. N., & Ismail, M. K. A. (2009). Intellectual capital efficiency and firm's performance: Study on Malaysian financial sectors. *International Journal of Economics and Finance*, 1(2).
- Rachmawati, D., & F. Wulani. (2005). Human capital and regional performance: A case study in East Java. *Economy Magazine*, 17(3), 262-279.
- Sánchez, M.P., Elena, S., & Castrillo, R. (2007). The ICU report: An intellectual capital proposal for university strategic behavior. Supporting success and productivity practical tools for making your university a great place to work. *IMHE Conference*, Paris, 3/4, September 2007.
- Sharafi, & Abbaspour. (2013). Relationship between intellectual capital and function in universities and higher education institutes. *Quarterly of Education Strategies in Medical Sciences*, 6(2), 75-81.
- Shehzad, et al. (2014). The impact of intellectual capital on the performance of universities. *European Journal of Contemporary Education*, 10(4), 273-280.
- Tangkilisan, H. N. (2005). *Public Management*. Jakarta: Gramedia Widia.
- Todericiu & Serban. (2015). Intellectual capital and its relationship with universities. *Procedia Economics and Finance*, 27(2015), 713-717.
- Tomasz Kijek, A. K. (2008). Relational capital and its impact on performance: The case of Polish Enterprises. *Journal of Intellectual Capital*, 48(1), 105-131.