

The Effect of Human Capital, Structural Capital and Relation Capital on Company Performance

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Abstract: Recent economic developments are more dependent on the value created by intangible assets than tangible company's assets. Intangible assets in question are intellectual capital that is recognized as the basis of individual, organizational, and general competition in the 21st century. The rapid global economy and technological innovations that have led to tough competition in the business world make IC creation, management, measurement, and evaluation an important indicator in improving company performance that will affect the value of the company in the future. This study aims to determine the strong influence of intellectual capital on company performance, and how the influence of human capital on structural capital and relation capital by distributing questionnaires to 100 employees of banking companies in Jakarta for middle and upper positions. Approaching method used is Partial Least Square (PLS). Based on research that has been conducted, it can be concluded that human capital has influence on relation capital and structural capital. Similarly, human capital and relation capital has a significant influence on company performance, but structural capital doesn't have significant effect on company performance.

Keywords: human capital, structural capital, relation capital, company performance.

INTRODUCTON

Economic developments are recently more dependent on the value created by intangible assets than the ownership of the company's physical assets. Intangible assets are intellectual capital as the individual foundation, organization, and general competition in the 21st century [1] in [2]. Therefore, in order to survive, companies are transforming labor-based business into knowledge based business with the main characteristics of science [3].

Paying Attention to the practice of intangible asset management has increased since the 1990s [4]. It is characterized by several studies showing that ICs is contributed significantly to company performance [5, 6]. Edvinsson and Malone [7]] in Chen *et al.* [8] revealed that IC is a hidden asset in the company. Hidden assets means intellectual capital that does not look like any other physical assets and It is not reflected in the company's financial statements.

In Indonesia, ICs emerged since the issuance of PSAK No. 19 (revised 2000) about intangible assets. However, it is not expressed directly as IC. According to PSAK No. 19, intangible assets are non-monetary assets that are identifiable and have no physical form and those are used in the production or delivery of

goods or services, leased to other parties, or for administrative purposes [5]. According to Abidin [9] in Ulum [10], companies in Indonesia tend to use conventional based in building their business so that the resulting product is still poor technological content. In addition, these companies have not given more attention to human capital, structural capital, and customer capital [3]. If the companies want to compete in the era of knowledge-based business, the three components of IC are needed to create value added for the company.

There are several studies showing that IC itself has an influence or value even more on company performance. As research conducted by Astuti [16] shows that human capital will have stronger relationship to structural capital if the relationship is direct relationship. In addition, structural capital can be used to mediate the relationship of relation capital and company performance. However, Bontis [11] shows that there is a negative relationship between customer capital and structural capital, while Bontis *et al.* [12] found a significant positive relationship. Partiwi [13] differently found the insignificant positive relationship. Observation from the level of organizational analysis, structural capital will be related to company performance. Raharja [14] found that human capital does not affect the performance of the company but

structural capital and relation capital have a positive effect on company performance. Bontis [11], Bontis *et al.* [11], Partiwi [13] and Raharja [14] found a significant positive relationship between structural capital and company performance. Good company performance is one of the company's goals. A good company performance requires an innovation that can be a competitive advantage for the company.

The rapid global economy and technological innovations leading to tough competition in the business world, makes creation, management, measurement, and evaluation of IC as an important indicator in improving company performance that will affect to the value of the company in the future. The phenomenon is not only a concern on the scope of the company generally but It also raises its own interpretation for employees, especially for the managers as part of the company's performance support and decisions makers such responses or interpretations that are called perceptions. The perception of upper middle management will affect its performance which will affect the performance and productivity of the company.

From the research that has been revealed, there are some inconsistent results of research, especially on Bontis [11], Bontis *et al.* [12] and Partiwi [13] and Raharja [14] on the relationship of relation capital, structural capital, and human capital so the research is needed to reexamine the intellectual capital model. Therefore, this research tries to examine the influence of intellectual capital to human capital, relation capital and structural capital to the performance of some banks in Jakarta.

LITERATURE REVIEW AND HYPOTHESES

The concept of intellectual capital was first introduced in 1969. Klein and Prusak [15] in Maditinous *et al.* [16] defined intellectual capital as "material that can be formalized, captured and leveraged to produce a higher value asset." Indeed, the intellectual capital is categorized into three components, namely human, internal structural, and relation capital.

Based on theoretical basis, a review of some previous researches, and the developed problems as a basis for formulating the following hypothesis, It is illustrated a framework model to explain the influence of intellectual capital to the performance of the business.

The influence of Human Capital on Structural Capital

The source of innovation and renewal strategy of the company lies on the tacit knowledge of employees. By the creativity and intelligence of employees, they can change the practice and think of innovative solutions to a problem in order to improve the company's knowledge (structural capital such as

organizational routines, procedures, systems, cultures, databases, etc.) Bontis [11] and Partiwi [13] indicate that there is a positive and significant relationship between human capital and structural capital. Bontis *et al.* [12] found a positive but insignificant relationship for the service industry and It is positive and significant relationship for non-service industries.

H1: Human capital has positive effect to structural capital.

The Effect of Human Capital on Relation Capital

Human capital companies have the potential to build market orientation for consumers. The better the employee competence, the better the employees understand the needs of consumers and will increasingly be able to develop relation capital to hold consumer loyalty. This is in accordance with Bontis [11], Bontis *et al.* [12] and Partiwi [13] finding a positive and significant relationship between human capital and relation capital.

H2: Human capital has positive effect to relation capital.

The Effect of Structural Capital on Company Performance

Structural capital means infrastructure supporting employees to optimize their performance. This is because structural capital of capital will have a sportive culture that allows individuals to try new things, learn them, and be ready to fail [12, 13]. If an organization has good systems and procedures, so intellectual capital will be able to reach its full potential, and the company's performance will also be maximized. This is in accordance with Bontis [11], Bontis *et al.* [13] and Astuti [13] in Astuti and Sabeni [13] finding that there is a positive and significant relationship between structural capital and firm performance.

If an organization is able to codify the company's knowledge and develop structural capital such as creating a good routine, good organizational culture, so competitive advantage will be achieved. These advantages will relatively produce higher company performance. Based on resource-based theory of intellectual capital (structural capital is one of the elements of IC) owned by the company, A company is able to create competitive advantage to improve the performance of the company (company performance). Based on the description, the following hypotheses can be prepared:H3: Structural capital has a positive effect to company performance

The effect of Human Capital to company performance

Some researchers have found that human capital has a positive effect on company performance [11, 17, 18]. Chen *et al.* [6] showed that firms with high human capital efficiency tend to have higher financial

performance than firms with low human capital efficiency. Wang and Chang [6] stated that human capital has an indirect impact on performance, but it can impact the innovation capital and process capital that will ultimately impact the company's performance. Badawi Saluy [19] work motivation had a significant effect on employee performance in PT.IE. In his research was if work motivation increases then employee performance will too.

Based on Resource Based Theory, human capital fills the criteria as unique resources that is able to create competitive advantage of company and then used to compile and apply company's strategy in order to improve company performance. In addition, employees of companies with good skills and capabilities will provide long-term rewards for the organization in higher productivity, which ultimately increases the company's income. Based on the description, the following hypotheses can be managed: H4: Human capital has positive effect to the company performance

The effect of Relation Capital to company performance

Relation capital is knowledge of relationships to stakeholders that can affect an organization. Bontis [11] in Cheng *et al.* [6] stated that knowledge of marketing channels and relationships to consumers plays an important role in relation capital, and that knowledge is gained from corporate relationships to external parties. Fornell [20] in Cheng *et al.* [6] found that customer's satisfaction enhances the firm's business relationships, reduces product price elasticity, and increases the firm's prestige.

In its interacting, the company is connected to the internal and external. Based on Resource-Dependency Theory proposed by Pfeffer and Salancik [21] in [13], It was that the company focuses primarily on the symbiotic relationship between the organization and its environmental resources. The organization continually seeks resources from its environment to survive. Relation capital, which is an external corporate relationship, fulfills unique criteria as a company resource and holds one of the key roles in the company's survival based on resource based theory.

In Resource Based Theory, intellectual capital fulfills criteria as unique resources that can create a company's competitive advantage in order to improve the performance of the company. There is an interesting relationship between relation capital and company performance. The quality of service received by customers is the most important factor in customer satisfaction. The primary duties of the company to improve customer satisfaction are by improving the

quality of service received by customers. Companies investing much to focus on customers / consumers and become market makers will absolutely be able to increase or improve the performance of the company. Based on the description, the following hypotheses can be compiled: H5: Relation capital has positive effect to the company performance

RESEARCH METHODS

Types of research

The type of the research is a causality research method meaning a research that provides a concrete explanation of the variables that are causes and a result.

Population and sample

The study population is a banking company in Jakarta. Sampling as many as 100 people with sampling technique is done by purposive sampling. It is sample selection technique using consideration. Selected sample in this research is middle and upper management with minimum education Bachelor Degree. Bachelor Degree education is assumed that they understand the system used in the company and able to use information well for increasing company performance, including knowledge about intellectual capital of the company.

Analysis Method

As a data analysis tool, the study uses Partial Least Square (PLS) approach. PLS is one of methods to implement the model of Structural Equation Modeling (SEM).

RESULTS AND DISCUSSION

From 100 questionnaires distributed to respondents, 100 questionnaires were collected. Thus the response rate of respondents in this study is 100%. Table 1 shows that the number of male respondents is more than female respondents; the total male respondents are 63 people (63%) the total female respondents are 37 people (37%). Respondents with a working period of 5-10 years consist of fifteen people with Bachelor Degree education, fifteen people with Master Degree education, age range 25-35 years is twenty eight people and age range 35-45 is two people; respondents with a working period of 11-15 years consist of eight people with Bachelor Degree education, and thirty eight people with Master Degree education, and seven people with Doctorate education, by age range 25-35 years are six people, and age range 35-45 years are forty two people, and over 45 years are five people; respondents with a working period of more than 16 years consists of three persons Bachelor Degree, nine people Master Degree, five people Doctorate with age range 35-45 years are two people and more than 45 years are as many as fifteen people.

Table-1: Respondents' Profile

			Total	Percentage (%)				
Number of respondents			100	100				
Gender :								
Male			63	63				
Female			37	37				
Working Period (years)	Education			Age				
	Bachelor Degree	Master Degree	Doctorate	Total	25-35	35-45	>45	Total
5-10	15	15	-	30	28	2	-	30
11-15	8	38	7	53	6	42	5	53
>16	3	9	5	17	-	2	15	17
Jumlah	26	62	12	100	34	46	20	100

Descriptive statistics

Descriptive statistics is aimed to analyze data based on the results obtained from valid respondents' answers to each indicator used as a variable gauge. A number of indicators of research variables that can't be

used for hypothesis testing are not included in the presentation of descriptive statistical analysis. Descriptive statistical analysis is presented in the following table:

Table-2: Descriptive Statistics

	N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation
HC1	100	4	1	5	433	4.33	.726
HC2	100	4	1	5	403	4.03	.846
HC3	100	3	2	5	411	4.11	.886
HC4	100	4	1	5	405	4.05	.880
HC5	100	4	1	5	360	3.60	.943
HC6	100	3	2	5	394	3.94	.827
HC7	100	3	2	5	394	3.94	.862
HC8	100	4	1	5	352	3.52	1.039
HC9	100	4	1	5	391	3.91	.854
HC10	100	4	1	5	347	3.47	.958
HC11	100	3	2	5	413	4.13	.677
HC12	100	4	1	5	373	3.73	.790
SC1	100	3	2	5	366	3.66	.781
SC2	100	4	1	5	372	3.72	.933
SC3	100	3	2	5	378	3.78	.736
SC4	100	4	1	5	358	3.58	.997
SC5	100	4	1	5	339	3.39	1.051
SC6	100	4	1	5	342	3.42	1.065
RC1	100	4	1	5	391	3.91	.805
RC2	100	4	1	5	390	3.90	.847
RC3	100	4	1	5	391	3.91	.805
RC4	100	3	2	5	407	4.07	.756
RC5	100	3	2	5	419	4.19	.787
RC6	100	3	2	5	384	3.84	.873
RC7	100	3	2	5	395	3.95	.880
RC8	100	3	2	5	366	3.66	.977
RC9	100	2	3	5	413	4.13	.761
RC10	100	4	1	5	408	4.08	.861
KP1	100	3	2	5	380	3.80	.841
KP2	100	3	2	5	379	3.79	.782
KP3	100	4	1	5	382	3.82	.914
Valid N (listwise)	100						

Source : Research Data Processed (2015)

Assessing the Outer Model or Measurement Model

The Outer model defines how each indicator block links to its latent variable. Three criteria for assessing the outer model in the use of data analysis techniques are using SmartPLS are Convergent validity, Discriminant Validity, and Composite Reliability.

Convergent validity is judged on the correlation of the indicator with its construct score. According to Igbaria *et al.* [22] using guidelines from Hair *et al.* [23] relative importance and significant loading factor items, the loading factor is > 0.5 .

Table-3: Outer Loading (Measurement Model)

	Human Capital	Company Performance	Relation Capital	Structural Capital
HC 1	0.634			
HC 2	0.753			
HC 3	0.692			
HC 4	0.841			
KP 1		0.858		
KP 2		0.766		
KP 3		0.825		
RC 1			0.865	
RC 2			0.816	
RC 3			0.747	
RC 4			0.708	
RC 5			0.642	
RC 6			0.669	
RC 7			0.561	
SC 1				0.774
SC 2				0.713
SC 3				0.661
SC 4				0.776
SC 5				0.578
SC 6				0.553

Source : Research Data Processed (2015)

Discriminant validity is performed to ensure that each concept of each latent variable is different from the other variables. Discriminant validity is assessed on the basis of cross loading measurements with its constructs. The Good Discriminant validity is if the loading value of each indicator of a latent variable has a loading value that is greater than the value of the other latent variables. It can be seen whether each latent variable has good discriminant validity or not as the following below.

From the results of the table test above (Table-4), it can be concluded that each latent variable has good discriminant validity and existing indicators on each latent variable is better in their own variables than the value of the indicator in place of other latent variables.

The criterion of construct reliability is measured by looking at the composite reliability score and cronbach alpha values of the indicator blocks measuring the constructs. The construct is reliable if the value of composite reliability and cronbach alpha is above 0.70.

Inner model illustrates the relationship between latent variables based on substantive theory (Fig-1). The value of significance and R-square is a goodness-fit test model to test the structural model. The structural model is evaluated by using R-square for the dependent construct, the parameter coefficient and the statistical significance score t of the structural path coefficients (Path Coefficients).

Table-4: Discriminant Validity (Cross Loading)

	Human Capital	Company Performance	Relation Capital	Structural Capital
HC 1	0.634	0.321	0.348	0.232
HC 2	0.753	0.345	0.158	0.365
HC 3	0.692	0.332	0.259	0.497
HC 4	0.841	0.563	0.517	0.555
KP 1	0.451	0.858	0.432	0.353
KP 2	0.495	0.766	0.299	0.416
KP 3	0.425	0.825	0.501	0.407
RC 1	0.535	0.446	0.865	0.653
RC 2	0.400	0.347	0.816	0.585
RC 3	0.213	0.201	0.747	0.519
RC 4	0.260	0.242	0.708	0.450
RC 5	0.107	0.412	0.642	0.319
RC 6	0.351	0.320	0.669	0.321
RC 7	0.303	0.450	0.561	0.299
SC 1	0.385	0.281	0.396	0.774
SC 2	0.493	0.130	0.449	0.713
SC 3	0.339	0.455	0.596	0.661
SC 4	0.534	0.385	0.554	0.776
SC 5	0.163	0.317	0.467	0.578
SC 6	0.388	0.349	0.135	0.553

Source : Research Data Processed (2015)

Table-5: Composite Reliability dan Cronbachs Alpha

	Composite Reliability	Cronbach Alpha
Human Capital	0.822	0.720
Company Performance	0.857	0.750
Relation Capital	0.882	0.844
Structural Capital	0.837	0.766

Source : Research Data Processed (2015)

Structural Model Testing (Inner Model)

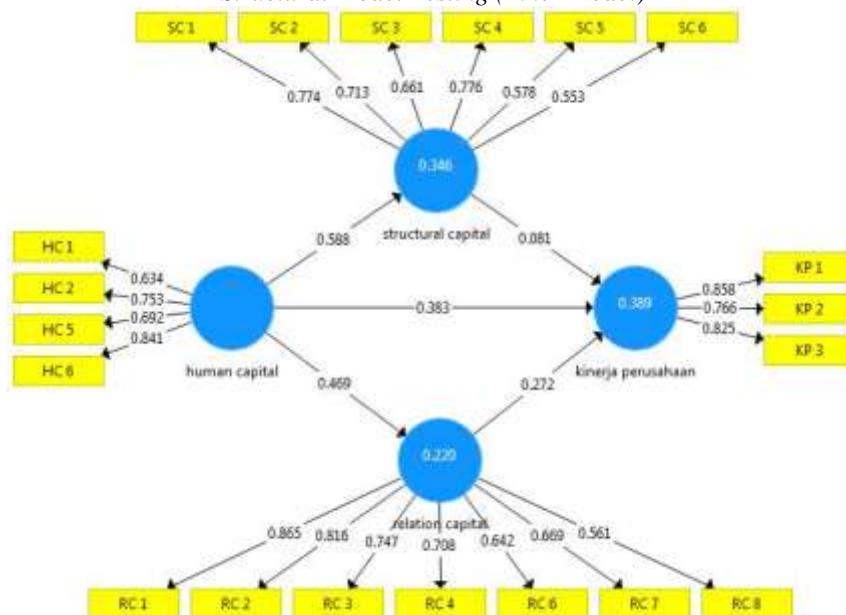


Fig-1: Structural Model

Table-6: R-Square

	R Square
Company Performance	0.389
Relation Capital	0.220
Structural Capital	0.346

Source : Research Data Processed (2015)

Table 6 shows that the company's performance construct can be explained by human capital, structural capital, and relation capital of 38.9%, as well as variance of relation capital is able to be explained by

human capital of 22.0%, and structural capital is influenced by human capital of 34.6%. Testing to see the significance of inter-constructs of latent variables can be seen in table 7, which is as follows:

Table-7: Path Coefficient (Mean, STDEV, T Value, P Value)

	Original Sample (O)	Sample Mean (M)	Standar Error (STERR)	T statistik (Io/STER R)	P Value	
HC – KP	0.383	0.374	0.098	3.928	0.000	Significant
HC – RC	0.467	0.491	0.062	7.538	0.000	Significant
HC – SC	0.588	0.604	0.069	8.477	0.000	Significant
RC – KP	0.272	0.280	0.137	1.984	0.048	Significant
SC – KP	0.081	0.084	0.137	0.588	0.557	Not Significant

Source : Research Data Processed (2015)

The table above shows that human capital has a significant influence on the performance of this company indicated by the score of T statistics that is more than 1.9. as well as human capital to structural capital, human capital to relation capital, relation capital to performance, capital to the performance of the company does not have significance. This can be seen from the score of T score generated less than 1.9 and the score of P value more than 0.05.

DISCUSSION

The first hypothesis (H1) is tested to determine the perception of middle and upper management about the effect of human capital to structural capital. Based on the results of processing data in the table 5.8, the score of path coefficient obtained from the relationship of human capital and structural capital of 0.588 and T-score attained 8,477 so it can be concluded that the management considers human capital and structural capital is related positively and has the greatest influence. It can be explored from the value/score of positive path coefficient and value of T that is more than 1.9 and its score is the greatest to the other so that it indicates that human capital of the company has been used or developed optimally so that significantly affects the structural capital in the company. The acceptance of this hypothesis supports the results of research Partiwi [13] and Astuti [13] stating that there is a significant positive relationship between human capital to structural capital.

The second hypothesis (H2) was tested to determine the perception of middle and upper management regarding the influence of human capital

on relation capital. Based on the results of processing data on the table 5.8 value of path coefficient obtained from the relationship of human capital and relation capital, the score is 7,538 for T statistics and the coefficient of the path is 0.469. From both values/scores, it is concluded that middle and upper management perceptions reveal human capital has an influence to relation capital positively and significantly due to positive coefficient value and t-statistic value is greater than t-table (t-table significance 5% = 1.96). The results of these tests indicate that human capital of the companies have been used optimally and play a role in increasing or improving relation capital. Being accepted of this hypothesis supports the results of Partiwi's research [8] stating that there is a positive relationship between human capital and relation capital.

The third hypothesis (H3) was tested to determine the perception of middle and upper management about the effect of structural capital on company performance. Based on the results of the data on Table 8, the path coefficient obtained from the relationship of structural capital and firm performance is 0.081 with the t-statistic value of 0.118. From both values, it can be concluded that middle and upper management have perception that structural capital and company performance are positive and not significant because the coefficient value of the path is positive but the t-statistic value is less than t-table (t-table significance 5% = 1, 96).

The results of hypothesis test indicate that structural capital has not had a significant impact and has little role in increasing or improving company

performance. Being accepted and insignificant this third hypothesis is different from the results of Bontis [11], Bontis *et al.* [12], Partiwi [13] and Raharja [24] which stated that there is a positive and significant relationship between structural capital and company performance.

The fourth hypothesis (H4) was tested to determine the perception of middle and upper management about the influence of human capital on company performance. Based on the results of processing data on Table 5.8 coefficient of the path obtained from the relationship of human capital and company performance is 0.383 with a t-statistics of 3.928. From both values, middle and upper management have a perception that human capital and company performance are positive and significant because the value of the path coefficient is positive and the t-statistic value is bigger than the table (t-table significance 5% = 1,96).

The test results indicate that human capital of each respondent is used or developed optimally and has an impact in increasing company performance. The acceptance of the fourth hypothesis is also due to the convergent validity test (on table 5.5). Most of the human capital indicator has a value factor loading more than 0.5 so it can represent / measure human capital. This result is not in line with previous research conducted by Raharja [24] stating that human capital has a negative relationship with the performance of the company.

The fifth hypothesis (H5) is tested to determine the perception of middle and upper management about the effect of relation capital to company performance. Based on the results of processing data on table 5.8 value of path coefficient obtained from relation capital relations and company performance is equal to 0.272 with t-statistics of 1.984. From these two values, it can be concluded that employees have perception that relation capital and company performance are positive and significant because the value of the path coefficient is positive and the t-statistic value is bigger than t-table (t-table significance 5% = 1,96).

The results of the hypothesis test indicate that the relation capital of the respondent company has been used optimally and has a role in increasing or improving company performance. The quality of service received by consumers, meetings with consumers, customer satisfaction, customer loyalty, and the ability to understand the target market can make the company focus on the customer and the market determinant so as to increase or improve the performance of their company.

Being accepted of this fifth hypothesis supports the results of research Bontis [11] and Ulum

[10] which states that there is a positive and significant relationship between relation capital and company performance but unlike the results of research Astuti and Sabeni [13] which concluded that customer capital is positive and insignificant with the performance of the company.

CONCLUSION

Human capital has a huge effect to structural capital. Human capital has a significant influence on relation capital. Structural capital to company performance has influence but It is not significant. Human capital to company performance has a significant effect. Relation capital to company performance has a significant influence.

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