Corporate governance, intellectual capital, and performance of Indonesian public companies

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A R T I C L E   I N F O

A B S T R A C T

The two important issues for companies' sustainability are corporate governance and intellectual capital. This research is intended to test the relationship between corporate governance, intellectual capital, and companies' performance. This is a quantitative research using archival data taken from the financial reports and annual reports of Indonesia punlic companies during 2011-2016. Corporate governance was measured using the proportion of female directors and public ownership. Intellectual capital indicators are CEE (Capital Employed Efficiency) and ICE (Intellectual Capital Efficiency). The companies' performance constructs are Tobin's Q and Return on Assets (ROA). The data were analysed using Partial Least Square. The results shows, firstly, that Corporate Governance has positive effect on Intellectual Capital. Secondly, corporate governemtn has a negative effect on the company's performance. Thirdly, Intellectual capital has no effect on the company's performance. Fourthly, Intellectual capital has no mediating effect in the relationship between corporate governance and company's performance. The results proved that Agency Theory is the better than Resources-Based Theory for explaining the condition of Indonesia public companies.

A B S T R A K

Ada dua isu penting bagi keberlangsungan perusahaan, yaitu: tata kelola dan modal intelektual. Penelitian ini bertujuan untuk menguji hubungan antara tata kelola perusahaan, modal intelektual, dan kinerja perusahaan. Penelitian ini adalah kuantitatif menggunakan data sekunderdari laporan keuangan dan laporan tahunan perusahaan publik di Indonesia selama 2011-2016. Tata kelola perusahaan diukur menggunakan proporsi direktur perempuan dan kepemilikan publik. Modal intelektual diukur dengan indikator CEE (Capital Employed Efficiency) dan ICE (Intellectual Capital Efficiency). Kinerja perusahaan diukur dengan Tobin's Q dan Return on Assets (ROA). Data selanjutnya dianalisis statistik menggunakan Partial Least Square. Hasilnya menunjukkan 4 hal. Pertama, Tata Kelola berpengaruh positif terhadap Modal Intelektual. Kedua, tata kelola berpengaruh negatif terhadap kinerja perusahaan. Ketiga, Modal intelektual tidak berdampak terhadap kinerja perusahaan. Keempat modal intelektual tidak memediasi hubungan antara tata kelola perusahaan dengan kinerja perusahaan. Hasil ini menunjukkan bahwa Teori Agensi lebih sesuai untuk menjelaskan kondisi perusahaan publik di Indonesia dibandingkan dengan Resourcess-Based Theory.

1.   INTRODUCTION

There are several conflicting theories that can explain the companies' policy. Two of them are Agency Theory and Resources- Based Theory. Agency theory explains that corporate board of directors as an agent work on behalf of the shareholders interest as principal to increase the company's value (Jensen & Meckling 1976). In order to achive corporate value, agent should adopt several mandatory policies such as good corporate

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governance. A good corporate governance can lead company to develop long-term company's value such as by investing in Intellectual Capital (Nadeem et al. 2017). Resources-based theory explains that the company's performance diffrences within industries are due to the differences in quality of input resource (Marzo 2014). Based on these two theory, this research attempts to find the relationship between corporate governance, intellectual capital, and corporate's performance.

Some previous studies still partially tested the relationship between the research's three variables. For example, a study by Appuhami & Bhuyan (2015) found that Corporate Government has effect on Intellectual Capital. Also the study by Tojedo-Romero et al. (2017), they found that corporate governance has impact on intellectual capital. Ulum et al. (2017) also provided evidence that that intellectual capital has effect on the company's performance. Based on Baron & Kenny (1986) logics, there could be a mediating role of Intellectual capital in the relationship between corporate governance and the company's performance.

The previous studies also show that there are many indicators of Corporate Governance, Intellectual Capital (IC), and Corporate's Performance. Corporate Governance is proxied by Muttakin (2015) using independent commissionaire and audit committee. Almusalli & Ismail (2015) in the sme study used boards of commissionaire meetings as corporate governance variables that has relationship with IC. The board of directors' gender diversities or female proportion also grow as important factors in corporate governance as in the Tojedo-Romero et al. (2017) and Nadeem et al. (2017). Other important corporate governance factors are the ownership structure such as foreign ownership (Muttakin 2015), Institutional Ownership (Ramadhanti & Indrayanto 2016), and public ownership (Utama et al. 2017).

There are two group measurements of intellectual capital. First, Pulic VAIC™ and the Modified VAIC (MVAIC). It is one of the populer models. This model was developed by Pulic (1998, 2000) and they were used across the world cases such as by Riahi-Belkaoui (2003) in United States, Firer dan Williams (2003) in South Africa, Cabrita dan Bontis (2008) in Portugis, and Nimtrakoon (2015) in ASEAN Countries. Second, Intellectual Capital Disclosure by Haji & Ghazali (2013), Barus & Siregar (2014), also Tojedo-Romero et al. (2017).

There are also many performance indicators related to corporate governance and intellectual capital. These indicators are such ROA or Return on Assets (Nimtrakoon, 2015), Tobins Q (Perryman et al., 2017), Market Value Equity per Book Value Equity (Dzenopoljac 2017), and Price Earnings Ratio or PER (Ulum et al. 2017). Besides that, Nkundabanyanga et al. (2014) already tested the mediating of Intellectual capital on the relationship between board governance and the company's performance. This research used questionaire in Ugandan service firms. Hence, different from Nkundabanyanga et al. (2014) that using primary data, this research used archival data.

Based on the previous theoretical and research gaps, this study tries to to test four factors. First, it tests wether Corporate Governance using gender diversities and public ownership as proxy have effect on Intellectual Capital. Second, this study also tests the effect of Corporate Governance using female director as proxy on Performance. Third, this study tests the effect of Intellectual capital on performance. Fourth, this study also determines the mediating effect of Intellectual capital on the relation between Corporate Governance on company's performance.

2. Hypothesis Development

As argued that there are some conflicting theories that can explain the reklatioship between Corporate Governance, Intellectual Capital, and Corporate's Performance. The theories in this case are Agency Theory and Resources-Based View. Agency theory describes that corporate managers as an agent work to the shareholders interest as principal to increase the company's value (Jensen & Meckling 1976). It is argued by this theory that a good corporate governance can lead company to develop a long-term company's value such as by investing in Intellectual Capital (Nadeem et al. 2017).

In another case, resources-based theory can also explain that intellectual capital is an important resource for maintaining the sustainability of company's value. This theory helps to explain why the companies that operate in the same industry can have differences in their performance (Marzo 2014). Resources-based view considers the intellectual capital as a strategic asset to optimize the company's performance (Nkundabanyanga et al. 2014).

It is stated that intellectual capital of the company tends to be interchanged with human capital, structural capital, and customer capital (Riahi-Belkaoui 2003). Yet, human capital is knowledge, experience, and special skills owned by the employees. Structural capital is how the system

to adopt this knowledge in the organization to create firm value. Customer capital is how good organization's relationship with its customer Nkundabanyanga et al. (2014).

As it was found in a study by Appuhami & Bhuyan (2015), corporate governance has effect on intellectual capital. This evidence was also supported by a study Haji & Ghazali (2013), that corporate governance also has effect on intellectual disclosure. Another study supported the evidence of the effect of good corporate governace was also by Tojedo-Romero et al. (2017). They found that female directors are important corporate governance factors that have impact on intellectual capital disclosure. Therefore, as the theoreies and some evidences in the previous studies show that the importance of intellectual capital and good corporate governace in the companies, the first hypothesis of this research can be stated as follows:

H_1: *Corporate governance has effect on the companys' intellectual capital*

Kagzi & Gua (2017) found that woman in the board of directors as corporate governance indicator has an effect on firm performace. The second hypothesis statement is based on this study and can be stated as follows:

H_2: *Corporate governance has effect on company's performance.*

Research by Ulum et al. (2017) provided evidence that intellectual capital has effect on company's performance. For that reason, the third hypothesis in this research is stated as follows:

H_3: *Intellectual capital has effect on corporate's performance.*

Now that some studies provided evidences on the importance of intellectual capitals and good corporate governace, it is also argued in this study for these factors in the company's performance. For example, a study by Appuhami & Bhuyan (2015) found that Corporate Government has effect on Intellectual Capital. Tojedo-Romero et al. (2017) stated that Female directors are important corporate governance factor that have impact on intellectual capital disclosure. Besides that, a study by Kagzi & Gua (2017) also found that corporate governance using woman in the board of directors has effect on the company's. Ulum et al. (2017) stated that intellectual capital has effect on company's performance. Based on Baron & Kenny (1986) logics there are possibility that Intellectual Capital has mediating effect on the relation between Corporate Governance and Companies' Performance. Nkundabanyanga et al. (2014) research found that Intellectual capital is a mediator variable in the relation between Corporate Governance and Intellectual Capital. Hence, the fourth hypothesis is stated as follows:

H_4: *Intellectual capital has mediating effect on the relationship between corporate governance and the company's performance.*

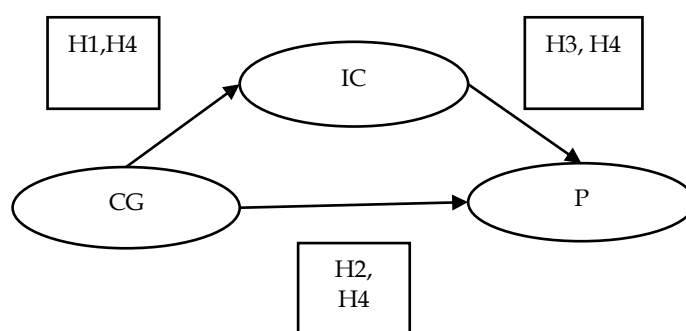There are four research hypotheses. As shown in Figure 1.

Figure 1
Research Model

3.   RESEARCH METHOD

This research is quantitative using hypothesis testing. It is an archival due to the usage of historical secondary data from financial reports and annual reports of Indonesian public companies. The population consists of all companies listed in Indonesia Stock Exchange during 2011-2016. 2011. They were selected based on the trend that Indonesian companies

started to disclose more about their Corporate Governance, including having female people in their boards of directors. The data were ended in 2016 at the latest data available while researcher worked on this study. These data were taken from www.idx.co.id.

The sample was taken using a purposive sampling method with the criteria as follows. First, companies always issue a complete Financial Reports and Annual Reports during research period. Second, the gender of companies' Board of directors can be determined clearly.

Exogent variable in this research is Corporate governance (CG). Corporate Governance has two indicators. First, the proportion of female director (number of female directors/total number of board of director) taken from Perryman et al. (2017). Second, public ownership (% Public Shares/ Total Outstanding Shares) as in Utama et al. (2017).

There are two endogen variables in this research such as Intellectual Capital (IC) and Firm's Performance. Intellectual capital used two elements of MVAIC as indicators. MVAIC are Modified Value Added Intellectual Coefficient (Nimtakoon, 2015). MVAIC consist of CEE (Capital Employed Efficiency) and ICE (Intellectual Capital Efficiency). The main formula in MVAIC are VA (Value Added) that equal with OUT less with IN. OUT is Total revenues, while IN is Total Expenses. CEE formula is CE (Capital Employed) per VA. CE is equal with Total Asset less with Intangible Asset.

ICE is the sum of HCE (Human Capital Efficiency), SCE (Structural Capital Efficiency), and RCE (Relational Capital Efficiency). HCE are equal with VA per HC (Human Capital). HC is measured by total employees wages and salaries. SCE is equal with SC (Structural Capital) per VA. SC is VA less with HC. RCE formula are RC (Relational Capital) per VA. RC is Marketing Costs. The summary of MVAIC formula is in Figure 2.
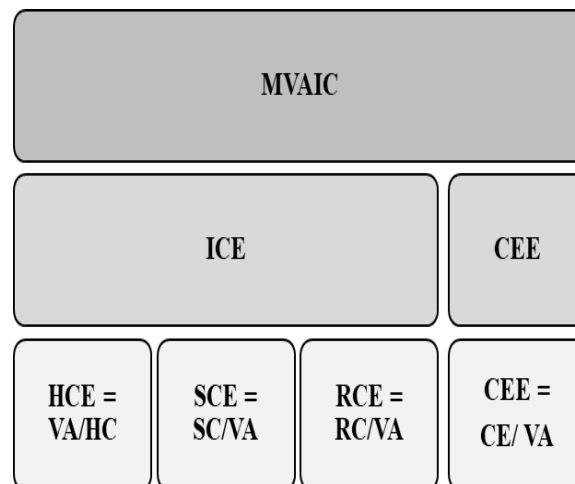

Figure 2
MVAIC Formula

The companies's performance has 2 indicators. First, Tobins Q (Total Asset plus Market Value Equity less Book Value Equity Book Value Asset) taken from Per-ryman et al. (2017). Second, ROA or Return on Assets (Operating Income/ Total Assets) as in Nimtrakoon (2015).

The data were analyzed using Partial Least Square. This instrument is used for several reasons. Firs, it can handle for large number of data. Second, it can test partial as well as total effects between variables. Third, it can use more than 1 indicators for each varibles. The model for PLS test is shown in Figure 3.
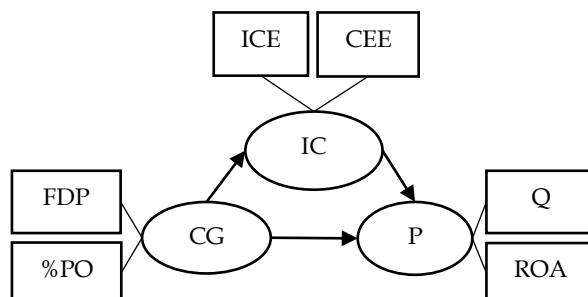

Figure 3
PLS Model

4. RESULTS AND DISCUSSION
Results
In this section, both of the data based on the statistic results descriptively are presented. From this, it can be described in details. It is followed by testing the hypotheses.

Descriptive statistics
There are 3102 pooling data from 517 listed companies during 6 years. The results of derscriptive statistics are as seen in Table 1.

Table 1
Descriptive Statistics

Variabel	Indicator	Minimum	Maximum	Mean	SD
CG	FDP	0.00	1.00	0.08	0.14
	PO	0.00	94.71	22.67	18.65
IC	CEE	-58575.09	21246.35	-9.32	1295.01
	ICE	-2.00	3139310.91	6862.46	66148.46
P	ROA	-97.02	119.06	0.14	3.52
	Q	-373.71	1660.28	2.59	34.03
N = 3102					

Source: Data Anaysis

It is found that corporate governance (CG) practice in Indonesian is relatively low. Female Directors Proportion average is only 8%. This means that most public ies are lack of gender diversity in the Boardroom. Public ownership average 22.67%, it means that the public ownership is not dominating the ownership structure. The low public ownership is due to mostly Indonesian companies which are the family-companies in the form of institutional ownership or government companies. The lack of public ownership usually lack of force from shareholders to the companies in maintaining the transparency and accountability.

Intellectual capital (IC) uses capital employed efficiency (CEE) and intellectual capital efficiency (ICE) as indicators. CEE and ICE are varied across companies, which can be seen from CEE mean -9.3282 with standard deviation 1295.01 and ICE mean 6862.4607 with standard deviation 66148.46. The performance is relatively low but it varies across the companies. This can be seen with Return on Assets (ROA0 with the mean 0.15 and standard deviation 3.52 and Tobins Q average 2.59 with standard deviation 34.03.

Hypothesis Testing Results
Hypotheses were tested using WarpPLS software. There are two groups of tests. First, it is the validity and Reliabity Tests. Second, it is the test of the Model.
1. Validity and Reliability Test
   a. Validity Test
Validity test for the contruct or indicators consists of convergent and discriminant validity tests.

Covergent Validity can be seen from the loading factor value. The number of observation in this research is 3102 or more than 350, according to Hair *et al.* (2013: 115) this indicator is valid if the loading factor is higher than 0.30. The result of convergent validity test can be seen in Table 2. All indicators in this research have a loading factor higher than 0.30, therefore, these indicators are considered to have passed the convergent validity test.

Table 2
Covergent Validity Test

V	I	Loading Factor
CG	FDP	0.716*
	PO	0.716*
IC	ICE	0.708*
	CEE	0.708*
P	ROA	0.894*
	Q	0.894*

*Loading Factor > 0.30

Sources: Data Analysis

Discriminant validity test can be seen through the cross loading value. If indicator cross loading value is higher than 0.7 within 1 variable, it meets the discriminant validity criteria. Table 3 shows the result of discriminant validity test, that all indicators can fulfill this test with the cross loading value higher than 0.7.

Table 3
Discriminant Validity Test

V	CG	IC	P
FDP	0.716*		
PO	0.716*		
CEE		0.708*	
ICE		0.708*	
ROA			0.894*
Q			0.894*

*cross loading > 0.7

Sources: Data Analysis

a. Reliability Test

Reliabilitas test was done using Cronbach alpha and composite reliability. If cronbach alpha and composite reliability are higherthan 0.06, the reliability can be accepted. The results are shown in Table 4.

Table 4
Reliability Test

Variables	Cronbach Alpha	Composite Reliability
CG	0.050	0.678**
IC	0.002	0.667**
P	0.748*	0.888**

*Cronbach alpha >0.6
**Composite reliability > 0.6

Sources: Data Analysis

1. Structural Model Test

Structural model test was done starting with Model Fit and Quality Indices Test. The results can be seen in Table 5.

Table 5
Model Fit and Quality Indices

	Value	P	Notes

APC	0.025	0.043	Acceptable P < 0.05
ARS	0.001	0.236	
AARS	0.001	0.241	
AVIF	1		Acceptable ≤ 5
AFVIF	1		Acceptable ≤ 5
GoF	0.028		
RSCR	1		
			Acceptable ≥ 0.9, ideally = 1
SSR	1		Acceptable ≥ 0.7
NLBCDR	0.667		

Sources: Data Analysis

Average path coefficient (APC)=0.025, P=0.043; Average R-squared (ARS)=0.001, P=0.236; Average adjusted R-squared (AARS)=0.001, P=0.241. Among APC, ARS, ans AARS only APC is accepted with P value 0.043 < 0.05. Both AVIF and AFVIF are acceptable due to value ≤ 5 and ideal ≤ 3.3. Average block VIF (AVIF)=1.000; Average full collinearity VIF (AFVIF)=1.000. Tenenhaus GoF (GoF)=0.028, below the small ≥ 0.1, medium.

All the data above indicate that the GoF of the model is too low. SPR, RSCR and, thus, SSR all are acceptable. Sympson's paradox ratio (SPR)=1.000 acceptable ≥ 0.7 and 1 is ideal value. R-squared contribution ratio (RSCR)=1.000 acceptable if ≥ 0.9 and ideal. Statistical suppression ratio (SSR)=1.000 acceptable ≥ 0.7. Hence Nonlinear bivariate causality direction ratio (NLBCDR)=0.667 is not acceptable because < 0.7.

Table 5
Structural Model Test

	Beta	P value of T Statistics
CG→IC	0.039	0.02*
CG→ P	-0.033	0.03*
IC→P	0.002	0.45
*Significant P < 0.05		

Sources: Data Analysis

Structural model test can be seen in Table 5 while the model of PLS output can also be seen in Figure 4. It shows that corporate governance (CG) has positive and significant effect on Intellectual Capital with Beta 0.039 and P value 0.03 (<0.05). For that reason, hypothesis 1 is accepted. Corporate Governance (CG) has negative and significant effect on performance with Beta -0.033 and P value 0.03 (<0.05). For that reason, hypothesis 2 is accepted.
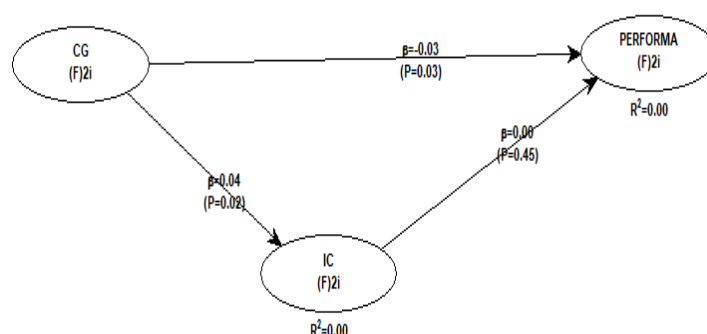

Figure 4
PLS Result

Intellectual Capital has no effect on Performance with Beta 0.002 and P value 0.45 (>0.05). It means that hypothesis 3 is rejected. Since hypothesis 3 is rejected, it also rejects hypotesis 4 that stated that intellectual capital is the mediating variables between corporate governance and the

company's performance.

Discussion

Hypothesis 1 is accepted, meaning that corporate governance using gender diversities and public ownership as proxy have effect on intellectual capital. Thus, it is still consistent with the previous study by Appuhami and Bhuyan (2015), arguing that the better corporate governance mechanism, the higher firms' intellectual capital.

Hypothesis 2 stated that corporate governance has effect on performance is also accepted. On the contrary to the prediction, the higher women proportion in companies' management and the higher public ownership will make lower performance due to the women nature to choose less risky project. This is against a common rule in finance that higher risk means higher return and better expected performance. The research by Faccio *et al.* (2016) also stated that the female CEOs have negative effect on companies' performance. The research by Alipour (2013) result can explain that due to lack of power to control the company's management, non institutional ownership has a negative effect on firm performance.

Hypothesis 3 that test the effect of intellectual capital on performance is rejected. This is contrary to the initial hypothesis development. Hence this result can be explained by Hamdan (2018) that intellectual capital is much more related to accounting-based performance rather than market-based performance measurement such as Tobins Q in this research.

Since hypothesis 3 is rejected, hypothesis 4 that attempts to confirm the mediating effect of Intellectual capital on the relation between proportions of corporate governance on company's performance is also rejected. In Baron and Kenny (1986) logics, there are possibilities that intellectual capital has mediating effect on the relation between corporate governance and the companies' performance can be tested if corporate governance has effect on intellectual capital and performance and also intellectual capital have effect on performance.

The results shows that there is negative effect of corporate governance on performance. Corporate governance also have positive effect on Intellectual Capital, hence intellectual capital do not always creates good companies performance. This is consistent with agency theory rather than Resources Based View. Sometimes, becoming profitable is different from becoming ethical. A company diverse its board of director gender and sell share to the public just to give minimum requirement for good corporate governance (GCG). This GCG is also forced to enhance intellectual capital of the companies on creating a good perception to the public. Hence, neither the GCG implementation nor intellectual capital could really increase the company's performance.

5. CONCLUSSION, LIMITATION, SUGGESTION

The results can be concluded into the following. Corporate governance has positive effect on intellectual capital. However, it has negative effect on company's performance. Another conclusion is the evidence showing that intellectual capital, in fact, has no effect on the company's performance. Finally, intellectual capital is not a mediator for the relationship between corporate governance and performance.

This study with some evidences but it also has limitation. For example, this study is on the lower level of R^2. The R^2 is important value to determine how big the impact of Exogent variables to Endogent Variables. Theferoe, for future study, it needs to explore more about other variables and indicators in the model to enhance the value of R^2.

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