

INTELLECTUAL CAPITAL DISCLOSURES AND AUDIT COMPONENTS IN NON-DISCRETIONARY INCOME

Saorce Elsy Hatane, Dewi Rembulan, dan Josua Tarigan

Accounting Department, Universitas Kristen Petra

elsyehat@petra.ac.id, dewirembulan100@gmail.com, josuat@petra.ac.id

Abstract. This study aims to determine the relationship of Intellectual Capital Disclosures (ICD), audit committee characteristics (size, gender, education, expertise), and audit quality toward the performance of the company measured through Non-Discretionary Net Income (NDNI) and Cash Flow Operation (CFO). This study is conducted on service listed companies in the Indonesia Stock Exchange (Service Industry) from 2010 to 2016 by panel data regression method analyzed using random effect model. The results of this study indicate that components in ICD have no significant impact on firm performance. Some components in the audit committees are found to have significant positive relationship towards financial performance. The empirical results suggest that ICD serve as a tool in aiding firm performance. A corporation should practice ICD extensively to enjoy the impact on the firm performance and value. Most research studies the relationship between intellectual capital disclosures and board diversity toward firm performance individually. The interaction of intellectual capital disclosures and audit committee characteristics is analyzed and studied to see whether audit committee characteristics is a factor that can help and improve the effectiveness of firm performance. Audit quality is also being analyzed and being taken into consideration as a variable. This is the first study to find the relationship towards the firm performance using NDNI and CFO as the dependent variables.

Keywords: Intellectual Capital Disclosures, audit committee, non-discretionary net income, cash flow operation

Abstrak. Penelitian ini bertujuan untuk menganalisa pengaruh *Intellectual Capital Disclosure* (ICD), karakteristik komite audit (ukuran, jenis kelamin, pendidikan, keahlian), dan kualitas audit terhadap kinerja perusahaan yang diukur melalui Non-Discretionary Net Income (NDNI) dan Cash Flow Operation (CFO). Penelitian ini dilakukan pada industri jasa yang terdaftar di Bursa Efek Indonesia dari 2010 hingga 2016 dengan metode regresi data panel, dianalisis menggunakan *random effect model*. Hasil penelitian ini menunjukkan bahwa komponen dalam ICD tidak memiliki pengaruh signifikan terhadap kinerja perusahaan. Beberapa komponen dalam komite audit ditemukan memiliki hubungan positif yang signifikan terhadap kinerja keuangan. Hasil empiris menunjukkan bahwa ICD berfungsi sebagai alat dalam membantu kinerja perusahaan. Perusahaan harus mempraktikkan ICD secara luas untuk mendapatkan manfaat pada kinerja dan nilai perusahaan. Sebagian besar penelitian mempelajari hubungan antara pengungkapan modal intelektual dan keragaman dewan terhadap kinerja perusahaan secara individual. Interaksi pengungkapan modal intelektual dan karakteristik komite audit dianalisis dan dipelajari untuk melihat apakah karakteristik komite audit merupakan faktor yang dapat membantu dan meningkatkan efektivitas kinerja perusahaan. Kualitas audit juga menjadi variabel bebas yang dianalisa dalam penelitian ini. Ini adalah studi pertama yang menemukan hubungan ICD terhadap kinerja perusahaan menggunakan NDNI dan CFO sebagai variabel tidak bebas.

Kata Kunci: *Intellectual Capital Disclosures*, komite audit, *non-discretionary net income*, *cash flow operation*

INTRODUCTION

For the past year, research regarding the intellectual capital is considered interesting by accounting researcher and practitioner. This is because of the rapid technological development and due to tight competition that forces corporation to change business method from labor work force to knowledge based (Yan, 2017). Business dynamics in 21st century is determined and controlled by intellectual elements or knowledge, therefore conventional model such as natural resources, financial resources, and other physical assets become less important compared to knowledge and technology based model and the demand has been shifted to increase the intellectual capital disclosure in large or medium size corporation (Yan, 2017).

Business people starts to realize that tangible asset is not the only component that plays roles in corporation ability in competing the market. Innovation, information system, organizational management and organization resources owned also affect the competition ability of corporation. Therefore, business organization keen to emphasize on the importance of knowledge based asset as one form of non-tangible asset. One of approach used to measure and computing knowledge based asset is though intellectual capital. The function of intellectual capital as an instrument to determine corporation value has attracted many academics and practitioner (Neysi *et al.*, 2012)

With proper method and with systematic disclosure of intellectual capital, it will make comprehensive information that therefore can reduce bias towards corporation value. Intellectual capital disclosure would provide useful information for the investors regarding anticipation of uncertainty in future profitability prospect and to help in measuring corporate value accurately. Intellectual Capital Disclosures (ICD) consists of three main components which are human capital, structural capital and relational capital. Information disclosure regarding the intellectual capital on the annual report are a form of voluntary disclosure. Voluntary disclosures practiced by a corporation could give some benefits for organizations, such as helping organizations in formulating strategies, in assessing the execution of the strategy, in assisting the diversification and expansion decisions and can be used as a basis for compensations and in communicating measurement to external stakeholders. It will also help in terms of enhancing the transparency due to there is a disclosure of intangible assets rather than only tangible assets. It will also increase the confidence of the stakeholders and it helps in supporting the long term vision of an organization (Wagiciengo and Belal, 2012).

In recent times, besides intellectual capital disclosures, profitability has become the main long time discussion held by any organizations. Profitability is seen as one of the main indicator used by investors in assessing the transparency of a corporation (Souissi and Khlif, 2012). Profitability is one of indicators often being used by investors in assessing the firm performance. Khlif and Souissi (2010) show that there is a positive relationship between intellectual capital disclosures and profitability in which it is being divided into two theoretical arguments. As suggested by the agency theory, there can be a conflict of interest between the agent and principals in an organization, therefore manager as the agent of the corporation shows high performance to convince the shareholders regarding their superior abilities. Managers will likely to do voluntary disclosures to achieve and gain confidence form the investors. Second argument is that corporations with high profitability level have incentives to disclose information more to differentiate themselves from other corporations.

Some previous studies used the components of board of directors, which is part of corporate governance, as an independent variable along with ICD in influencing financial performance. One component in the board of directors used is the audit committee. This study examines audit committee indicators, which consist of the size of the audit committee and diversifications of the audit committee. This research is a relatively new study in using educational background, audit

committee expertise, and the quality of external auditors as independent variables tested together with ICD. Some previous studies, in general, tested the effect of ICD on company profitability by using relatively general measures of profitability, such as ROA and ROE. In measuring the firm performance, this study applies the non-discretionary profits that has been examined by Siregar and Utama (2008). This study focuses on using Non-Discretionary Net Income (NDNI) and Cash Flow Operation (CFO). According to Siregar and Utama (2008), NDNI and CFO are the most reliable profit components because both are free from accrual elements.

LITERATURE REVIEW

Intellectual Capital Disclosure. Technology development and knowledge force corporation to have competitive advantage in dealing with global competition. Competitive advantage can be knowledge, technology, human capital, and many more that is included in intellectual capital components. There are varieties of definitions of intellectual capital provided by the expert. Intellectual capital is defined as the possession of knowledge, information, intellectual property and applied experience that can be used to create wealth for the corporation (Branco *et al.*, 2010)

From the derived definitions mentioned above, intellectual capital can be defined as intangible wealth that encompass knowledge, technology, employee, management process in an organization which is a competitive advantage in an organization and is useful in operational activities including the creation of corporate value. Intellectual capital disclosure differentiates disclosure into mandatory disclosure and voluntary disclosure. Mandatory disclosure is the disclosure required by the applicable standards or regulations set by the competent authority. While voluntary disclosure is a disclosure that is not required by applicable regulations. Both types of disclosure can be found in the corporation's financial statements and annual reports.

Intellectual capital disclosure to date is a voluntary disclosure. The absence of official standards or regulations governing intellectual capital disclosure makes it difficult to identify what items are considered as the components of intellectual capital. This also causes the corporation's having low awareness in disclosing its own intellectual capital as a competitive company. Empirical evidence shows that there is correlation between intellectual capital disclosures to profitability. Profitability is still considered as one of the most important component that is used by investors in assessing the transparency of a corporation (Souissi and Khlif, 2012). It is explained that there is a positive relationship between intellectual capital disclosure and profitability. This can be justified by using the basis of two theoretical arguments. The first argument is that as suggested by the agency theory, the higher the performance of corporation will cause managers to become easier in convincing shareholders about their superior managerial skills. Thus the manager will likely to do voluntary disclosure in order to be able to obtain higher degrees of confidence from the investors. The second argument is that profitable corporations will have incentives to disclose more information to make them self-identifiable and stand out from the less profitable corporation. Meanwhile the managers in the profitable corporation will likely to obtain the information for their own benefit such as continuous career development and positions in the corporation. On the other side, there can be adverse effect due to the high profit level, as this can lead to political costs. Corporations with high profitability level will likely to reduce their political costs by doing voluntary disclosure.

This study uses checklist from Yan (2017) which comprises of 37 components. 17 components in human capital, 10 components each on structural capital and relational capital. Human capital consists of employee education, vocational qualification, employee engagement, union activity, employee thanked, employee features, employee involvement in the community, employee training, employee development, succession planning, innovative skills, equity issues, employee safety and health, skills/know how, employee work related competence, expert seniority, and senior

executive performance and results. Structural capital consists of management philosophy, corporate culture, management process, achievement, information systems, networking systems, intellectual property, organization flexibility, organizational learning and research and development. Relational capital consists of brands, customers, company names, favorable contracts, market share, distribution channels, business collaborations, licensing agreements, franchising agreements and financial relations. The ICD checklists from Yan (2017) is chosen as it is believed the components are representing the sample study being analyzed in this study and there are still few research using the checklist as it is still new. Besides, there are more variation of result contributes using this checklist. Thus it leads to the formation of the following hypothesis:

H1a: Human capital disclosure has positive impact towards NDNI

H1b: Human capital disclosure has positive impact towards CFO

H1c: Structural capital disclosure has positive impact towards NDNI

H1d: Structural capital disclosure has positive impact towards CFO

H1e: Relational capital disclosure has positive impact towards NDNI

H1f: Relational capital disclosure has positive impact towards CFO

Firm Performance. Best performance of corporation's operation can be explained through the financial performance thus that corporation's performance often referred to financial performance (Combs *et al.*, 2005). Financial performance is defined as a measurement of the success of corporation's performance that explains the performance on different period of time (Al-Matari *et al.*, 2014). Profitability is often being related with firm performance. Ratio used in this study to compute the firm performance is profitability ratio. Profitability ratio is used to measure how efficient a corporation in using their resources and conducting its own operational activity, which focuses on net income. Profitability ratio has the purpose to measure the efficiency of corporation activity and ability in making profit. Besides that, profitability ratio also has the purpose in measuring affectivity of management that is reflected through the investment return through the sales activities. Profitability ratio becomes main measurement used to evaluate the financial performance of a corporation in the investment activity that is commonly used by the investors.

In measuring the firm performance, this study uses the research study previously done by Shawtari *et al.*, (2017). This study uses three measurements as the future profitability. This study focuses on using Non-Discretionary Net Income (NDNI) and Cash Flow Operation (CFO). NDNI and CFO is use due to both of the variable does not contain accrual discretionary component, thus that they will not have correlation with income. NDNI and CFO are believed to be the most reliable component due to not having accrual ownership component inside it. Measurement of future profitability will be listed out as below:

CFO_{t+1} = One year ahead cash flows from operation

$NDNI_{t+1}$ = One year ahead non-discretionary net income (EARN-DAC)

Audit Committee Characteristics. Audit committee used in this research is measured using several indicators, such as size, gender, expertise and educational background from the audit committee established in each corporation. Regarding this, the quantity of the audit committee member is considered as a factor that is significantly determining the financial report quality. According to financial services authority rules numbered 55/POJK.04/2015, audit committee must comprise of at least three members that originating from independent commissionaires and must be external party of issuer and public company. An independent commissionaire chairs the audit committee. Independent committee acts independently in doing their task and responsibility (IFC and OJK, 2014). Agency theory has explained that audit committee can be a solution as help for profit generation in a corporation, through the voluntary disclosure of intellectual capital disclosure thus

that corporation can continuously create competitive advantage. The quantity of audit committee can have impact on the audit quality resulted and financial performance creation of corporation.

Empirical result shows an evidence that there is a relationship between audit committee and profitability. A study done by Salehi *et al.*, (2018) shows that there is significant relationship between audit committee financial expertise and profitability. Suherman (2017) concludes that the existence of female directors can increase cash holdings, because they tend to be more careful in investing. Regarding corporate governance, the audit committee has shown an important role in disclosing corporate scandals, including earnings management (Klein, 2002). In line with the economic theory of feminisms, female audit committee members are believed to have a more neutral attitude in giving moral judgments (Thiruvadi and Huang, 2011).

There are 4 types of audit committee characteristics discussed in this study, which is the size, gender diversity, education level, and expertise. Audit Quality will also be used as a proxy. Therefore, hypotheses are made:

- H2a: Audit Committee size has positive impact towards NDNI
- H2b: Audit Committee size has positive impact towards CFO
- H3a: Audit Committee gender has positive impact towards NDNI
- H3b: Audit Committee gender has positive impact towards CFO
- H4a: Audit Committee education has positive impact towards NDNI
- H4b: Audit Committee education has positive impacts towards CFO
- H5a: Audit Committee expertise has positive impact towards NDNI
- H5b: Audit Committee expertise has positive impacts towards CFO

Audit Quality. According to Francis *et al.*. (1999), audit quality is the joint probability in which an auditor will find and report any violation existence in client's accounting system. Audit quality definition can have different interpretation depending on the client or auditor perspective. The owner of corporation including the user of financial statement argued that audit quality will occur when auditor can provide assurance regarding the materiality and misstatement level of the financial statement. On the other hand, from the perspective of auditor, audit quality occurs if the auditor able to work according to the standard existed and able to assess the audit business risk with the purpose to minimize the risk and to avoid loss of reputation (Klein, 2002).

Audit quality is believed to have impact on future profitability, as corporation with higher profit likely to be audited by big 4 public accounting firm (Siregar and Utama, 2008). Therefore, the hypotheses for the relationship between audit quality and firm performance are postulated as follows:

- H6a: Audit Quality has positive impact towards NDNI
- H6b: Audit Quality has positive impact towards CFO

METHOD

Sample. Sample used in this study are corporations listed in Indonesian Stock Exchange in the period of 2010 – 2016. The corporations are categorized under service industries consisting of property, real estate and building construction, infrastructure, utilities and transportation, and trade, services and investment. This study utilizes secondary data extracted from annual reports, Bloomberg and other reliable sources.

Table 1. Summary of the sample observed

<i>Sampling Criteria</i>	<i>No. of Companies</i>
Number of companies listed in IDX during 2010-2016	130
Number of companies that do not publish financial statements	(0)
Number of financial companies	(48)
Number of companies with financial statements not complete	(16)
Total sample	66
Total number of years observed	7
Total number of available sample for the use of analysis	462

Eventually, as seen in Table 1, total sample observed that meets the criteria for this study is 66 companies for 7 years, which is a total of 462 firm-year.

Dependent variables. There are two dependent variables used in this study. Non-discretionary net income as dependent variable reflects the real earnings that can be obtained by a corporation, as it does not include the accrual components in which management can manage. The complete formula is as follows:

$$NDNI_{t+1} = EARN_{t+1} - DAC_{t+1}$$

All variable is scaled with total assets. Discretionary accrual itself is obtained from Modified Jones Model and can be seen from previous study by Shawtari *et al.*, (2017). The complete formula is as follows:

$$\frac{TACC_t}{A_{t-1}} = \alpha_1 \frac{1}{A_{t-1}} + \alpha_2 \frac{(\Delta REV_t - \Delta REC_t)}{A_{t-1}} + \alpha_3 \frac{PPE_t}{A_{t-1}} + \varepsilon_t$$

- $TACC_t$ = Total accruals in year t divided by total assets in year $t - 1$,
- ΔREV_t = Revenues in year t less revenues in year $t - 1$,
- ΔREC_t = Delta revenues in year t less delta net receivables in year $t - 1$,
- PPE_t = Gross property plant and equipment in year t ,
- A_{t-1} = Total assets in year $t - 1$,
- $\alpha_1, \alpha_2,$ = Parameters to be estimated, namely alphas,
- and α_3
- ε_t = Residuals in year t

Second dependent variable used in this study is Cash Flow Operation (CFO), as it can reflect the real earnings of corporation's firm performance. CFO is obtained form statement of cash flow under operating section that did not have accrual components in it, which can be managed by the management of the corporation. The figure itself is scaled with total assets.

Independent Variables. This research uses several variables as independent variables which are intellectual capital disclosures index measured using Yan (2017) checklist, audit committee characteristics (size, gender, education and expertise) and audit quality. ICD is measured using 37 components in the checklist. The complete formula is as follows:

$$ICDi = \frac{\sum Di}{M} \times 100\%$$

Audit committee characteristics is derived into 4 components which are audit committee size (ACsize), audit committee gender (ACgender), audit committee education (ACedu) and audit committee expertise (ACexpert). ACsize can play significant roles as audit committee strongly

influences the audit committee thus that the size of the audit committee members (Fakhari and Pitenoai, 2017). ACsize can be computed as follows:

$$ACsize = \sum \text{Audit Committee Member}$$

Previous research found a significant effect of women's audit committees in reducing earnings management (Thiruvadi and Huang, 2011). The study measured the variable female audit committee with a formula for percentage of female members to total number of members. Therefore, Audit committee gender can be measured as follows:

$$ACgender = \frac{\sum \text{Female Committee Member}}{\sum \text{Audit Committee Member}}$$

Audit committee expertise is audit committee member with financial or accounting skills. The financial or accounting skills owned by the member influenced the financial report quality. (Fakhari and Pitenoai, 2017). Therefore, audit committee expertise can be measured as follows:

$$ACexpertise = \frac{\sum \text{Audit Committee with finance or accounting skill}}{\sum \text{Audit Committee Member}}$$

Krishnan (2003) argues that firms audited by reputable auditing firms (the Big 6 on that period) have less discretionary accruals, thus audit quality has an important part in pressuring opportunistic earnings management. Audit quality in this research is measured with the method of giving score 1 for corporation audited by big 4 public accounting firms and score of 0 if it not being audited by big 4 accounting firm.

Control variables. Control variables are variables that can have impact on dependent variable. Control variable is used to aid on the research in order to find whether there is correlation between dependent variable and independent variable. Control variable also act to balance the findings on the research. Usually, variable with significant correlation with the dependent variable. This research uses firm size as the control variable. This is because, there are many research uses firm size as the control variables such as García-Sánchez *et al.*, (2017) and Ahangar and Shah (2017). Table 2 presents all variable definitions and data source used.

Table 2. Variable definitions and data source

<i>Variables</i>	<i>Definitions</i>	<i>Data Source</i>
Non-Discretionary Income (NDNI)	Net Difference between earnings and discretionary accrual	Annual Report and Bloomberg
Cash Flow Operation (CFO)	Percentage of net income over total equity	Annual Report and Bloomberg
Audit committee size (ACsize)	Number of audit committee member in an audit committee	Annual Report
Audit committee gender (ACgender)	Number of audit committee member with female member	Annual Report
Audit committee education (ACedu)	Number of audit committee member with doctorate degree	Annual report
Audit committee expertise (ACexpert)	Number of audit committee member with finance and accounting background	Annual report
Audit Quality (ACqual)	Index score of 1 and 0 with & without the audit from big 4 public accounting firms	Annual report
Firm Size (SIZE)	Natural log of total assets	Annual Report and Bloomberg

Research Model. This study would like to show whether ICD is able to influence firm's financial performance in a positive, negative, or neutral way as well as the role of audit committee

characteristics (size, gender, education, and expertise) and audit quality as independent variable. An additional analysis is done by adding control variables, such as firm size in strengthening the relationship of ICD towards Firm Performance which are represented by NDNI and CFO. This study uses two linear regression models which are expressed in the equation below,

$$NDNI_{it+1} = a_0 + \beta_1 HCD_{it} + \beta_2 RCD_{it} + \beta_3 SCD_{it} + \beta_4 ACsize_{it} + \beta_5 ACgender_{it} + \beta_6 ACedu_{it} + \beta_7 ACexpert_{it} + \beta_8 ACQual_{it} + \beta_9 Fsize_{it} + \varepsilon_{it}$$

$$CFO_{it+1} = a_0 + \beta_1 HCD_{it} + \beta_2 RCD_{it} + \beta_3 SCD_{it} + \beta_4 ACsize_{it} + \beta_5 ACgender_{it} + \beta_6 ACedu_{it} + \beta_7 ACexpert_{it} + \beta_8 ACQual_{it} + \beta_9 Fsize_{it} + \varepsilon_{it}$$

Explanation:

$NDNI_{t+1}$	= One year ahead Non – discretionary Net Income
CFO_{t+1}	= One year ahead Cash Flow Operation
HCD	= Human Capital Disclosure
RCD	= Relational Capital Disclosure
SCD	= Structural Capital Disclosure
ACsize	= Audit Committee Size
ACgender	= Audit Committee Gender
ACedu	= Audit Committee Education
ACexpert	= Audit Committee Expertise
ACqual	= Audit Quality
Fsize	= Firm Size
a_0	= Constant linear of regression
ε_{it}	= Error
$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8, \beta_9$	= Regression Coefficient of each Variable

RESULTS AND DISCUSSION

Descriptive Statistics. Table 3 provides the descriptive statistics of each variable, comprising the mean, standard deviation, minimum, and maximum values. It reports the values for 66 firms with 7 years' time period. From Table 3, dependent variable NDNI(t+1) has minimum score of -1.4196 which is obtained from AIMS in 2013 and has maximum score of 1.1681 from UNTR in 2011. The second dependent variable which is CFO has minimum score of -1.8482 from BMSR (2012). The independent variable, HCD ratio has minimum score of 0.058823529 which is obtained from AMRT in 2010 and maximum score of 11.16851085 which is obtained from MTDL in 2010. The average for HCD is 5.6136671895, which indicates that the corporation discloses items in checklist for 56%.

Table 3. Descriptive Statistics

Variable	Mean	S.D	Min	Max
NDNI (t+1)	-0.084710	0.56968	-5.6768	5.7142
CFO (t+1)	0.10759	0.21761	-1.8482	1.2071
HCD	0.43201	0.22017	0.17764	0.94118
SCD	0.47165	0.24785	0.1	1
RCD	0.63117	0.24438	0.1	1
ACsize	2.9697	0.32125	2	4
ACeducation	0.31169	0.48203	0	2
ACgender	0.07864	0.21471	0	1
ACexpertise	1.6190	0.93724	0	4
FSize	11.2361	1.61232	6.1096	12.7427

The independent variable, RCD ratio has minimum score of 0.1 The average for RCD is 0.63117, which indicates that in average service listed corporation disclose 63.11% of the items in the checklist. The average for SCD is 0.47165, which indicates that in average, service listed corporation disclose 47.16% of the item in the checklist. ACsize has minimum score of 2 and maximum score of 4. The average for ACsize is 3, which indicates that the most of service listed corporation has followed and fulfilled the regulation set by OJK. The ACsize 2 indicates that there are corporations that have not fulfilled the regulation, and maximum score of 4 indicates that there are some corporations which already followed the regulations. ACgender ratio has minimum score of 0 and maximum score of 1. The percentage of female member present in the audit committee is amounted of 15%. As it can be seen, most of the corporations did not have female audit committee member and only few are having female member in the audit committee.

ACexpertise ratio has minimum score of 0 and maximum score of 4. This indicates that there are corporations which do not see the importance of having expertise in the committee and in the same time there are corporations that are aware of the benefits from using expert. ACqual has minimum score of 0 and it has maximum score of 1 which indicates that there are still few corporations which use big 4 public accounting firms for auditing purpose. The control variables, Fsize has average of 13, minimum value of 11.125 and maximum value of 14.418.

Table 4. Feasibility Tests

Variables	Collinearity	Variables	Collinearity
HCD	1.925	ACgender	1.108
SCD	1.734	ACedu	1.247
RCD	1.678	ACexpertise	1.582
ACsize	1.117	ACqual	1.337
Fsize	1.365		
Dependent Variables		NDNI	CFO
Asymptotic test statistic: Chi-square		20.9223	23.0423
P-Value		0.012999	0.00610193
corr(y,yhat)^2		0.164567	0.102568

Feasibility and hypotheses tests are carried out using panel data regression, random effect model, with significancy level of 10%. Table 4 shows that the models have passed the collinearity test, since all the collinearity values are less than 10. The Model feasibility test is performed with F-test (Asymptotic test statistic: Chi-square) in order to see whether the independent variables can influence the dependent variable simultaneously. The result shows that the models have p-values less than 5% standard errors. Regression tests show the determinant coefficient (corr(y,yhat)^2) of 16.45% for NDNI and 10.25% for CFO.

Hypotheses Test Results. The hypotheses test results are summarized in the Table 5, it shows the initial hypothesis and its relationship compared to the t-test result along with the decision of acceptance and rejection of the hypotheses. From the total of 16 hypotheses, only 5 are accepted, which are the positive relationship between HCD and NDNI, positive relationship between RCD and NDNI, positive relationship between RCD and CFO, positive relationship between Audit Committee Size and CFO, and positive relationship between Audit Committee Gender and CFO, and positive relationship between Audit Committee Quality and CFO.

Based on the regression result, it is found that HCD have significant relationship with NDNI, hence **hypothesis 1a is accepted**. This result is consistent with (Bidaki and Hejazi, 2014) in which the authors find the significant positive relationship between Human Capital and profitability of the corporation. This has an implication that human capital plays great role in enhancing the profitability of a corporation. On the other side, HCD does not have significant impact on NDNI and thus **hypothesis 1b is rejected**.

This result is consistent with Boujelben and Fedhila (2011) that failed to find the relationship between the intellectual component in human capital specifically the training activities and future cash flow operation. The research has been conducted in three-lagged period and still failed to find the relationship. The results are contrast with the basic assumption that human capital items such as training activities supposed to support the sustainability of a corporation and enhance the human capital. The result form this research might not find positive relationship with CFO due to the inefficiency and ineffectiveness of the training activities given and implemented in the corporation derived from the service listed corporation. This can be seen from Figure 1.

Table 5. Regression and Hypothesis Results

Variables	NDNI	p-values	Hypotheses	CFO	p-values	Hypotheses
Constanta	0.0825818	0.0808*		0.0107859	0.9707	
HCD	0.101102	0.0808*	H1a accepted	-0.0548706	0.2328	H1b rejected
RCD	0.0276887	0.0134**	H1c accepted	0.0708589	0.0504*	H1d accepted
SCD	0.0187018	0.6639	H1e rejected	-0.0166704	0.6992	H1f rejected
Acsiz	-0.00412115	0.6379	H2a rejected	0.0498754	0.7636	H2b rejected
ACgender	-0.289949	0.5380	H3a rejected	-0.200008	0.0015**	H3b rejected
Acedu	0.0103109	0.5378	H4a rejected	0.0394632	0.1533	H4b rejected
ACexpert	0.0202687	0.1185	H5a rejected	0.00212371	0.9153	H5b rejected
Acqual	0.0660668	0.4583	H6a rejected	0.0705390	0.0491**	H6b accepted
Fsize	-0.0153161	0.0350**	Accepted	-0.00651103	0.2395	Rejected

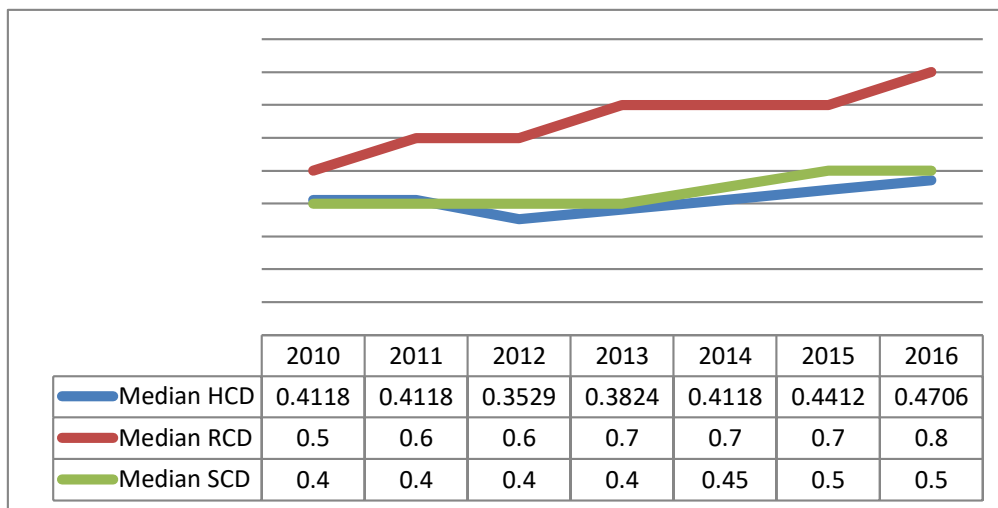


Figure 1. The Average Disclosure of HC, RC, and SC

The median of the human capital disclosure in 2010 is 0.4418 which means that in average there are 44.18% corporation disclose their human capital activities. Over the period of 5 years, there is an increasing trend of the disclosure practice, however only accounted to a total of 5.88%. However, the percentage of disclosure is still below the average of 50%. There are still 52.94% of corporation in the sample that did not disclose human capital. This result support with the hypothesis result that fails to find positive correlation between HCD and NDNI.

Another interpretation from the Figure1 is that it can be seen that among the three components of intellectual capital disclosures which are comprised of HCD, RCD, and SCD, HCD is the component with least disclosures practice followed by SCD and the highest disclosure practice was found on the RCD. This result supports the hypothesis 1b that HCD has positive impacts towards NDNI.

Hypothesis 1c is accepted as the regression shows there is significant relationship between RCD and NDNI. This result is consistent with the previous study done by Kiattikulwattana (2014) that mentions there is positive relationship between RCD and the firm performance regarding the income that can be generated by corporation. Relational capital are discussing about how a corporation maintains their relationship with several parties that help the business core activities, specifically maintaining relationship with suppliers and customers that can help corporation obtain income and one of the component is from the sales generation. Corporation who maintains strong relationship with the customer and supplies are believed to have better bargaining power in which sales volume would likely to increase as a result of positive relationship. This also means that sales can be considered as one component that can help representing the relational capital significant positive relationship towards NDNI.

Hypothesis 1d is accepted as the regression shows positive and significant relationship between NDNI and CFO. (Kiattikulwattana, 2014) in which the study uttered the relationship between the relational capital especially in the relationship between customers and suppliers in supporting corporation to obtain legitimacy from the society by improving the bargain power of the corporation and also decreasing the opportunistic behavior by the customers and suppliers. Peng and Luo (2000) also agree that maintaining relationship with the customer and supplier can help in the bargaining power that can lead corporation to have lower cost of production. Kiattikulwattana (2014) research

result shows that there is a positive relationship between RCD and CFO which is also same with the hypothesis 1d. The reason behind the positive relationship might be because of the sales quantity and the performance of the corporation regarding its core business. CFO is often used by corporation in measuring the corporation performance. One of the reason is because CFO is often seen by corporation as a strong tool in aiding the prediction of future profitability.

Research result shows that there is no correlation between SCD and NDNI, therefore **hypothesis 1e is rejected**. This is consistent with previous research that also fails to find positive relationship between SCD and firm performance (Hejazi *et al.*, 2016). It is founded that there are no significant relationship between SCD with profitability and value. The reason for the insignificant relationship might be due to the country setting which is used in this research using Indonesian as the sample and focuses on the service listed sector. Structural capital has components of Research and Development and advertising activity components that plays big role in service listed corporations. In order to enhance and have additional value added for the corporation, investment in R&D and extensive advertising exposure might help corporation achieve better performance. However, the use and application of R&D which are often costly are still not being used widely by many Indonesian corporations. On the contrary, advertising activity is also considered costly, however the benefit of doing advertising might be seen in following time after the activities was releases, differ with R&D expenditures in which the benefit might not been obtained since the R&D is the first stage of planning, and planning might not always meet the expectation. The planning stage is also sometimes quite time consuming and therefore corporation will less likely to do research and development activities. High cost in the beginning period while low income generated through business activities might cause the profitability of the corporation low which one of the component that might be affected is through its net profit. This is also one reason why structural capital has not been applied extensively. This can be seen by the data analysis conducted in this study. Figure 2 shows the average ratio of structural capital disclosed by the corporation in service-listed sector.

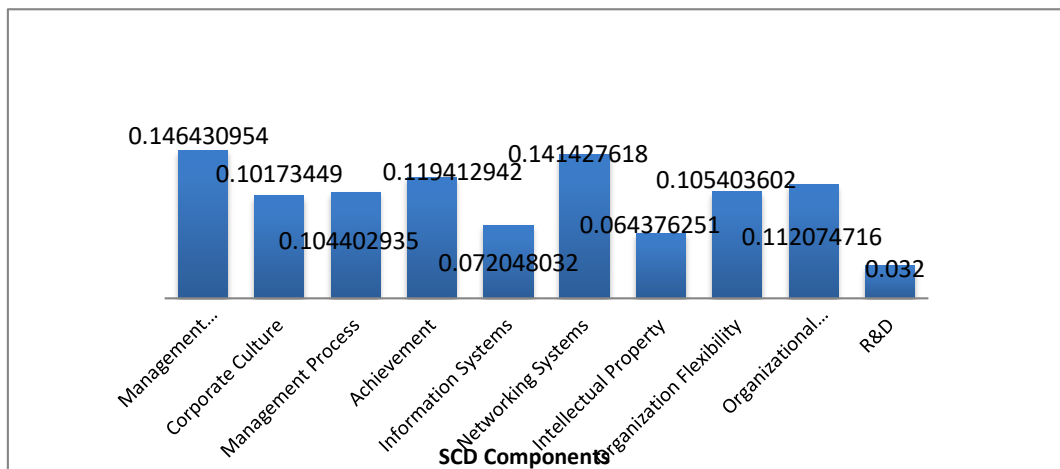


Figure 2. Percentage of SCD based on Individual Components (2010-2016)

Similar to hypothesis 1e, **hypothesis 1f is rejected** as it cannot show there is a significant relationship between SCD and CFO. This result is consistent with previous study from (Hejazi *et al.*, 2016) in which the research mentioned that there is no significant positive relationship between relational capital and firm performance in terms of profitability. Cash flow operation is the amount of cash generated by operational activities of a corporation. Cash flow operation is needed by corporation to be able to sustain the operational activities, this is because there is a requirement for a

corporation to be able to fulfill its expenses regarding the day to day operational activities. Without enough cash, corporation operational activity might be halted. Cash flow operation often comes from the generation of revenue by the corporation. Previous figure from hypothesis 1e has shown that there are a total of 10 components inside the RCD. The figure shows that from total of 2998 score of disclosures from 2010 – 2016, there are a total score of 98 which is the lowest disclosures being done compared to the other 9 components which is equivalent to 0.032% and this figure is belong to the components of R&D.

Hypotheses 2a and 2b are rejected as no evidence was found that can correlate between audit committee size and NDNI. This result is in line with (Kipkoech and Rono, 2016) in which the result of the research study shown that the bigger the size of the audit committee, the corporation will face more risk and pressures from the other audit committee member through their opinion and will likely to follow the other audit committee member opinion without giving questioning the opinion or in giving argumentation. This will cause potential error for the corporation. The decision in the audit committee might not be best for the corporation and this would likely to cause the profitability figure drop or not at the best interest for the corporation in achieving maximal profitability. Net Income is one of important indicator measured by corporation in assessing its performance. Specifically, Net Income without the discretionary accrual component which can be said that the income is real and reflected as it stated financially.

According to the regression result, it can be concluded that Audit Committee Gender (ACgender) has insignificant relationship with the Non-Discretionary Net Income (NDNI). From the result, it can be concluded that **hypothesis 3a is rejected**. This result is consistent with the previous study done by Wang and Clift (2009) in which the result shows that there is no relationship between the gender diversity with corporation performance. In addition, this study found the significant negative influence of the presence of female director in audit committee with the CFO. Thus, **hypothesis 3b is rejected**. Kipkoech and Rono (2016) also reported that there is significant negative relationship between the gender diversity in audit committee with the firm performance. This is in line with the previous study done by Alqatamin (2018) in which it is founded that there is significant relationship between audit committee gender diversity and firm performance. The results in this study do not support the study of Thiruvadi and Huang (2011) that found positive effect of ACgender in reducing earning management practices. The reason for this result might be driven by the low number of female members in the sample; and woman has not been seen as a serious matter, although it is believed that there is a probability that female member can give additional benefits outreaching the male member in the audit committee

Hypothesis 4a and 4b are rejected as no evidence was found that are able to correlate between Audit Committee Education (ACedu) with Non-Discretionary Net Income (NDNI) and Cash Flow Operation (CFO). This result is in line with (Darmadi, 2013) result in which the author fails to find the relationship between the postgraduate degrees such as master degree and doctorate degree towards the firm performance is not correlated. The reason behind the insignificant in this study is might because of the education level in Indonesia which is in developing country context aren't sufficiently enough compared to the education provided in developing country. Study by Darmadi (2013) also divided the level of degree obtained in developing country and developed country and it fails to find the positive relationship between the education levels obtained in developing country with the firm performance. In this study, education level that is being highlighted is the level of education of audit committee member who holds doctorate degree. In the data analysis it is also founded that there are few members who hold doctorate degree as their education background. This can be seen from the Figure 3 detailing the result of the data processing. There is decreasing trend

(322 to 136 to 4) in the number of audit committee member with doctorate degree. Darmadi (2013) also highlighted that often times, top management skills are not necessarily obtained from the result of high educational background. There are several unobserved characteristics in the audit committee such as the leadership skills that might also contributes in the result attributed to firm performance.

Hypothesis 5a and 5b are rejected as no evidence was found that are able to correlate between Audit Committee Expertise with NDNI. And CFO. This result is in line with the previous study done by (Kallamu and Saat, 2015) in which the author fails to find the correlation between financial expertise and firm performance. The reason behind this insignificant relationship might be because of the nature of the business and the size of the corporation. Small sized corporation with simple operations will likely not to require audit committee with financial or accounting expertise. Differ with large sized corporation that has complex business operations and they might need to have member with financial or accounting expertise.

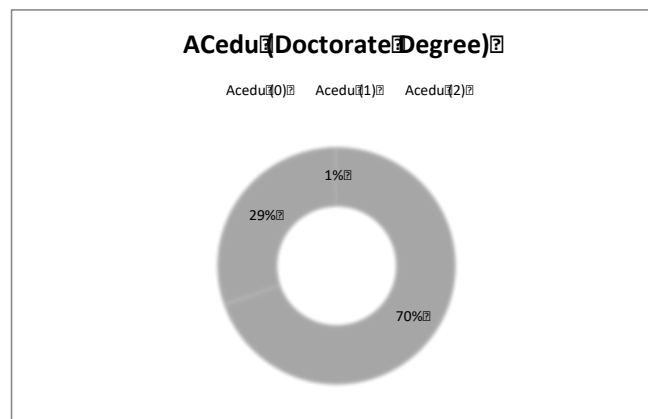


Figure 3. Audit Committee Education Degree

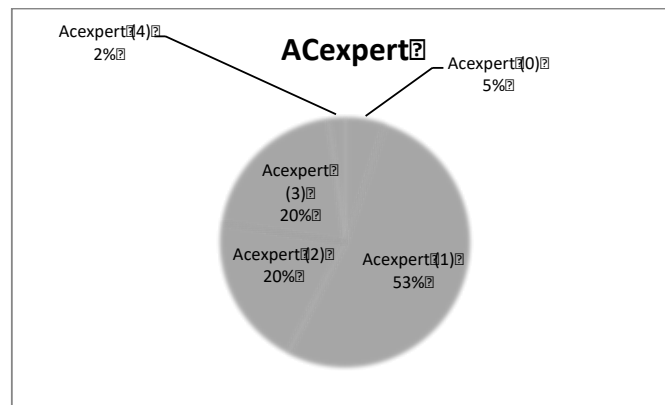


Figure 4. The Audit Committee Expertise in Business, Finance and Accounting

From the Figure 4, it is shown that on average, 53% of corporation has expert in the committee. However, there are still some corporations which do not have expert in the audit committee which is not in line with the regulations of OJK. There are 24 observations from 6 companies that have no financial expert in the audit committee members, especially in the periods before the year of 2014. The reason behind the insignificance relationship might be because of the

cost of hiring the member with such expertise are high and the benefit might have been offset by the high cost of obtaining the member. Nevertheless, there is no correlation found between audit committee expertise and firm performance.

Hypothesis 6a is rejected as no evidence was found that are able to correlate between Audit Committee Quality and NDNI. This result is in line with the previous study done by Shawtari *et al.*, (2017) and Siregar and Utama (2008), in which the result of the studies failed to find significant positive correlation between ACqual and firm performance. The reason behind the insignificant correlation might be because of the usage of audit service from big 4 public accounting firm are found more in large sized corporation compared to small sized corporation. However, the profitability figure in the financial statement cannot be measured only nominally however must be in ratio, this is because larger size corporation will have the tendency to obtain higher figure of net income compared to small sized corporation. Another reason is that audit corporation is inappropriate to be used as a proxy for audit quality. Many previous research measures using audit fees and audit hours as a proxy, however such information is not disclosed in the annual report therefore, it cannot be use. On contrary **hypothesis 6b is accepted** as there is significant relationship found between ACqual and firm performance. This result is in line with previous study of Al Ani *et al.*, (2015) in which the results shows that there is significant positive relationship between the audit quality and the firm performance.

CONCLUSION

The objective goal of this study is to analyze the relationship between intellectual capital disclosures, audit committee characteristics and audit quality towards firm performance. The firm performance used in this study are categorized into two parts which are Non-Discretionary Net Income (NDNI) and Cash Flow Operation (CFO). The research subjects used in this research study are derived from Indonesian Listed Corporations specifically in service industry excluding the financial sectors in the period of 2010-2016. After applying several criteria in the sample population, the total sample consists of a 66 corporations, a total of 462 firm-year observations available for this study. The data for this study is taken from Bloomberg Terminal Database and corporation's annual reports. Furthermore, the regression result in this study shows that NDNI and CFO, which are the part of profitability, are highly significant on Relational Capital Disclosure which is a component of Intellectual Capital Disclosure. Therefore, it implies that NDNI and CFO are components that have direct impact for stakeholders in determining the firm performance and as a basis used for the investor in making decision whether they will invest in the firm or not. Relational Capital Disclosures discuss about how corporation can manage its relationships especially with supplier and customer which can have direct impact on the corporation through the positive relationship that can be seen through sales volume and also price negotiation. This causes management to put attention on managing the firm profitability by setting strategies that could enhance the overall financial performance. For the control variables, the significant result is that firm size could enhance better the CFO, while this research does not found any significant relationship with NDNI. This condition implies that investors tend to have a glance on CFO as a true reflection for the companies' size.

Limitation and Suggestion. In conducting this study, there are some limitations that are encountered. There are several suggestions uttered that is hoped to give reference for improving better future research. This research failed to find the correlation of structural capital disclosure, audit committee size, audit committee education, audit committee gender, audit committee expertise and audit quality with NDNI. Looking at the regression model's determinant coefficient (R^2) which is

only 16.45%, this indicates that there are still many other factors outside this research scope that can actually influence NDNI. Future research might want to study other factors that can affect firm performance, for example other proxies of corporate governance and future profitability. While intellectual capital disclosures and audit committee are common areas of study, the dependent variables (NDNI and CFO) are not commonly used, and so evidences for acceptance or disapproval are hard to be found in the previous journal. Therefore, more research can also be done in this topic to find more evidence. This study only observes audit diversity in terms of numbers, while there is more important aspect, i.e. quality. Future research might want to explore more about this topic, for example by finding the appropriate proxy for the audit quality such as audit fees, auditor tenure, and audit working hours. Future studies might focus on using other countries as sample population.

REFERENCES

- Ahangar, N., & Shah, F. (2017). Working capital management, firm performance and financial constraints. *Asia-Pacific Journal of Business Administration*, 9(3), 206-219.
- Al Ani, M. K., & Dhofar, Z. M. (2015). Audit quality and firm performance, Omani experience. *European Journal of Economics, Finance and Administrative Sciences*, 74, 13-23.
- Al-Matari, E. M., Al-Swidi, A.K., & Fadzil, F. H. B. (2014). The measurements of firm's performance's dimensions. *Asian Journal of Finance & Accounting*, 6(1), 24-49.
- Alqatamin, R. (2018). Audit committee effectiveness and company performance: evidence from Jordan. *Accounting and Finance Research*, 7(2), 48. doi: 10.5430/afr.v7n2p48
- Bidaki, S., & Hejazi, R. (2014). Effects of profitability on the Intellectual Capital Disclosure in listed Companies in Tehran Stock Exchange. *International journal of education and applied sciences*, 1(5), 248- 255.
- Boujelben, S., & Fedhila, H. (2011). The effects of intangible investments on future OCF. *Journal of Intellectual Capital*, 12(4), 480 – 494. doi: 10.1108/14691931111181689
- Branco, M. C., Delgado, C., Sá, M., & Sousa, C. (2010). An analysis of intellectual capital disclosure by Portuguese companies. *Euromed Journal of Business*, 5(3), 258-278. doi: 10.1108/14502191011080809.
- Combs, J. G., Crook, T. R., & Shook, C. L. (2005). The dimensionality of organizational performance and its implications for strategic management research. *Research methodology in strategy and management*, 2(05), 259-286.
- Darmadi, S. (2013). Board members' education and firm performance: evidence from a developing economy. *International Journal of Commerce and Management*, 23(2), 113-135. doi: 10.1108/10569211311324911
- Fakhari, H., and Pitenoei, Y.R. (2017). The impact of audit committee and its characteristics on the firm's information environment. *Iranian Journal of Management Studies*, 10(3). 577-608. DOI: 10.22059/ijms.2017.231317.672627.
- Francis, J. R., Maydew, E. L., & Spark, H. C. (1999). The role of Big 6 auditors in the credible reporting of accruals. *Auditing: A Journal of Practice and Theory*, 18, 17–34.
- García-Sánchez, I., Martínez-Ferrero, J., & García-Meca, E. (2017). Gender diversity, financial expertise and its effects on accounting quality. *Management Decision*, 55(2), 347-382.
- Hejazi, R., Ghanbari, M., & Alipour, M. (2016). Intellectual, Human and Structural Capital Effects on Firm Performance as Measured by Tobin's Q. *Knowledge and Process Management*, 23(4), 259-273. doi: 10.1002/kpm.1529
- IFC, & OJK. (2014). *The Indonesia Corporate Governance Manual* (1st ed.). International Finance Corporation. Retrieved May 26, 2018 from

- https://www.ifc.org/wps/wcm/connect/64185f0042cc3ab0b145fd384c61d9f7/Indonesia_C_G_Manual_Feb2014.pdf?MOD=AJPERES
- Kallamu, B., & Saat, N. (2015). Audit committee attributes and firm performance: evidence from Malaysian finance companies. *Asian Review of Accounting*, 23(3), 206-231. doi: 10.1108/ara-11-2013-0076
- Khliff, H., & Souissi, M. 2010. The Determinants of Corporate Disclosure: A Meta-Analysis. *International Journal of Accounting and Information Management*, 18(3), 198-219. doi: 10.1108/18347641011068965
- Kiattikulwattana, P. (2014). Earnings management and voluntary disclosure of management's responsibility for the financial reports. *Asian Review of Accounting*, 22(3), 233–256. doi: 10.1108/ara-11-2013-0075
- Kipkoech, R. S., & Rono, L. (2016). Audit committee size, experience and firm financial performance. Evidence Nairobi securities exchange, Kenya. *Research Journal of Finance and Accounting*, 7(15), 88 – 91.
- Klein, A. (2002). Audit committee, board of director characteristics, and earnings management. *Journal of Accounting and Economics*, 33(3), 375 – 400.
- Krishnan, G. (2003). Audit quality and the pricing of discretionary accrual. *Auditing*, 22, 109–126.
- Neysi, S. H., Mazraeh, S., & Mousavi, Z. (2012). The importance of intellectual capital disclosure. *International Journal of Business and Social Science*, 3(15), 307 – 310.
- Salehi, M., Tahervafaei, M., & Tarighi, H. (2018). The effect of characteristics of audit committee and board on corporate profitability in Iran. *Journal of Economic and Administrative Sciences*, 34(1), 71-88. doi: 10.1108/jeas-04-2017-0017
- Shawtari, F. A., Mohamad, M. H. S., Rashid, H. M. A., Ayedh, A. M. (2017). Board characteristics and real performance in Malaysian state-owned enterprises (SOEs). *International Journal of Productivity and Performance Management*, 66(8), 1064-1086, doi: 10.1108/IJPPM-12-2015-0188
- Siregar, S., and Utama, S. (2008). Type of earnings management and the effect of ownership structure, firm size, and corporate-governance practices: Evidence from Indonesia. *The International Journal of Accounting*, 43(1), 1-27. doi: 10.1016/j.intacc.2008.01.001
- Souissi, M., & Khlif, H. (2012). Meta-analytic review of disclosure level and cost of equity capital. *International Journal of Accounting & Information Management*, 20(1), 49-62.
- Suherman. (2017). Pengaruh CEO wanita terhadap *cash holding* perusahaan. *MIX: Jurnal Ilmiah Manajemen*, 7(1), 48 – 58.
- Thiruvadi, S., and Huang, H. (2011). Audit committee gender differences and earnings management. *Gender in Management: An International Journal*, 26(7), 483 – 498. doi:10.1108/17542411111175469.
- Wagiciengo, M. M., and Belal, A. R. (2012). Intellectual capital disclosures by South African companies: A longitudinal investigation. *Advances in Accounting*, 28(1), 111-119.
- Wang, Y., & Clift, B. (2009). Is there a business case for board diversity?. *Pacific Accounting Review*, 21(2), 88-193.
- Yan, X. (2017). Corporate governance and intellectual capital disclosures in CEOs' statements. *Nankai Business Review International*, 8(1), 2-21. doi: 10.1108/NBRI-09-2016-0032.