Association between Board Composition and Intellectual Capital Disclosure: An Evidence from Thailand

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ABSTRACT

This research aims to investigate the extent and level of intellectual capital disclosure of listed firms in the Stock Exchange of Thailand during 2012–2014; and to determine the relationship between board composition and the level of intellectual capital disclosure. Content analysis by word count was utilized to quantify the number of words pertinent to the intellectual capital in the 2012–2014 annual reports. The findings revealed an increase in the level of intellectual capital disclosure during the three-year study period, with an overall average of 825.10 words. The study results also showed a significantly positive relationship between the proportion of non-managerial board members (i.e. one proxy representing the board composition), industry type and the level of intellectual capital disclosure. The research findings provide a contribution to deeper understanding of link between board composition and intellectual capital disclosure in Thailand where an evidence was limited.

Keywords: Board Composition, Intellectual Capital Disclosure, Thailand

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บทคัดย่อ

งานวิจัยนี้มีวัตถุประสงค์เพื่อศึกษาลักษณะและระดับการเปิดเผยข้อมูลทุนทางปัญญา ของบริษัทที่จดทะเบียนในตลาดหลักทรัพย์ตั้งแต่ปี พ.ศ. 2555–2557 และเพื่อทดสอบความสัมพันธ์ระหว่างคณะกรรมการบริษัทและระดับการเปิดเผยข้อมูลทุนทางปัญญา การศึกษาใช้การวิเคราะห์เนื้อหาในการวัดระดับการเปิดเผยข้อมูลทุนทางปัญญาในรายงานประจำปี พ.ศ. 2555–2557 ผลการศึกษาพบว่าระดับการเปิดเผยข้อมูลทุนทางปัญญามีการเพิ่มขึ้นทุกปีตลอดระยะเวลาการศึกษาและมีระดับการเปิดเผยข้อมูลฯ เฉลี่ยคือ 825.10 คำ การศึกษาพบความสัมพันธ์เชิงบวกระหว่างสัดส่วนของคณะกรรมการบริษัทที่ไม่เป็นผู้บริหาร ลักษณะอุตสาหกรรม และระดับการเปิดเผยข้อมูลทุนทางปัญญา ประโยชน์ที่ได้รับจากผลการศึกษาวิจัยคือ ความเข้าใจอย่างลึกซึ้งต่อความเชื่อมโยงระหว่างคณะกรรมการบริษัทและการเปิดเผยข้อมูลทุนทางปัญญาในประเทศไทย

คำสำคัญ : คณะกรรมการบริษัท การเปิดเผยข้อมูลทุนทางปัญญา ประเทศไทย

1. INTRODUCTION

Intellectual capital is an intangible asset that creates firm value, shareholder value, competitive advantage, future profitability and sustainable development (Edvinsson, 1997). According to Abhayawansa and Azim (2014), intellectual capital consists of human, structural and relational capitals. Human capital refers to the value provided by employees through the application of skills and expertise, and structural capital is the supportive non-physical infrastructure, processes and databases that enable the human capital to function. Relational capital largely refers to a good repertoire with stakeholders of the business.

Since Thailand has adopted the International Financial Reporting Standards (IFRS) as its accounting standards instead of Thai Accounting Standards (TAS) since 2012 by the Federation of Accounting Professions under the Royal Patronage of his Majesty the King (FAP) (2012), the intellectual capital is mentioned in the IFRS No. 38 namely Intangible Assets. However, the intellectual capital is still not regulated to disclose yet. This is because the extent and disclosure of intellectual capital information may not be accommodated by the traditional accounting standards (Naklerd & Suttipun, 2016). Moreover, there are a little knowledge about the voluntary reporting including intellectual capital reporting in Thailand because of lacking attention from regulators and governance organizations (Suttipun, 2015).

There are two different reasons making or not making intellectual capital disclosure. On one hand, intellectual capital disclosure can reduce information asymmetry resulting in lower agency costs (Healy & Palepu, 2001). For example, Mangena, Pike and Li (2010) found that companies are motivated to provide intellectual capital information to increase transparency and to have a lower agency costs. On the other hand, the intellectual capital disclosure may cost the companies resulting in higher agency costs (Habersam & Piber, 2003). For instance, Beattie and Thomson (2010) found that companies consider to reduce intellectual capital disclosure, if it may harm competitive position and setting disclosure precedence as key disincentives of voluntary intellectual capital disclosure.

Unlike in many advanced economies where the disclosure of intellectual capital is mandatory, e.g. Australia, Canada, most European countries, the U.K. and the U.S.A. (Li, Pike & Haniffa, 2008; Li & Mangena, 2014; Cerbioni & Parbonetti, 2007), such disclosure is voluntary and less commonly practiced in Asia. Nevertheless, some Asian nations, e.g. Bangladesh, Iran and Malaysia, have taken the initiative whereby listed companies are encouraged to disclose intellectual capital information (Abhayawansa & Azim, 2014; Anam, Fatima & Majdi, 2011). In Thailand, like the majority of countries in Asia, the practice of intellectual capital disclosure is still voluntary and limited in the adoption. Furthermore, there exists no prior study on the intellectual capital disclosure by listed companies in Thailand. The definitive level of intellectual capital disclosure in Thailand thus remains obscure. Moreover, the determinants of intellectual capital disclosure of Thai businesses have not yet to be identified.

It is agreed that board composition plays an important role to enhance the reporting processes (Li et al., 2008) and to reduce information asymmetries between top-management and shareholders (Mangena & Pike, 2005). Prior studies have tested the influence of board composition on external and financial disclosures (Karananoou & Vafeas, 2005; Mangena & Pike, 2005). By definition, intellectual capital disclosure is a reporting process by which information relating to corporate operation and performance is made available to stakeholders, a practice which in turn is influenced by the board composition. The expectation of board composition influencing the intellectual capital disclosure derives from the notions that the mechanisms of corporate governance are designed to reduce information asymmetries and conflict of interest between top-management and shareholder (Li et al., 2008), and respond the social expectations (Mobus, 2005).

In different environment of each country to examine the relationship between board composition and the intellectual capital disclosure such as the financial reporting environment, changes of regulation, and changes of social expectation, the results were mixed. For example, Li et al. (2008), Lipton and Lorsch (1992), Haji and Ghazali (2013), and Klein (2002) found the positive relationship between board composition and the intellectual capital disclosure, but Cerbioni and Parbonetti (2007), and McMullen and Raghunardan (1976) found the negative relationship between them. On the other hand, there is no relationship between board composition and the intellectual capital disclosure (Gan, Saleh, Abessi & Huang, 2013; Taliyang & Jusop, 2011).

In the Thai setting, existing studies have been limited to the relationship between board composition and other voluntary disclosures, including environmental disclosure (Naklerd & Suttipun, 2016), corporate social responsibility reporting (Suttipun & Nuttaphon, 2014), triple bottom-line reporting (Chamnankij & Suttipun, 2016), and sustainable development reporting (Suttipun & Saelee, 2015). Meanwhile, no study specific to the relationship between the corporate board composition and intellectual capital disclosure nonetheless exists.

Thailand is chosen by this study to investigate the intellectual capital disclosure with several reasons. First, Thailand is one of developing countries where the evidences of the intellectual capital disclosure were still very lack and low, general and descriptive in nature compared with the prior studies in developed countries. Second, no study about intellectual capital disclosure in Thailand was descriptive and quantitative explaining the nature, extent, and level of intellectual capital disclosure without theoretical explanation. Third, many literatures on intellectual capital disclosure focuses on emerged economies in the European countries (Cerbioni & Parbonetti, 2007; Chaminade & Robert, 2003) such as the United Kingdom (Li et al., 2008; Mangena et al., 2010), Iceland (Breman, 2001), Italy and Austria (Habersam & Piber, 2003), while little attention has been paid to emerging economies especially in Thailand. Fourth, unlike prior studies which the intellectual capital disclosure is mandatory reporting, the intellectual capital disclosure in Thailand is still voluntary reporting. Therefore, the results of this study may differ with the previous literatures.

From research problems above, thus, the objectives of this empirical research are to investigate the extent and level of intellectual capital disclosure of listed companies from the Stock Exchange of Thailand (SET) during 2012–2014; and to examine the relationship between board composition and the level of intellectual capital disclosure. To determine the intellectual capital disclosure, this research relied on the 2012–2014 annual reports of the sampled firms. This is because the most recent adjustment to the Thai Financial Reporting Standard No. 28: Intangible Assets was made since 2012 by the Federation of Accounting Professions of Thailand to mention the concept of intellectual capital. Moreover, the prior studies (See Naklerd & Suttipun, 2016; Chamnankij & Suttipun, 2016) in Thailand indicate that board composition of listed companies in the SET facilitates more level of voluntary disclosure after the new accounting standards. This research endeavors to find answers to the following questions: (1) What is the extent and level of intellectual capital disclosure of the SET-listed companies from 2012 to 2014? and (2) Does a possible relationship exist between board composition and the level of intellectual capital disclosure in the annual reports?

This research is expected to shed more light on the level of intellectual capital disclosure in Thailand. It is also anticipated that the findings on the relationship between board composition and intellectual capital disclosure would contribute to a better understanding of the links between corporate governance and intellectual capital disclosure of Thai listed companies. In addition, it is believe that the findings would lead to more important changes in the existing regulations regarding the intellectual capital disclosure.

The organization of this research is as follows: Section 1 is the introduction. Section 2 is concerned with the theoretical perspective. Sections 3 and 4 respectively deal with motivation of intellectual capital disclosure and the development of hypotheses. Section 5 details the research methodology, while Section 6 presents the findings and discussions. The concluding remarks and recommendations are provided in Section 7.

2. THEORETICAL PERSPECTIVE

There exist several theories with the explanatory power to account for the relationship between board composition and intellectual capital disclosure. Examples are the legitimacy theory (Islam & Deegan, 2010; Guthrie, Johanson, Bukh & Sanchez, 2003), stakeholder theory (Suttipun, 2015), agency theory (Mele, 2008; Jensen & Mecking, 1976), signaling theory (Brown, Dejong & Levy, 2009), and dependency theory (Amran & Devi, 2008). There are some reasons why this study does not use both signaling and dependency theories. For example, the signaling theory explains the effect of the voluntary intellectual capital disclosure on the other variables such as performance, or firm value (Brown et al., 2009), while the dependency theory cannot explain the voluntary intellectual capital disclosure of listed companies in the SET because the companies in the SET are the first mover, and are not depended or followed by the other companies out of the SET (Naklerd & Suttipun, 2016).

This empirical research nevertheless utilizes only two theories: the agency and legitimacy theories, because of their explanatory power and applicability to the Thai setting, where intellectual capital disclosure is voluntary and corporate stakeholders are largely at a disadvantage relative to those in advanced economies. In the study, the legitimacy theory is to explain the extent, level and pattern of voluntary intellectual capital disclosure in the annual reports of the SET-listed companies due to social expectations during 2012–2014, while the agency theory is to explain a possible relationship between the board composition and intellectual capital disclosure.

2.1 Legitimacy Theory

As previously mentioned, the legitimacy theory is employed to explain the use of voluntary intellectual capital disclosure due to social expectations including extent, level, and pattern of intellectual capital disclosure in the annual reports of the SET-listed companies. Specifically, Guthire et al. (2003) documented that a corporation would engage in a social activity if a failure to engage brings about a sanction by the society. According to Nurunnabi, Hossain and Hossain (2001), corporations are part of a society, and for a business to be regarded as a good citizen, its actions must be in line with the societal expectations.

Furthermore, the disclosure of engagement in constructive activities helps form the basis for the firm's legitimacy and also is an effective means of disseminating information with regard to transparency and accountability to the society (Mobus, 2005). Thus, organizations should establish a set of requirements to make available the information on firms' voluntary intellectual capital. Interestingly, according to Deegan (2002), corporations would likely undertake the voluntary intellectual capital disclosure practice when their legitimacy is under threat and thus a risk to the operation.

2.2 Agency Theory

According to Jensen and Meckling (1976), the agency theory is concerned with the relationship between principals (owners) and agents (management), in which the former commission the latter to manage a business organization on their behalf so as to maximize the firm value. In so doing, the agents formulate and implement the strategic plans. As long as their interests are congruous, conflicts between both parties rarely materialize. There are however occasions when their business goals are out of sync and thus the subsequent conflicts of interest. According to Mele (2008), a conflict of interest increases the agency costs and reduces the firm value as a result of the benefits argument, moral hazard problem and adverse selection problem. In addition, Healy and Palepu (2001) documented that the increased agency costs contributed to the lowered liquidity of corporate shares, poor management reputation, and higher cost of capital.

According to Cerbioni and Parbonetti (2007), the issue of conflict of interest could be mitigated by the adoption of intellectual capital disclosure. This is because the disclosure of intellectual capital offers the owners (principals) a means to access more comprehensive corporate information and at the same time increases the accountability and transparency of the management (agents). This research utilizes the agency theory to explain the framework of connection between corporate governance representing by board composition and corporate voluntary intellectual capital disclosure. This is because board composition plays as one of the important corporate governance mechanisms used to reduce the agency problem and information asymmetries. Therefore, it is natural course that the relationship between board composition and voluntary intellectual capital disclosure is rested on the agency theory

3. MOTIVATION OF INTELLECTUAL CAPITAL DISCLOSURE

Intellectual capital is an intangible asset that can improve and increase competitive advantage, firm value and future profitability. According to Abdullah and Sofian (2012), intellectual capital leads to businesses becoming more operationally innovative and creative. According to Edvinsson (1997), intellectual capital encompasses human, customer and organizational capitals. Human capital refers to employees' ability, attitudes, experiences, competencies and skills that drive the organization and its resources, while customer capital is concerned with customers' satisfaction and loyalty to a business. Organization capital refers to an internal process to support the efficient and effective operations, e.g. corporate culture, organization structure and work system.

By theoretical perspective used in this study, the intellectual capital disclosure can reduce information asymmetries and agency costs between top-management and shareholders (Li et al., 2008), and serve the social expectations (Mobus, 2005). Aboody and Lev (2000) argue that the conflict of interest between top-management and shareholders is more acute for expenses and investments of intellectual capital disclosure than expenses and investments in tangible assets because the intellectual capital disclosure is still unregulated. However, Beattie and Thomson (2010) show that companies would like to disclose the intellectual capital information to increase transparency and reduce the agency costs. Moreover, Mangena et al. (2010) indicate that firms with greater intellectual capital information normally have a lower cost of capital. On the other hand, disclosure of intellectual capital information may harm competitive position and increase agency costs (Habersam & Piber, 2003).

Most previous studies of intellectual capital disclosure are investigated in developed countries. For example, Li, Mangena and Pike (2012) examined the effect of audit committee on intellectual capital disclosure for UK listed companies. Bozzolan, Favotto and Ricceri (2003) investigated the annual reports of Italian listed companies for the level of intellectual capital disclosure. Brennan (2001) studied intellectual capital reporting in the annual reports of listed firms in Ireland. In addition, Chaminade and Roberts (2003) analyzed and compared the practice of intellectual capital disclosure in Norway

and Spain, while Guthrie, Petty and Riccerri (2007) compared the intellectual capital disclosure in Hong Kong and Australia. Habersarn and Piber (2003) examined the intellectual capital reporting in Italy and Austria.

Unlike in most advanced economies, on the other hand, the intellectual capital disclosure is voluntary and less commonly practiced in most Asian countries. Nevertheless, Abhayawansa and Azim (2014) studied listed companies in Bangladesh and reported that most of the sampled firms opted for the disclosure of intellectual capital information in their annual reports, realizing that intellectual capital contributes positively to the firm value. In addition, Anam et al. (2011) documented that intellectual capital disclosure increased the transparency and trustworthiness of Malaysian firms among investors in the capital market. In Thailand, however, the practice of intellectual capital disclosure is very limited and non-compulsory. Furthermore, no study on the intellectual capital disclosure by listed companies in Thailand exists, giving rise to the obscurity of the extent and level of intellectual capital disclosure in the country. Moreover, the determinants of intellectual capital disclosure of Thai businesses have yet to be identified.

4. HYPOTHESIS DEVELOPMENT

There exist prior studies on the extent and nature of intellectual capital disclosure in Bangladesh (Abhayawansa & Azim, 2014), in Malaysia (Anam et al., 2011; Gan et al., 2013), and in the UK (Li et al., 2008). Meanwhile, Li and Mangena (2014), Anan et al. (2011), and Abdullaha and Sofiana (2012) examined the relationship between intellectual capital disclosure and firms' market value. In addition, the relationship between corporate governance and intellectual capital disclosure was studied in Haji and Ghazali (2013), Li et al. (2008), Abeysekera (2010), and Cerbioni and Parbonetti (2007).

To investigate the possible relationship between board composition and intellectual capital disclosure in the Thai setting, this research has proposed seven hypotheses. In addition, there are five independent variables (i.e. the size of committee, CEO duality, proportion of non-managerial committee, size of audit committee, and frequency of audit committee meeting) and two control variables (i.e. company size and industry type).

To reduce information asymmetries, most previous studies indicated a positive relationship between committee size and intellectual capital disclosures. For example, Haji and Ghazali (2013), Li et al. (2008), and Abeysekera (2010) found that the size of committee is positively correlated to the level of intellectual capital disclosure. This is attributable to the fact that intellectual capital disclosure could reduce the agency costs between shareholders and top management and thereby raise the likelihood that the board would opt for the practice of intellectual capital disclosure. Furthermore, according to Lipton and Lorsh (1992), a larger board improves the quality and quantity of information disclosure, including intellectual capital disclosure. In Thailand, prior studies found the positive

relationship between size of committee and voluntary Triple Bottom Line reporting (Chamnankij & Suttipun, 2016), and between committee size and voluntary environmental disclosure (Naklerd & Suttipun, 2016). On the other hand, Cerbioni and Parbonetti (2007) documented a negative relationship between the two variables for firms in European countries. This may be because a larger board size could become a hindrance to strategic initiatives and actions (Goodstein, Gautam & Beeker, 1994) and could contribute to a lack of unity in the decision-making due to the dispersed options (Jansen, 1993). Meanwhile, Gan et al. (2013) found no relationship between the size of committee and intellectual capital disclosure. This current research has thus hypothesized that:

H1: A positive relationship exists between the size of committee and intellectual capital disclosure.

The CEO duality phenomenon is common in SET-listed companies in Thailand (SET, 2015). According to the agency theory, CEO duality plays an influencing role in voluntary disclosure decisions to fulfill the monitoring role (Haji & Ghazali, 2013). However, according to Boyd (1996), CEO duality could lead to low voluntary reporting and subsequently limited intellectual capital disclosure. In addition, Cerbioni and Parbonetti (2007) reported a negative relationship between CEO duality and intellectual capital disclosure of European companies. Similar findings were documented in Li and Manyena (2014), who examined listed firms in the U.K. On the other hand, Taliyang and Jusop (2011) studied listed Malaysian firms and found no relationship between CEO duality and intellectual capital disclosure. It is thus hypothesized that:

H2: A negative relationship exists between CEO duality and intellectual capital disclosure.

According to Fama (1980), the non-managerial committee is inclined to adopt measures in response to the demands of stakeholders and expectations of the society. Moreover, Haniffa and Cooke (2005) noted that the non-managerial committee would monitor and direct the management's activities, including voluntary reporting. Li et al. (2008) documented that a higher proportion of non-managerial committee encourages top management to embrace the intellectual capital disclosure practice. According to Haniffa and Cooke (2005), Haji and Ghazali (2013), Li et al. (2008), a positive relationship existed between the proportion of non-managerial committee and intellectual capital disclosure. This is because the board members who hold no managerial position are less opportunistic and more attentive to the needs of all stakeholders. In addition, non-managerial board members oftentimes are advocates of voluntary reporting, including intellectual capital disclosure (Li et al., 2008). Thus, this research hypothesizes that:

H3: A positive relationship exists between the proportion of non-managerial committee and intellectual capital disclosure.

Audit committee plays a significant role in the adoption of voluntary reporting (Klein, 2002) and intellectual capital disclosure (Gan et al., 2013) because the audit committee could exert influence over the management to undertake voluntary reporting. Besides, the audit committee could serve a counterweight to reduce the information asymmetry between the owners (shareholders) and agents (top management). Thus, a positive relationship existed between the size of audit committee and intellectual capital disclosure (Gan et al., 2013). Klein (2002) also found that audit committee size plays as integral factor of company delivering quality and quantity of corporate voluntary reporting. On the other hand, Li et al. (2012) reported a negative relationship between the size of audit committee and intellectual capital disclosure. Meanwhile, Taliyang and Jusop (2011) found no relationship between the two variables. It is thus hypothesized that:

H4: A positive relationship exists between the size of audit committee and intellectual capital disclosure.

According to Taliyang and Jusop (2011), the frequency of audit committee meeting was positively correlated to the agency costs incurred by a business. This is probably because the frequent meeting of the audit committee allows for the sharing of information between the committee and management and thus reduces the information asymmetry. In addition, Taliyang and Jusop (2011) and Haji and Ghazali (2013) reported a positive relationship between the frequency of audit committee meeting and intellectual capital disclosure of Malaysian listed firms. According to Karamanou and Vafeas (2005), there was an influence of higher frequency of the audit committee meeting on the intellectual capital disclosure. McMullen and Raghunandan (1996), however, found a negative relationship between the frequency of audit committee meeting and earnings restatements. This research hypothesizes that:

H5: A positive relationship exists between the frequency of audit committee meeting and intellectual capital disclosure.

In this research, the company size and industry type variables are controlled (i.e. the control variables). According to Li et al. (2008) and Mangena and Pike (2005), the corporate size has consistently been found to be associated with intellectual capital disclosure. In addition, Nurunnabi et al. (2011) reported a positive relationship between company size and intellectual capital disclosure by the listed companies in Bangladesh. In addition, Abdullaha and Sofiana (2012) reported a positive relationship between company size and intellectual capital disclosure for Malaysian listed companies.

Regarding the industry type, Abhayawansa and Azim (2014) documented that companies in the high social and environmental sensitive (high-profile) industry tended to disclose more intellectual capital information in their annual reports than those in the low social and environmental sensitive (low-profile) industry. This is because higher profile industry has been concerned about social and environmental impact by it society and community rather than lower profile industry, therefore, to

meet the social expectation, the higher profile industry needs to provide its actions and activities inducing intellectual capital disclosure (Najlerd & Suttipun, 2016). Industry type was used as variable controlling the relationship between corporate governance and voluntary reporting in Thailand (Chamnankij & Suttipun, 2016; Najlerd & Suttipun, 2016). Moreover, Suttipun (2015) found a positive relationship between both variables for listed companies in Thailand, in which companies in the agriculture and food, industrial, and resource industries are regarded as high social and environmental sensitive industry, while those in the consumer product, financial, property and construction, services, and technology industries as low social and environmental sensitive industry. This current research employs both control variables in testing the following hypotheses:

H6: There is a positive relationship between company size and intellectual capital disclosure.

H7: There is a positive relationship between industry type and intellectual capital disclosure.

5. RESEARCH METHODOLOGY

5.1 Population, Sample and Sampling

In this research, the population was all SET-listed companies during 2012–2014, excluding (1) those in the financial industry as they are subjected to a different set of regulations by the banking and financial authorities; (2) those whose fiscal yearend is not 31st December; and (3) firms under rehabilitation.

By simple random sampling, 223 out of 503 listed companies were selected as the study samples (Table 1). To determine the intellectual capital disclosure, this research relied on the 2012–2014 annual reports of the sampled firms. This is because the most recent adjustment to the Thai Financial Reporting Standard No. 28: Intangible Assets was made since 2012 by the Federation of Accounting Professions of Thailand to include the concept of intellectual capital. Despite the availability of information through other sources, e.g. websites, stand-alone reports and analyst presentations, this research has utilized only the annual reports to quantify the extent and level of intellectual capital disclosure because they are the source of information which has been widely adopted and well justified in previous related studies (Li et al., 2012; Bozzolan et al., 2003)

Table 1: Population and Sample

No.	Industry	Population		Sample	
		Frequency	Percent	Frequency	Percent
1	Agriculture and food	50	9.94	22	9.87
2	Consumer product	40	7.96	18	8.07
3	Industrial	86	17.10	38	17.04
4	Property and construction	149	29.62	66	29.60
5	Resource	38	7.55	17	7.62
6	Service	99	19.68	44	19.73
7	Technology	41	8.15	18	8.07
Total		503	100.00	223	100.00

5.2 Measurement of Independent, Dependent and Control Variables

In this research, the dependent variables are intellectual capital disclosure, human capital disclosure, relational capital disclosure and structural capital disclosure. Content analysis was employed to quantify the number of words pertaining to the intellectual, human, relational and structural capital disclosures in the 2012–2014 annual reports. The collection of intellectual capital disclosure data was adapted from Taliyang and Jusop (2011), Haji and Ghazali (2013) and Li et al. (2008). In addition, this research utilized a comprehensive checklist of voluntary intellectual capital disclosure items developed by Li et al. (2008).

The independent variables are the size of committee, CEO duality, proportion of non-managerial committee, size of audit committee, and frequency of audit committee meeting (Haji & Ghazali, 2013; Li et al., 2008; Abeysekera, 2010). All of the independent variables represent the board composition. In addition, the size of company and type of industry are the control variables (Nurunnabi et al., 2011; Suttipun, 2015). For example, type of industry in this study is measured by using dummy proxy as either high or low profile industries because this measurement tool was used in several related literatures (Abhayawansa & Azim, 2014; Suttipun, 2015; Chamnankij & Suttipun, 2016; Najlerd & Suttipun, 2016) that most were in Thai context. The data pertaining to the independent and control variables were gleaned from the annual reports and the website of the Stock Exchange of Thailand (i.e. SETSMART) (SET, 2015). Table 2 tabulates the dependent, independent and control variables.

Table 2: Measurement of Variables

Dependent variables:	**Notation**	**Measurement**
1. Intellectual capital disclosure	INTELL	Content analysis by word count
2. Human capital disclosure	HUMAN	Content analysis by word count
3. Relational capital disclosure	CUSTO	Content analysis by word count
4. Structural capital disclosure	ORGAN	Content analysis by word count
Independent variables:	**Notation**	**Measurement**
1. Size of committee	CSIZE	Number of committee members
2. CEO duality	DUAL	1 = dual role, 0 = single role
3. Non-managerial committee	COMMIT	Proportion of non-managerial committee
4. Size of audit committee	CAUDIT	Number of audit committee members
5. Frequency of audit committee meeting	MEET	Frequency of audit committee meeting
Control variables:	**Notation**	**Measurement**
1. Size of company	FSIZE	Total asset
2. Industry type	INDUS	1 = High profile industry, 0 = otherwise

5.3 Data Analysis

To analyze the data, this research utilized the descriptive analysis and multiple regression techniques. The descriptive analysis technique was used to investigate the extent and level of intellectual capital disclosure, expressed as means and standard deviations (SD). Multiple regression was used to test the relationship between board composition and the level of intellectual capital disclosure. There are four models used in this study: (A) intellectual capital disclosure, (B) human capital disclosure, (C) relational capital disclosure, and (D) structural capital disclosure.

Model A: Intellectual capital disclosure

$$\text{INTELL} = a + b1\,\text{CSIZE} + b2\,\text{DUAL} + b3\,\text{COMMIT} + b4\,\text{CAUDIT} + b5\,\text{MEET} + b6\,\text{FSIZE} + b7\,\text{INDUS} + \text{error}$$

Model B: Human capital disclosure

$$\text{HUMAN} = a + b1\,\text{CSIZE} + b2\,\text{DUAL} + b3\,\text{COMMIT} + b4\,\text{CAUDIT} + b5\,\text{MEET} + b6\,\text{FSIZE} + b7\,\text{INDUS} + \text{error}$$

Model C: Relational capital disclosure

$$CUSTO = a + b1\ CSIZE + b2\ DUAL + b3\ COMMIT + b4\ CAUDIT + b5\ MEET + b6\ FSIZE + b7\ INDUS + error$$

Model D: Structural capital disclosure

$$ORGAN = a + b1\ CSIZE + b2\ DUAL + b3\ COMMIT + b4\ CAUDIT + b5\ MEET + b6\ FSIZE + b7\ INDUS + error$$

6. FINDINGS AND DISCUSSION

This section presents the findings on the extent and level of intellectual capital disclosure and the relationship between board composition and intellectual capital disclosure. Descriptive analysis, correlation matrix and multiple regression were utilized for analysis of the data.

Table 3: The Extent and Level of Intellectual Capital Disclosure (No. of Words)

Year	HUMAN		CUSTO		ORGAN		INTELL	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
2012	327.09	329.16	190.32	403.48	166.84	279.81	684.25	688.05
2013	459.93	494.64	213.65	386.62	187.01	258.75	860.60	824.20
2014	494.35	485.44	242.13	416.18	193.96	228.71	930.43	772.55
Average	427.12	408.19	215.37	384.44	182.60	216.90	825.10	701.46

Table 3 tabulates the extent and level of intellectual capital disclosure (by the number of words) in the 2012–2014 annual reports of the 223 sampled firms. The findings indicated a rise in the level of intellectual capital disclosure from an average of 684.25 words in 2012 to 930.43 words in 2014. This result was consistent with Suttipun (2015) finding an increase in voluntary sustainable development reporting by listed companies in Thailand during 2005 to 2011. The result of voluntary intellectual capital disclosure supports the legitimacy theory. The result also was similar with the prior studies in Asian context. For example, Nurunnabi et al. (2011) and Gan et al. (2013) found an increase in intellectual capital disclosure by the listed companies in Bangladesh and in Malaysian during their period being study. It may be because although intellectual capital disclosure was still not regulated yet in Thailand, listed companies in the SET have to pay attention not only shareholder, investors, and creditors, but also social expectations such as customers, labors, society, and community (Deegan,

2002). The result also argued with Welford (2007) who states that social and community power was lack in Asian Pacific Region, and they can not protect in the ways that they should be.

The increase in the level of intellectual capital disclosure in Thailand (i.e. from 684.25 to 930.43 words), despite it being voluntary, suggests that an increasing number of Thai firms have utilized intellectual capital disclosure as a way to serve their social expectations. Therefore, Thai regulators such as the SET, the FAP, and the Revenue Department should regulate the intellectual capital disclosure for all Thai listed companies.

On the extent of intellectual capital disclosure, the most common intellectual capital disclosure was human capital disclosure (427.12 words on average), followed by relational capital (215.37 words) and structural capital disclosures (182.60 words). By comparison, the ratio of human, relational and structural capital disclosures was 2:1:0.8. Nevertheless, Li et al. (2012) investigated the intellectual capital disclosure in the United Kingdom and found the proportion of human, relational, and structural capital disclosures of 1:1:1. The finding could be attributed to the mandatory nature of intellectual capital disclosure in the UK, whereas in Thailand the practice was voluntary.

Table 4: Descriptive Analysis (n = 223)

Variables	Min.	Max.	Mean	Standard Deviation
INTELL	37	4,978	825.10	701.46
HUMAN	0	2,341	427.12	408.20
CUSTO	0	3,825	215.37	383.44
ORGAN	0	1,835	182.61	216.91
CSIZE	6	21	10.67	2.57
COMMIT	10	93	59.89	17.35
CAUDIT	2	5	3.16	.40
MEET	0	24	6.32	3.19
FSIZE	130,059,136	1.78E + 12	36,617,682,309	1.38E + 11

Table 4: Descriptive Analysis (n = 223) (Cont.)

Variables	Frequency	Percent
INDUS		
High-profile	77	34.50
Low-profile	146	65.50
DUAL		
Dual	33	14.80
No-dual	190	85.20

Table 4 tabulates the descriptive analysis results of all variables under study. The average intellectual capital disclosure was 825.10 words, consisting of 427.12; 215.37 and 182.61 words for human, customer and structural capital disclosures, respectively. However, the minimum level of human, customer and structural capital disclosures still indicated no word in Thai corporate annual reports. This was proved that some companies in the SET do not provide intellectual capital information into their annual reports because the disclosures are not regulated by Thai regulators yet. The average committee size and the average size of audit committee were around 11 (10.67) and 4 (3.16) persons, respectively. The frequency of audit committee meeting was 6.32 times per year, which is twice the number of meetings recommended by the Financial Reporting Council (2008) of a minimum of three to four meetings a year to allow sufficient time for the audit committee to undertake as full a discussion as required. Almost three-fifths (59.88%) of the committee held no managerial position. Out of the 223 firms, a mere 33 companies (14.8%) did have CEO duality during the study period. A total of 77 companies (34.5%) belonged to the high social and environmental sensitive (high-profile) industries and the remaining 145 firms (65.5%) to the low high social and environmental sensitive (low-profile) industries.

Table 5 presents the correlation matrix to test the correlation between all variables under study. Of the 11 variables (i.e. INTELL, HUMAN, CUSTO, ORGAN, CSIZE, DUAL, COMMIT, CAUDIT, MEET, FSIZE, INDUS), INTELL was positively correlated to HUMAN, CUSTO, ORGAN, COMMIT, MEET and INDUS. Specifically, HUMAN was significantly positively correlated to INTELL, CUSTO, ORGAN, COMMIT, MEET and INDUS, while CUSTO was correlated to INTELL, HUMAN and CAUDIT. In addition, ORGAN was correlated to INTELL and HUMAN. For multicollinearity, this study tests the correlation matrix among the variables and calculates the Variables Inflation Factors (VIF). The associations between the variables used in the study were below 0.80 and the VIF was all less than 4.0 suggesting that multicollinearity was not major problem.

Table 5: Correlation Matrix

Variables	2	3	4	5	6	7	8	9	10	11
1.INTELL	.795**	.677**	.542**	.102	.035	.155*	–.071	.145*	.040	.135*
2.HUMAN	1	.194**	.346**	.075	.002	.170*	–.003	.142*	.015	.194**
3.CUSTO		1	.057	.052	.056	.063	–.137*	.126	.005	.004
4.ORGAN			1	.097	.018	.071	.017	.022	.111	.078
5.CSIZE				1	–.179*	.116	.243**	.259**	.216**	–.045
6.DUAL					1	–.145*	–.010	–.042	–.062	.010
7.COMMIT						1	–.065	.188**	.211**	–.137*
8.CAUDIT							1	.149*	–.006	.057
9.MEET								1	.280**	.102
10.FSIZE									1	–.096
11.INDUS										1

* Significant at 0.05 level, ** Significant at 0.01 level

Table 6 presents four multiple regression models testing the relationship between board composition (CSIZE, DUAL, COMMIT, CAUDIT, MEET) and INTELL (model A), HUMAN (model B), CUSTO (model C) and ORGAN (model D), controlling for SIZE and INDUS. With F-value of all models used in this study, the results indicated that these regression models were significantly fit/appropriate to predict dependent variables at the 0.05 level in model A, C, and D, and at the 0.01 level in model B, although Coefficient of Determination for all models was still low.

This study finds that committee size (CSIZE) is not significant associated with any of intellectual capital disclosure indies. The results are inconsistent and difference with the other prior studies such as Haji and Ghazali (2013), Li et al. (2008), and Abeysekera (2010) finding a positive relationship between size of committee and the intellectual capital disclosure. However, this results support the finding of Gan et al. (2013) who also fail to defeat a significant relationship. Therefore, the results suggest that size of committee does not influence the intellectual capital disclosure in annual reports of listed companies in the SET. Even though there is no significant relationship, the direction of the relationship is positive for any of the intellectual capital disclosure indies. A possible explanation is that committee size may encourage the intellectual capital disclosure as a public relation tool in order to attract quality human, relational, and structure capitals.

CEO duality (DUAL) indicates no significant association with any of intellectual capital disclosure indies. The results are consistent with finding of Taliyang and Jusop (2011) who find no significant relationship between CEO duality and the intellectual capital disclosure of listed companies in Malaysia. The significant results may be due to the lack of regulation requirement in the intellectual capital disclosure in developing countries, therefore, no pressure for CEO working as top-management to report such information including the voluntary intellectual capital disclosure.

The results for proportion of non-managerial committee (COMMIT) are positively associated with the intellectual capital disclosure at the 0.05 level, and with the human capital disclosure at the 0.01 level. The results are consistent with Haniffa and Cooke (2005), Haji and Ghazali (2013), and Li et al. (2008) who find the positive relationship between the proportion of non-managerial committee and the intellectual capital disclosure. The results reply that the non-managerial committee (board) members would exert greater influence over the management to adopt the voluntary reporting, including intellectual capital disclosure, since their remunerations are not tied to the firm's performance and thereby little incentive to conceal information (Haniffa and Cooke, 2005). Thus, the greater the proportion of the non-managerial committee affects the higher the level of intellectual capital disclosure. However, the study does not find a significant relationship between the proportion of non-managerial committee and relational and structure capital disclosures. It may be possible that human capital related topics are more likely to be non-managerial committee specific, and force to top management rather than both relational and structure capital topics.

The results for size of audit committee (CAUDIT) are negative and significant at the 0.05 level, but only for the relational capital disclosure. However, the relationship between audit committee size and the other intellectual capital disclosure indies (intellectual capital, human capital, and structure capital) is not significant. The results are inconsistent with Klein (2002) and Gan et al. (2013) finding a positive relationship between size of audit committee and the intellectual capital disclosure. These results, on the other hand, support the finding of Taliyang and Jusop (2011) who find no relationship between audit committee size and the intellectual capital disclosure in Malaysian listed companies. The results between this study and Taliyang and Jusop (2011) study are similar because (1) both Thailand and Malaysia still have the intellectual capital disclosure as a voluntary reporting, and (2) both are in the ASEAN Economic Community that uses a similar economic context.

Finally, the relationship between frequency of audit committee meeting (MEET) and relational capital disclosure is positive and significant at the 0.05 level. However, the results for frequency of audit committee meeting are not significant associated with the intellectual, human, and structure capital disclosures. The positive relationship results for relational capital disclosure are consistent with prior studies such as Taliyang and Jusop (2011) and Haji and Ghazali (2013). It is because both previous studies find the positive relationship between frequency of audit committee meeting and relational

capital disclosure in Malaysian listed companies. The reason of relationship is to reduce the information asymmetries and agency costs (Haji and Ghazali, 2013). Therefore, this study suggests that higher frequency of audit committee meeting has more influence to disclose the relational capital information.

In terms of control variables, the study finds no significant relationship between size of company (FSIZE) and any of the intellectual capital disclosure indies. The results are inconsistent and difference with the other previous studies (e.g. Li et al., 2008; Mangena & Pike, 2005; Nurunnabi et al., 2011). On the other hand, there is a positively significant relationship between type of industry (INDUS) and the intellectual capital disclosure at the 0.05 level, and the human capital disclosure at the 0.01 level. However, industry type is not significant associated with the other intellectual capital indies consisting of relational and structure capital disclosures. The results of positive relationship are consistent with Abhayawansa and Azim (2014) and Chamnankij and Suttipun (2016) finding the positive relationship between industry type and the intellectual capital disclosure. Therefore, the high-profile companies are subjected to do greater scrutiny and provide more voluntary information reporting including the intellectual capital disclosure.

Table 6: Multiple Regression Results

Variables	INTELL	HUMAN	CUSTO	ORGAN
Intercept	.454	.816	1.806	.231
CSIZE	1.564	.890	1.095	1.401
DUAL	1.152	.523	1.119	.723
COMMIT	2.226*	2.709**	.556	1.108
CAUDIT	–1.623	–.455	–2.520*	–.117
MEET	1.362	1.208	2.028*	1.462
FSIZE	–.352	–.570	–.963	1.618
INDUS	2.296*	3.161**	–.114	1.675
R Square	.096	.109	.074	.051
Adjusted *R Square*	.050	.069	.033	.012
F-value	2.665*	3.001**	1.844*	1.307*

* Significant at 0.05 level, ** Significant at 0.01 level

Table 7 summarizes the hypothesis test results. Out of the seven hypotheses that test the relationship between board composition and intellectual capital disclosure, controlling for company size and industry type, only two hypotheses (H3, H7) are accepted whereas the other five hypotheses (H1, H2, H4, H5, H6) are rejected.

Table 7: Summary (Results) of Hypothesis Test Results

Hypothesis	INTELL	HUMAN	CUSTO	ORGAN
H1	Reject	Reject	Reject	Reject
H2	Reject	Reject	Reject	Reject
H3	Accept	Accept	Reject	Reject
H4	Reject	Reject	Accept	Reject
H5	Reject	Reject	Accept	Reject
H6	Reject	Reject	Reject	Reject
H7	Accept	Accept	Reject	Reject

7. Conclusions and Recommendations

This empirical research has revealed an increase in intellectual capital disclosure in the 2012–2014 annual reports of SET-listed companies, with an average of 825.10 words for the period of three years. Specifically, human capital disclosure was the most common intellectual disclosure item among the sampled companies, followed by relational and structural capital disclosures. In addition, the findings indicated a significantly positive influence of the proportion of non-managerial committee, and type of industry on the level of intellectual capital disclosure as well as on the level of human capital disclosure. Moreover, there was positively significant relationship between frequency of audit committee meeting and relational capital disclosure, while the proportion of non-managerial committee had negative correlated with relational capital disclosure. However, there was no variable used ad board composition in this study influencing on structural capital disclosure.

This research is the first that investigates the level of intellectual capital disclosure and the association between the board composition and such disclosure in the Thai setting. It is thus expected that the research findings would cast more light on the country's intellectual capital disclosure practices with regard to the extent and level of disclosure. In addition, the findings are believed to contribute to a deeper understanding of the links between board composition and the intellectual capital disclosure

in developing country as well as developed countries where most prior studies were investigated. Furthermore, it is hoped that this empirical research would lead to necessary revision of corporate governance rule in terms of board composition by focusing on non-managerial committee and quality and quantity of audit committee meeting.

This research however suffers certain limitations. The first limitation is the sole dependence on the annual reports as the source of data for intellectual capital disclosure despite the existence of other sources, e.g. websites, stand-alone reports and corporate letters. Second, the study period of two years could be regarded as too short for a longitudinal study whose typical length of time is either five or ten years. The last limitation is about the utilization of five independent variables of board composition in investigating their association with the intellectual capital disclosure in the annual reports. The fact is that there are other proxies representing the board composition which could influence the decision on intellectual capital disclosure, such as the audit committee background, proportion of foreign committee and size of independent audit committee.

To address, future research should cover a longer study period and rely on other sources of corporate communications. Moreover, it should include other proxies representing the board composition that could influence the decision on intellectual capital disclosure.

REFERENCES

Abdullaha, D.F., & Sofiana, S. (2012). The relationship between intellectual capital and corporate performance. *Procedia-Social and Behavioral Sciences, 8*(2), 537–541.

Abeysekera, I. (2010). The influence of board size on intellectual capital disclosures by Kenyan listed firms. *Journal of Intellectual Capital, 11*(4), 504–518.

Abhayawansa, S., & Azim, M. (2014). Corporate reporting of intellectual capital: evidence from Bangladeshi pharmaceutical sector. *Asian Review of Accounting, 22*(2), 98–127.

Aboody, D., & Lev, B. (2000). Information asymmetry, R&D and insider gains. *Journal of Finance, 56*(6), 2747–2766.

Amran, A., & Devi, S. (2008). The impact of government and foreign affiliate influence on corporate social reporting: the case of Malaysia. *Managerial Auditing Journal, 23*(4), 386–404.

Anam, O.A., Fatima, A.H., & Majdi, A.R.H. (2011). Effects of intellectual capital information disclosed in annual reports on market capitalization: evidence from Bursa Malaysia. *Journal of Human Resource Costing & Accounting, 15*(2), 85–101.

Beattie, V., & Thomson, S.J. (2010). *Intellectual capital reporting: academic utopia or corporate reality in a brave new world?*. Edinburgh: ICAEW.

Bozzolan, S., Favotto, F., & Ricceri, F. (2003). Italian annual intellectual capital disclosure: an empirical analysis", *Journal of Intellectual Capital. 4*(4), 543–558.

Brennan, N. (2001). Reporting intellectual capital in annual reports: evidence from Iceland. *Accounting, Auditing and Accountability Journal, 16*(1), 49–56.

Brown, H.S., DeJong, M., & Levy, D.L. (2009). Building institutions based on information disclosure: lessons from GRI's sustainable reporting. *Journal of Cleaner Production, 17*, 571–580.

Cerbioni, F., & Parbonetti, A. (2007). Exploring the effects of corporate governance on intellectual capital disclosure: an analysis of European biotechnology companies. *European Accounting Review, 16*(4), 791–826.

Chaminade, C., & Robert, H. (2003). What it means is what it does: a comparative analysis of implementing intellectual capital in Norway and Spain. *European Accounting Review, 12*(4), 733–751.

Chamnankij, O., & Suttipun, M. (2016). The relationship between corporate governance and Triple Bottom Line disclosures on websites: a case study of listed companies in the Stock Exchange of Thailand. *Journal of Business Administration, 38*(149), 23–43.

Deegan, C. (2002). The legitimizing effect of social and environmental disclosures: a theoretical foundation. *Accounting, Auditing and Accountability Journal, 15*(3), 282–311.

Edvinsson. L. (1997). Developing intellectual capital at Skandia. *Long Range Planning, 30*(3), 366–373.

Fama, E. (1980). Agency problems and the theory of the firm. *Journal of Political Economy, 88*(2), 288–307.

Federation of Accounting Professions (FAP) under the Royal Patronage oh his Majesty the King. (2012). *The International Financial Reporting Standards for Publicly Accountable Entities*. Bangkok: P.A. Living.

Gan, F., Saleh, Z., Abessi, M., & Huang, C.C. (2013). Intellectual capital disclosure in the context of corporate governance. *Learning and Intellectual Capital, 10*(1), 63–88.

Goodstein, J., Gautam, K., & Beeker, W. (1994). Research notes and communications: the effects of board size and diversity on strategic change. *Strategic Management Journal, 13*(3), 241–250.

Guthrie, J., Johanson, U., Bukh, P.N., & Sanchez, P. (2003). Intangibles and the transuppliernt enterprise: new strands of knowledge. *Journal of Intellectual Capital, 4*(4), 429–440.

Guthrie, J., Petty, R., & Riccerri, F. (2007). *Intellectual Capital Reporting: Lessons from Hong Kong and Australia*. Edinburgh: ICAS.

Habersam, M., & Piber, M. (2003). Exploring intellectual capital in hospitals: two qualitative case studies in Italy and Austria. *European Accounting Review, 12*(4), 753–779.

Haji, A.A., & Ghazali, N.A.M. (2013). A longitudinal examination of intellectual capital disclosures and corporate governance attributes in Malaysia. *Asian Review of Accounting, 21*(1), 27–52.

Haniffa, R.M., & Cooke, T.E. (2005). The impact of culture and corporate governance on corporate social reporting. *Journal of Accounting and Public Policy, 24*, 391–430.

Healy, P.M., & Palepu, K.G. (2001). Information asymmetry, corporate governance and disclosure in Malaysian corporations. *Abacus, 38*(3), 317–349.

Islam, M., & Deegan, C. (2010). Media pressures and corporate disclosure of social responsibility performance information: a study of two global clothing and sports retail companies. *Accounting and Business Research, 40*(2), 131–148.

Jensen, M. (1993). The modern industrial revolution, exit, and the failure of internal control systems. *Journal of Finance, 48*(3), 831–880.

Jensen, M., & Meckling, W. (1976). Theory of firm: managerial behavior, agency costs and ownership structure. *Journal of Financial Economics, 3*(40), 305–360.

Karamanou, I., & Vafeas, N. (2005). The association between corporate board, audit committee and management earnings forecasts: an empirical analysis. *Journal of Accounting Research, 43*(3), 453–486.

Klein, A. (2002). Audit committee, board of director characteristics, and earning management. *Journal of Accounting and Economics, 33*(3), 375–400.

Li, J., Pike, R., & Haniffa, R. (2008). Intellectual capital disclosure and corporate governance structure in UK firms. *Accounting and Business Research, 38*(2), 137–159.

Li, J., & Mangena, M. (2014). Capital market pressures and the format of intellectual capital disclosures in intellectual capital intensive firms. *Journal of Applied Accounting Research, 15*(3), 339–354.

Li, J., Mangana. M., & Pike, R. (2012). The effect of audit committee characteristics on intellectual capital disclosure. *The British Accounting Review, 44*, 98–110.

Lipton, M., & Lorsch, J.W. (1992). A modest proposal for improved corporate governance. *Business Lawyer, 48*, 59–77.

Mangena, M., & Pike, R. (2005). The effect of audit committee shareholding, financial expertise and size on interim financial disclosures. *Accounting & Business Research, 35*(4), 327–349.

Mangena, M., Pike, R., & Li, J. (2010). *Intellectual Capital Disclosure Practices and Effects on the Cost of Equity Capital: UK evidence*. Edinburgh: ICAS.

McMullen, D.A., & Raghunandan, K. (1996). Enhancing audit committee effectiveness. *Journal of Accountancy, August*, 79–81.

Mele, D. (2008). *Corporate social responsibility theories, in Crane, the Oxford Handbook of corporate social responsibility*. New York: Oxford University Press.

Mobus, J.L. (2005). Mandatory environmental disclosures in a legitimacy theory context. *Accounting, Auditing and Accountability Journal, 18*(4), 492–517.

Naklerd, S., & Suttipun, M. (2016). An influence of corporate governance on environmental disclosures of listed companies in the Stock Exchange of Thailand. *Chulalongkon Business Review, 38*(149), 23–44.

Nurunnabi, M., Hossain, M., & Hossain, L. (2001). Intellectual capital reporting in a South Asian country: evidence from Bangladesh. *Journal of Human Resource Costing & Accounting, 15*(3), 196–231.

Suttipun, M. (2015). Sustainable development reporting: evidence from Thailand. *Asian Social Science, 11*(13), 316–326.

Suttipun, M., & Nuttaphon, C. (2014). Corporate social responsibility reporting on websites in Thailand. *The Kasetsart Journal Social Sciences, 35*(3), 536–549.

Suttipun, M., & Saelee, S. (2015). An effect of corporate governance on sustainable development reporting in Thailand. *Corporate Ownership and Control, 13*, 696–704.

Taliyang, S.M., & Jusop, M. (2011). Intellectual capital disclosure and corporate governance structure: evidence in Malaysia. *International Journal of Business and Management, 6*(12), 55–77.

The Financial Reporting Council. (2008). *Guidance on Audit Committee*. London: FRC.

The Stock Exchange of Thailand. (2015). *Company Listed in the Stock Exchange of Thailand*, http://www.set.or.th.

Welford, R. (2007). Corporate governance and corporate social responsibility: issues for Asia. *Corporate Social Responsibility and Environmental Management, 17*, 42–51.