

Conference Paper

ESG Strategy Through the Integrated Business Model in Congruence with Circular Economy: Does Independent Board Members Matter?

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Abstract.

The purpose of this study is to examine the impact of the integrated Business Model disclosures on the financial performance of the top 30 Malaysian PLCs, moderated by a 50% presence of Independent Board of Directors as proposed by the Malaysian Code of Corporate Governance 2017 (MCCG 2017). The paper's design will adhere to the purposive sampling methodology, utilizing descriptive statistics, multiple regression analysis, and quantitative content analysis derived from the International Integrated Reporting Council (IIRC)'s Integrated Report, along with previous studies. This approach aims to analyze the annual reports and integrated reports, aiming to explore the Integrated Business Model disclosures within the top 30 Malaysian PLCs.

The originality of this paper lies in the design of the new Independent Board of Directors Scoring Index, which aims to identify the best disclosures among the top 30 Malaysian PLCs. This scoring index could prove beneficial to both academicians and practitioners, extending its utility beyond the Top 30 PLCs. The study serves as a systematic review of recent research developments in Integrated Business Model disclosures within the Integrated Report and the Annual Reports of the top 30 Malaysian PLCs.

Keywords: ESG, Circular Economy, Governance, Integrated Report, Business Model, Independent Board of Directors

1. INTRODUCTION

Governance means steering and is necessary in all listed companies. Corporate governance involves the structure necessary to monitor the company in the right direction (Kanagaretnam et al. 2007; Haniffa & Hudaib 2006; Cadbury report 1992). Corporate governance has been defined by Denis and McConnell (2003) as mechanisms that induce managers of the company to work in line with the interest of the

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owners, thereby maximizing the value for the owners. These governance mechanisms can broadly be divided into two groups: external and internal. External mechanisms include for example the legal system (Denis & McConnell 2003). Examples of the internal mechanisms of governance include board structure variables (Haniffa & Hudaib 2006), incentive schemes (Donaldson & Davis,1991), the decision-making process, and the implementation of decisions taken (Abeysekera 2013).

In many organizations, especially public companies, where ownership and management are separated, the responsibility of the in-firm governance is given to the board of directors (Cadbury Report 1992). IIRC's <IR> framework (2013b p. 33) defines those charged with governance as follows: "The person(s) or organization(s) (e.g., the board of directors or a corporate trustee) with responsibility for overseeing the strategic direction of an organization and its obligations with respect to accountability and stewardship."

The characteristics of top management (e.g. demographic) influence the decisions they make and therefore the actions taken by the organizations they lead. This occurs because demographic characteristics are associated with many cognitive bases, values and perceptions that influence decision-making at the top management level. Top management members could have a greater demographic diversity, influence the decision-making process in top management and make a positive contribution to strong performance (Marimuthu and Kolandaisamy, 2009).

An organization's business model is its system of transforming inputs, through its business activities, into outputs and outcomes that aims to fulfil the organization's strategic purposes and create value over the short, medium and long term (IIRC, 2013). An integrated report describes the business model, including key: Inputs; Business activities; Outputs; Outcomes (IIRC, 2013).

Creating a circular economy will require a massive shift in the way we manage and exchange materials and products. Businesses will need to collaborate with their partners to eliminate the need for raw-material extraction. Products will need to be designed to stay in use for longer periods, and the clothing industry – one of the most wasteful industries in operation – will need to make massive adjustments to eliminate waste. To top it all off, adjusting all these variables will require high levels of coordination and partnerships between all stakeholders involved (Ritchie and Freed, 2021).

Environmental, social and corporate governance (ESG) refers to a group of standards used by companies to monitor, track, and evaluate their performance in relation to their impact on the environment, society and equity. They are also used by socially conscious investors to evaluate and track their investments. The simple idea behind ESG standards

is that a business should be measured by more than just its financial performance. Basic business decisions made for financial reasons alone ignore how that company performs in relation to society as a whole (Bradley, 2021).

2. PROBLEM STATEMENT

A recent report by the business consultant group, Circle Economy states that the current global economy is around 9 percent circular. This figure was calculated based on the share of recycled or reused materials balanced against all of the material inputs into the global economy. Clearly, humans have a long way to go if they want to achieve a true circular economy. The current linear economy is locked into a system that depends on the take-make-waste-approach to production. The limitations of this approach are starting to be reached as we fully understand the environmental, economic, and social impacts this linear way of thinking brings. This lock that the linear economy holds over us is starting to weaken (Ritchie and Freed, 2021).

In recent years, the term 'ESG' has generally become synonymous with socially responsible investment. However, ESG should be seen as more of a risk management framework for evaluating companies and not as a stand-alone investment strategy. ESG measures the sustainability and societal impact of an investment in a company. These criteria determine the future financial performance of companies. Moreover, ESG is often incorrectly commingled with terms such as corporate sustainability and corporate social responsibility, in which some overlap exists but these terms are not interchangeable (Bradley, 2021).

PwC Malaysia reported in 2014 that Paul Druckman, the Chief Executive Officer of the IIRC visited Malaysia and was disappointed with the level of Integrated Reporting practices among the Malaysian public listed companies on Bursa Malaysia (PricewaterhouseCoopers, 2014).

Paul Druckman, Chief Executive Officer of the IIRC visited Malaysia in year 2014 and said that he was disappointed with the take-up of Integrated Reporting in Malaysia. This isn't only because of a lack of local companies embracing the framework, but also the fact that none of the leading Malaysian companies were involved in the effort to create the Malaysian version of the Integrated Reporting framework (PricewaterhouseCoopers, 2014).

The business model is a significant tool for capturing, visualising, understanding and communicating a company's business logic (Osterwalder, 2004). It provides a platform to measure, observe and compare company performance and improves the

management of the business logic, by ameliorating the design, planning, changing and implementation of company strategy (Sukhari and de Villiers, 2018; Osterwalder, 2004). Articulated business models allow companies to react faster to changes in the business environment, improve the alignment of strategy, business organisation and technology, and help foster innovation (Sukhari and de Villiers, 2018; Osterwalder, 2004).

It is important for investors to understand the relationship between the business model and the company's strategy, governance, performance and prospects (Sukhari and de Villiers, 2018; Topazio, 2013). Annual reports disclose business models in various ways across the world and 63% of articles examined in a study show an explicit link between the business model and a company's ability to generate revenue and drive financial performance (Topazio 2013). Robertson and Samy (2015) investigate the limitations of current reporting practices and argue that there no clear connection between financial and non-financial information, because companies do not make use of integrated thinking.

From the industry perspective, PwC Malaysia's survey in 2015 which was conducted on the top 50 PLCs of Bursa Malaysia on the implementation of the business model found that less than half of the companies in their analysis included the term 'business model' in their reporting and, for those that did, the overwhelming majority did not provide any further insight into the value creating activities of their organisation (PwC, 2015). Very few companies identified outputs from their business activities beyond a simple description of products and services placed in the market. Based on their findings on the implementation of the business model 44% include the term 'business model' in their reporting. Of those who mention their business model, 14% set it in a strategic context whilst 12% linked it to value creation. 12% used graphics to help explain their business model, 2% gave a clear description of their areas of competitive advantage and 2% had some explanation of differences in segmental business models (PwC, 2015).

If organisations are not fast enough, then they should look at what they are failing to automate well – the interaction of process and technology. If organisations are not efficient enough, then they should look at what they are failing to scale – the interaction of people and process. If organisations are not creating new value, they should look at what we're failing to innovate – the interaction of people and technology (Penn, 2018). Hence there is a need to include the Technology element as one of the independent variable to identify if organisations are in line with the technological advancement.

The competitive behaviour at the top level of the organisation could have a positive impact on firm results. In the case of BODs, diversity enhances higher creativity,

innovation and quality decision-making, which is why this research expects a comparable strategic result, especially involving the boards of directors (Zahra & Pearce, 1989), since boards are the most important players, boards are also responsible for the surveillance role of shareholders (Hambrick, 1996).

Research indicates that growing diversity on boards of directors would be useful to the organisation in terms of the acquisition of critical assets (Pfeffer & Salancik, 1978) and, where corporate governance is concerned, advantages at the strategic stage are strongly linked to the varied top leadership (Eisendardt & Bougeois, 1988). Occupational diversity among board members is also favourably linked to performance in the context of social obligations (Siciliano, 1996). Zander (1993) stresses that attempts must also be made to make the fullest possible use of the skills of the board members.

It should be emphasized that Integrated reporting (<IR>) represents a totally different concept as it aims to combine material financial, environmental, and social and governance (ESG) information into one business report in order to strengthen transparency (Velte, 2022; Lai et al., 2016). In line with financial reporting, materiality represents a major principle of IR, as the information needs of shareholders and other stakeholders should be explicitly reflected during the preparation of the report (Velte, 2022; Deegan & Rankin, 1997).

Therefore, this study aims to determine if the Integrated Business Model are the drivers towards firm financial performance moderated by the MCCG 2017 – 50% Independent Board of Directors.

3. RESEARCH OBJECTIVES

Following are objectives of the proposed study:

1. To investigate the impact of the ESG strategy through the Integrated Business Model disclosure on financial performance of the top 30 Malaysian PLCs in congruence with Circular Economy.
2. To identify if the moderating role of MCCG 2017 – 50% or more Independent Board of Directors positively affects the relationship between the ESG strategy through the Integrated Business Model and firm financial performance of the top 30 Malaysian PLCs in congruence with Circular Economy.

4. LITERATURE REVIEW

An integrated report includes eight Content Elements that are fundamentally linked to each other and are not mutually exclusive such as the components required in an Integrated Report which first includes Organizational overview and external environment which is explained as what does the organization do and what are the circumstances under which it operates?, secondly the component on Governance which describes on how does the organization's governance structure support its ability to create value in the short, medium and long term?, thirdly, the Business model component which describes on what is the organization's business model?, fourthly, the component on the Risks and opportunities which are described as what are the specific risks and opportunities that affect the organization's ability to create value over the short, medium and long term, and how is the organization dealing with them?, the fifth component would be on Strategy and resource allocation which describes on where does the organization want to go and how does it intend to get there?, the sixth component is on Performance, which describes on To what extent has the organization achieved its strategic objectives for the period and what are its outcomes in terms of effects on the capitals?, the seventh component which is the Outlook, describes on what challenges and uncertainties is the organization likely to encounter in pursuing its strategy, and what are the potential implications for its business model and future performance?, and finally, the component on the Basis of presentation, describes on how does the organization determine what matters to include in the integrated report and how are such matters quantified or evaluated? (International Integrated Reporting Council, 2021; 2013)

At the core of the organization is its business model, which draws on various capitals as inputs and, through its business activities, converts them to outputs (products, services, by-products and waste). The organization's activities and its outputs lead to outcomes in terms of effects on the capitals. The capacity of the business model to adapt to changes (e.g., in the availability, quality and affordability of inputs) can affect the organization's longer term viability (International Integrated Reporting Council, 2013).

Several corporate scandals and corporate governance failures in the 1990/2000s due to fraud and insufficient systems of control have raised the question of the credibility of corporations and particularly the governance (Tariq & Abbas 2013; Larsson 2009). The financial crisis contributed to an increase in focus on corporate governance, mainly effective risk management and reporting practices (Ntim et al. 2013). One effect is that

governance codes have grown in quantity around the world in recent decades (Abbas & Tariq 2013).

The need for corporate governance reporting exists primarily in companies where the role of financier and manager are separated.

The characteristics of top management (e.g. demographic) influence the decisions they make and therefore the actions taken by the organizations they lead. This occurs because demographic characteristics are associated with many cognitive bases, values and perceptions that influence decision-making at the top management level. Top management members could have a greater demographic diversity, influence the decision-making process in top management and make a positive contribution to strong performance (Marimuthu and Kolandaisamy, 2009).

Thus, the competitive behaviour at the top level of the organisation could have a positive impact on firm results. In the case of BODs, diversity enhances higher creativity, innovation and quality decision-making, which is why this research expects a comparable strategic result, especially involving the boards of directors (Zahra & Pearce, 1989), since boards are the most important players, boards are also responsible for the surveillance role of shareholders (Hambrick, 1996).

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MCCG 2017: 50% or more Independent Board of Directors

The MCCG proposes that one-third of the company's management board shall include autonomous managers. Many studies examined the connection between corporate governance and firm performance, especially board independence. However, the results are largely inconclusive on the relation between the independence of the Board and firm results (Terjesen, Couto & Francisco, 2016). Prior researchers have used three theories mainly to explain such a relationship as follows:

First, agency theory describes conflicts of interest (Fama & Jensen, 1983), both between the principal (owner) and agent (management). This theory states that companies can enhance their efficiency by having a big amount of autonomous directors on the board because such directors are external persons with no critical interest in the enterprise (Terjesen et al., 2016) and are able to monitor and advise managers who

in turn can promote and impact shareholder interests (Brickley & Zimmerman, 2010). This opinion, however, was called into question. First, autonomous managers who are generally members of various boards are very busy leading to bad corporate results (Kumar & Sivaramakrishnan, 2008).

Secondly, CEOs cannot be influenced by autonomous managers to act on their behalf because the office is not available (Oshry, Hermalin & Weisbach, 2010; Rashid, 2018). The theory of resource dependence focuses secondly upon the external resources provided by independent managers for their firms (e.g. knowledge, network or social resources, expertise and legitimacy). Unique experiences and expertise that other companies obtain from autonomous management companies are reported by Terjesen et al. (2016), and this resource can assist companies boost their profits and succeed. But, considering the absence of inside information from autonomous managers, they may not be sufficiently skilled at fulfilling their duties (Rashid, 2018).

Thirdly, the upper echelons theory illustrates that managers' behavior, expertise and values can affect company efficiency. The authorisation of autonomous managers has been discovered to support effective surveillance and to boost firm value. Zhu, Ye, Tuger and Chan (2016.) But Hambrick (2007) asserted that managers in the boardroom could not use their knowledge and abilities. The independence of the board of directors may not enhance the efficiency of the business (Laux, 2008; Wang, Lu & Tsai, 2011). Independent managers must therefore apply their expertise, expertise and expertise in decision-making (Adams & Ferreira 2007).

The board's significant input is to formulate the policy of the business and to exercise adequate supervisory role throughout the activities of the business (Zinkin, 2010). Independent managers could contribute their autonomous opinions and engage actively in the debate of the board. They are going to represent shareholders on the board of the company. As an independent person, they have to ensure their presence and performance free of any insider or management influence. The business appoints autonomous managers to monitor executive managers' performance and top managers. They would therefore promote shareholders' interest by maximizing the importance of shareholders.

Zinkin (2010) indicated that autonomous managers should address several fields that would contribute to efficient business strategy formulation. They should ask business-related questions that the business is venturing into, product market segmentation, and precious market segmentation clients (Fuzi, Rahim and Tan, 2012).

Independent managers with appropriate industry background and broad knowledge would be more prepared to challenge Chief Executive Officers (CEOs) and the board discussion leadership team. In the structure of board members and board committees,

Bursa Malaysia requires the autonomous managers. For example, most of them are autonomous, all members of the audit committee must be non-executive directors. These would safeguard the interests of shareholders from controlled leadership to guarantee autonomous managers. The 2012 Malaysian Code on Corporate Governance (MCCG) has made a number of suggestions to strengthen the independence of the company's board. The Code emphasizes the nomination committee structure, which should consist of a majority of autonomous managers. Furthermore, if the company's chairperson is not autonomous, the board's majority members must be autonomous and its autonomous directors should be reviewed annually by the board (Syed Fuzi et al, 2016).

The Malaysian Code of Corporate Governance 2017 (MCCG 2017) states that in its Principle A, that Board appointments and senior management are based on objective criteria, merit and due regard for the diversity of abilities, experience, age, cultural background and gender. Furthermore, MCCG 2017 states that in Principle A which focused on Board Leadership and Effectiveness where Part II consists of Board Composition that covered Practice Note 4.1, the Board must have at least 50% Independent Board Directors and for Large Companies, the majority must consist of Independent Board of Directors (Malaysian Securities Commission, 2017).

Large Companies as defined by the Securities Commission as either companies on the FTSE Bursa Malaysia Top 100 Index or companies with market capitalization of RM 2 billion and above at the start of the companies' financial year (Malaysian Securities Commission, 2017).

This is a step-up from the Malaysian Code of Corporate Governance 2012 (MCCG 2012) which did not specifically mention the minimum 50% level of Independent Board of Directors.

Technology (as the fifth component of the Integrated Business Model)

Enterprise resource planning (ERP) refers to a type of software that organizations use to manage day-to-day business activities such as accounting, procurement, project management, risk management and compliance, and supply chain operations. A complete ERP suite also includes enterprise performance management, software that helps plan, budget, predict, and report on an organization's financial results. ERP systems tie together a multitude of business processes and enable the flow of data between them. By collecting an organization's shared transactional data from multiple sources, ERP systems eliminate data duplication and provide data integrity with a single source of truth. Today, ERP systems are critical for managing thousands of businesses of all sizes and in all industries (Oracle, 2019).

ERP systems are designed around a single, defined data structure that typically has a common database. This helps ensure that the information used across the enterprise is normalized and based on common definitions and user experiences. These core constructs are then interconnected with business processes driven by workflows across business departments (e.g. finance, human resources, engineering, marketing, operations), connecting systems and the people who use them. Therefore, ERP is the vehicle for integrating people, processes, and technologies across a modern enterprise (Oracle, 2019).

It's impossible to ignore the impact of ERP in today's business world. As enterprise data and processes are corralled into ERP systems, businesses can align separate departments and improve workflows, resulting in significant bottom-line savings. Examples of specific business benefits include; Improved business insight from real-time information generated by reports; Lower operational costs through streamlined business processes and best practices; Enhanced collaboration from users sharing data; in contracts, requisitions, and purchase orders ; Improved efficiency through a common user experience across many business functions and well-defined business processes; Consistent infrastructure from the back office to the front office, with all business activities having the same look and feel; Higher user-adoption rates from a common user experience and design; Reduced risk through improved data integrity and financial controls; Lower management and operational costs through uniform and integrated systems (Oracle, 2019).

5. THEORETICAL FRAMEWORK

5.1. Underpinning theory - Stakeholder Theory

Stakeholders of a corporation are another source of reporting and control different reports of reporting. Increased stakeholder pressure and corporate stakeholder awareness were found to affect the type of disclosed non-financial information. A corporate report can be used as a tool to involve stakeholders as well as to address issues posed by stakeholders. Several businesses provided their investors with non-financial information that they said was of value.

5.2. Lens theory - Agency Theory

According to Jensen and Meckling (1976), agency relationship is formed when employees, who are the administrators, appointed by the principal, who is the owner of the company, are given the authority to make decisions on behalf of the principal. Due to information asymmetry between owners and managers, an organization problem usually occurs. Disclosure of non-financial information can mitigate the issue of information asymmetry as it promotes balance of interests between management and minority interests (Luk and Yap, 2017; Frias-Aceituno et al., 2012).

6. CONCEPTUAL FRAMEWORK

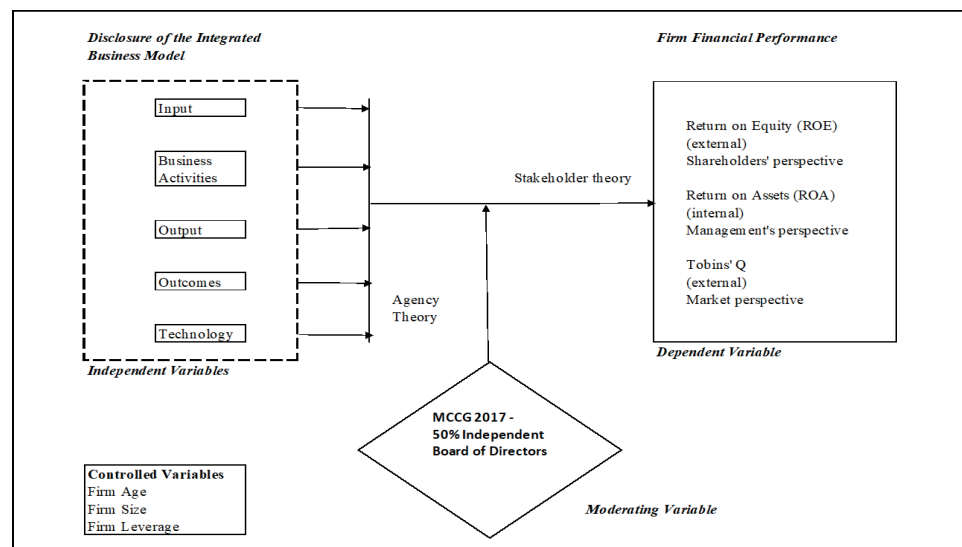


Figure 1: Conceptual Framework.

7. HYPOTHESES OF THE STUDY

The hypotheses below have been developed from the gaps of past research:

Hypothesis 1: The disclosure of Input will have a significant positive impact on firm performance

Hypothesis 2: The disclosure of Business Activities will have a significant positive impact on firm performance

Hypothesis 3: The disclosure of Output will have a significant positive impact on firm performance

Hypothesis 4: The disclosure of Outcomes will have a significant positive impact on firm performance

Hypothesis 5: The disclosure of Technology will have a significant positive impact on firm performance

Hypothesis 6: The Malaysian Code of Corporate Governance 2017 (MCCG 2017) – 50% Independent Board of Directors has a positive significant moderating effect on the relationship between Input, Business Activities, Output, Outcomes and Technology and the firm performance

8. MODEL SPECIFICATION

Model 1 to Model 5 (direct relationship between the IV1 to IV5 and financial performance):

$$FP = \beta_0 + \beta_1 + \dots + \beta_6AGE + \beta_7SIZE + \beta_8LEV + \epsilon_{it}$$

Whereas

FP = Return on Equity, Return on Assets and Tobin's Q for measuring accounting performance of the Malaysian oil and gas PLCs

SIZE = Firm's size (controlled variable)

AGE = Firm's age (controlled variable)

LEV = Firm's leverage (controlled variable)

ϵ_{it} = Error term

Model 6 (is the model that reflects the moderating role of MCCG 2017):

$$FP = \beta_0 + \beta_1INP + \beta_2(INP \times INDBOD) \dots + \beta_{11}SIZE + \beta_{12}AGE + \beta_{13}LEV + \epsilon_{it}$$

INP = Input

IND= MCCG 2017 – 50% or more Independent Board of Directors (Moderator variable)

Measurement of Variables: Independent Variables

Independent Variable 1 to 4: Integrated Business Model (International Integrated Reporting Council, 2013)

1. Input

An integrated report shows how key inputs relate to the capitals on which the organization depends, or that provide a source of differentiation for the organization, to the extent they are material to understanding the robustness and resilience of the business model. An integrated report does not attempt to provide an exhaustive list of all inputs. Rather, the focus is on those that have a material bearing on the

ability to create value in the short, medium and long term, whether or not the capitals from which they are derived are owned by the organization. It may also include a discussion of the nature and magnitude of the significant trade-offs that influence the selection of inputs (International Integrated Reporting Council, 2021, 2013).

2. Business Activities

An integrated report describes key business activities. This can include: How the organization differentiates itself in the market place (e.g. through product differentiation, market segmentation, delivery channels and marketing); The extent to which the business model relies on revenue generation after the initial point of sale (e.g. extended warranty arrangements or network usage charges); How the organization approaches the need to innovate; How the business model has been designed to adapt to change. When material, an integrated report discusses the contribution made to the organization's long-term success by initiatives such as process improvement, employee training and relationships management (International Integrated Reporting Council, 2021, 2013).

3. Output

An integrated report identifies an organization's key products and services. There might be other outputs, such as by-products and waste (including emissions), that need to be discussed within the business model disclosure depending on their materiality (International Integrated Reporting Council, 2021, 2013).

4. Outcomes

An integrated report describes key outcomes. Outcomes are the internal and external consequences (positive and negative) for the capitals as a result of an organization's business activities and outputs. The description of outcomes includes:

Both internal outcomes (e.g. employee morale, organizational reputation, revenue and cash flows) and external outcomes (e.g. customer satisfaction, tax payments, brand loyalty, and social and environmental effects). Both positive outcomes (i.e. those that result in a net increase in the capitals and thereby create value) and negative outcomes (i.e. those that result in a net decrease in the capitals and thereby erode value) (International Integrated Reporting Council, 2021, 2013).

Independent Variable 5: Industrial Revolution 4.0 (Forbes, 2019)

5. Technology

Technology as per the Integrated Business Model will contain items of Big Data Analytics, Blockchain/Distributed Ledgers, Robotics Process Automation and Cloud Enterprise Resource Planning (National Fourth Industrial Revolution Policy Malaysia, 2021; Malaysian Digital Economy Blueprint, 2021; Forbes, 2013).

9. RESEARCH METHODOLOGY AND DATA COLLECTION PROCEDURES

The study examines the top 30 Malaysian public listed companies based on market capitalisation which publish Annual Reports or Integrated Reports.

The data will be gathered from 2016 to 2018. This study proposes a purposive sample of the top 30 public listed companies (PLCs) on Bursa Malaysia based on market capitalisation. This study proposes a descriptive statistics and regression analysis methodology and also quantitative content analysis to analyse the annual reports or integrated reports. Board Independence will be measured through the Malaysian Code of Corporate Governance 2017 (MCCG 2017) which states that in its Principle A, that Board appointments and senior management are based on objective criteria, merit and due regard for the diversity of abilities, experience, age, cultural background and gender. Furthermore, MCCG 2017 states that in Principle A which focused on Board Leadership and Effectiveness where Part II consists of Board Composition that covered Practice Note 4.1, the Board must have at least 50% Independent Board Directors and for Large Companies, the majority must consist of Independent Board of Directors (Malaysian Securities Commission, 2017).

Content analysis is the most popular and widely used method in research and accounting disclosures (Zahid and Ghazali, 2015; Boesso and Kumar, 2007). Content analysis may have both qualitative and quantitative measurements. Quantitative content analysis is considered to be the more reliable analysis (Zahid and Ghazali, 2015; Day and Woodward, 2009). The current study will use the quantitative content analysis procedure.

The data coding as per the content analysis method would be based on themes, words, or items found in the data (Nilsson, 2016; Collins and Hussey, 2014).

During the classification, a scoring system will be used to determine to what extent the items were reported. The scoring system was based on a review of previous studies that used content analysis in order to determine the appropriate number of points. Larsson and Ringholm (2014) and Eccles and Serafeim (2014) used four-point systems while Wang, Song and Yao (2013) used a three-point system. Boiral (2013) and Setia et

al. (2015) both used two-point systems. This study will utilise a five-point system similar to a previous research on Integrated Reporting by Nilsson (2016), to allow for some differentiation between the companies while still being a time-effective method.

Furthermore, this study will employ a scoring index for the disclosure of the Integrated Business Model based on the International Integrated Reporting Framework published in 2013 by the International Integrated Reporting Council.

The proposed study is important to the public listed companies as it allows the annual report and integrated report preparers to realise the importance of preparing and collating meaningful data for stakeholders and also for internal planning use in order to remain legitimate in the eyes of the stakeholders and the general public.

Independent Variable 1 to 4: Integrated Business Model (International Integrated Reporting Council, 2013)

1. Input
2. Business Activities
3. Output
4. Outcomes

Independent Variable 5: Industrial Revolution 4.0 (Forbes, 2019)

5. Technology

Moderating Variable -- MCCG 2017 : 50% or more Independent Board of Directors

Board composition influences the ability of the board to fulfil its oversight responsibilities. An effective board should include the right group of people, with the right amount of diversity in which in this context is in terms of unbiased decisions made by the board of directors in the form of independent board of directors.

Dependent Variable -- Firm Performance (Return on Equity, Return on Assets and Tobin's Q)

Return on equity is defined as a measure of how much the firm generates for its owners, ROE is equal to net profit divided by the book value of shareholder's equity. Shareholder's equity usually includes the value of reserves as these could be paid out to shareholders (Richard, Devinney, Yip and Johnson, 2009).

Several indicators, like return on asset (ROA) (Huang, Oua, Chena, & Lin, 2006; Khanna & Palepu, 2000), return on equity (ROE), Tobin's Q (Habib & Ljungqvist, 2005; Khanna & Palepu, 2000); market to book value ratio (MBVR) (Sarkar & Sarkar, 2000), return on employed capital, operating profit margin, etc., have been used in the existing

literature to evaluate firm performance. Indicators like ROA and ROE are accounting-based measures of profitability, whereas indicators such as Tobin's Q and MBVR indicate stock-market based measures. The accounting-based measures reflect the past financial performance, whereas the market-based measure the future performance. If ROA were chosen as an indicator of firm performance, then it would only explain how effectively the firm has utilized the assets to generate earnings.

The Tobin's Q ratio equals the market value of a company divided by its assets' replacement cost. Thus, equilibrium is when market value equals replacement cost.

The Tobin's Q ratio is a quotient popularized by James Tobin of Yale University, Nobel laureate in economics, who hypothesized that the combined market value of all the companies on the stock market should be about equal to their replacement costs. While Tobin is often attributed as its creator, this ratio was first proposed in an academic publication by economist Nicholas Kaldor in 1966. In earlier texts, the ratio is sometimes referred to as "Kaldor's v." The Tobin's Q formula is calculated as 'The Total Market Value of the Firm / Total Asset Value of the Firm. In this study, Tobin's Q will measure the market perspective of the implementation of the Integrated Business Model.

Control Variables

The three controlled variables that will be used in this research are firm age, firm size and leverage. Firm size is one of the frequently used controlled variables in explaining the relationship between the adoption of integrated reporting and firm performance.

Since large companies will be under the scrutiny of the public, therefore these large companies namely the Malaysian PLCs are most likely and are expected to publish the Annual Report, Sustainability Report and the Integrated Report.

As a result of publishing the corporate governance disclosures, the value of the firm would increase. Since the firm's size depends on the firm's age where size and age both are complementary to each other therefore the firm size and firm age needs to be controlled.

Too much debt can be dangerous for a company and its investors. However, if a company's operations can generate a higher rate of return than the interest rate on its loans, then the debt is helping to fuel growth in profits. Nonetheless, uncontrolled debt levels can lead to credit downgrades or worse. On the other hand, too few debts can also raise questions. A reluctance or inability to borrow may be a sign that operating margins are simply too tight. Therefore the third control variable that will be used in this study is the firm leverage which needs to be controlled as the oil and gas firms has different levels of leverage in order for the results not to be distorted.

The theoretical significance are as follows:

1. **Stakeholder theory** – a stakeholder oriented corporate report focusing on the disclosure of the **FIVE components of the Integrated Business Model**
2. **Agency theory** – The agency theory posits that conflicts between managers and shareholders can be reduced through the disclosure of the **FIVE components of the Integrated Business Model**

The methodological significance would be the measurement of the variables using the new Women Board of Directors Scoring Index which looks at the measurement of the number of women directors.

10. RESULTS AND FINDINGS

TABLE 1: Descriptive Statistics.

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	90	.079	.106	-.14	.603
ROE	90	.278	.566	-.331	3.144
TOBIN'S Q	90	231.725	491.782	.15	1989.027
INPUT	90	.511	.31	.167	1
BUSINESS ACTIVITIES	90	.527	.206	.143	.857
OUTPUT	90	.708	.094	.5	.75
OUTCOME	90	.637	.081	.333	.778
TECHNOLOGY	90	.207	.246	0	1
INDEPENDENT BOD	90	.497	.121	.167	.8
FIRM SIZE	90	6.564	1.151	4.224	7.873
FIRM AGE	90	1.517	.256	.602	2.025
FIRM LEVERAGE	90	1.771	2.214	.048	10.246

10.1. Level of disclosures / practices

Table 1 reports the mean value of Integrated Business Model - Output disclosure of 70.83 which is the highest among the 5 elements of the Integrated Business Model in which the second highest mean value is the Integrated Business Model – Outcome at 63.70 and the lowest is the Integrated Business Model - Technology at 20.67. However, the mean values indicated are moderate at an average of 50% of total disclosures across all types of the Integrated Business Models. The top 30 Malaysian PLCs on Bursa Malaysia

reflects that they are focused on increasing their public reputation by disclosing more on the OUTPUT and OUTCOME which demonstrates their achievements over the years to the shareholders and stakeholders. These disclosures do not dramatically increase over the years as companies do not change their policies in a drastic manner but incrementally over the years in which therefore the disclosure changes from year on year are not drastically different or may not change at all.

10.2. Frequency of disclosures

The highest disclosed Integrated Business Model component is the Input which mainly includes the Integrated Reporting's 6 Capitals which is not unusual for the Top 30 Malaysian PLCs based on market capitalization as the best PLCs would want to disclose to the shareholder and stakeholders that they have implemented the 6 capitals of the Integrated Reporting framework.

Over the years, there are no expected drastic changes in the disclosure of maximum number of disclosures for the five elements of the Integrated Business Models. This indicates a very bad sign for the Top 30 Malaysian PLCs in which they are dealing with stakeholders that are operating at a global level and needs to be more transparent of the 5 elements of the Integrated Business Model.

In this study, ROA, ROE and Tobins Q are used to measure the firm financial performance in which the ROA is used as a basis of measurement on the management's perspective taking an internal outlook and the ROE is used to measure the firm performance based on the shareholder's perspective taking an external outlook. Further to that Tobins Q will measure the market perspective.

10.3. Regression Analysis

Multiple regression is applied to test the first and second objective of to investigate the impact of the disclosure extent of the Integrated Business Models on the financial performance of the Top 30 Malaysian PLCs which the results are shown in Table 2 to 4 below.

The overall findings under the Fixed-Effects model shows significance for F-statistics of 0.00027 for Prob > F within Return on Assets as the results shows less than <0.05 and this proves that all coefficients in the model are different from zero. Furthermore, the analysis of the Two-tail p-values test in which the p-value should have an alpha of 0.10 or less found that the p-values within $P > |t|$ are not significant for the

TABLE 2: Fixed Effect Model (FE) – ROA with Moderation Effect of the Independent Board of Directors.

ROA	Coef.	St.Err.	t-value	p-value	[95% Conf Interval]	Sig
INPUT	.152	.11	1.38	.174	-.069 .373	
BUSINESS ACTIVITIES	-.054	.381	-0.14	.888	-.82 .712	
OUTPUT	0	.	.	.	.
OUTCOME	0	.	.	.	.
TECHNOLOGY	.183	.165	1.11	.274	-.149 .516	
IND BOD	-.745	.539	-1.38	.174	-1.829 .34	
FIRM SIZE	-.167	.068	-2.44	.018	-.305 -.03	**
FIRM AGE	-.643	.195	-3.30	.002	-1.034 -.251	***
FIRM LEV	-.031	.012	-2.62	.012	-.054 -.007	**
INT1	-.304	.22	-1.38	.174	-.747 .139	
INT2	.429	.331	1.30	.2	-.235 1.094	
INT3	-.776	.794	-0.98	.334	-2.372 .821	
INT4	2.096	1.124	1.86	.068	-.164 4.356	*
INT5	-.49	.297	-1.65	.106	-1.088 .108	
Constant	2.118	.56	3.78	0	.991 3.244	***
Mean dependent var	0.079		SD dependent var	0.106		
R-squared	0.436		Number of obs	90.000		
F-test	3.091		Prob > F	0.000		
Akaike crit. (AIC)	-415.662		Bayesian crit. (BIC)	-383.165		

*** $p < .01$, ** $p < .05$, * $p < .1$

independent variables and also for the independent variables with moderation of the Independent Board of Directors. Two of the five independent variables – OUTC and OUTP are omitted due to multicollinearity as these two variables are time-invariant variables in which OUTC is defined as OUTCOME and consists of nine items such as Customer Satisfaction, Profit/loss, Shareholder return, Asset consumption, Contribution to local economy through taxes, Job creation, Employee development and engagement, Improved standard of living and Environmental impact. OUTP is defined as OUTPUT and consists of four items which are Products, Services, Waste and Other by products. One side effect of the fixed-effects models is that they cannot be used to investigate time-invariant causes of the dependent variables.

The overall findings under the Fixed-Effects model shows significance for F-statistics of 0.0116 for Prob > F within Return on Equity as the results shows less than <0.05 and this proves that all coefficients in the model are different from zero. Furthermore, the analysis of the Two-tail p-values test in which the p-value should have an alpha of 0.10 or less found that the p-values within $P > |t|$ are not significant for the

TABLE 3: Fixed Effect Model (FE) – ROE with Moderation Effect of the Independent Board of Directors.

ROE	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
INPUT	.621	.362	1.71	.093	-.108	1.35	*
BUSINESS ACTIVITIES	-.246	1.256	-0.20	.845	-2.771	2.278	
OUTPUT	0	.	.	.	.	.
OUTCOME	0	.	.	.	.	.
TECHNOLOGY	.333	.545	0.61	.544	-.763	1.429	
IND BOD	-1.286	1.778	-0.72	.473	-4.86	2.288	
FIRM SIZE	-.525	.226	-2.33	.024	-.979	-.071	**
FIRM AGE	-1.788	.642	-2.79	.008	-3.079	-.498	***
FIRM LEV	.114	.039	2.95	.005	.036	.192	***
INT1	-1.138	.726	-1.57	.124	-2.598	.322	
INT2	1.34	1.09	1.23	.225	-.85	3.531	
INT3	-2.501	2.618	-0.96	.344	-7.765	2.764	
INT4	4.944	3.706	1.33	.188	-2.506	12.395	
INT5	-1.369	.98	-1.40	.169	-3.339	.601	
Constant	6.017	1.848	3.26	.002	2.303	9.732	***
Mean dependent var		0.278		SD dependent var		0.566	
R-squared		0.387		Number of obs		90.000	
F-test		2.524		Prob > F		0.001	
Akaike crit. (AIC)		-200.943		Bayesian crit. (BIC)		-168.445	
*** $p < .01$, ** $p < .05$, * $p < .1$							

independent variables and also for the independent variables with moderation of the Independent Board of Directors. Two of the five independent variables – OUTC and OUTP are omitted due to multicollinearity as these two variables are time-invariant variables in which OUTC is defined as OUTCOME and consists of nine items such as Customer Satisfaction, Profit/loss, Shareholder return, Asset consumption, Contribution to local economy through taxes, Job creation, Employee development and engagement, Improved standard of living and Environmental impact. OUTP is defined as OUTPUT and consists of four items which are Products, Services, Waste and Other by products. One side effect of the fixed-effects models is that they cannot be used to investigate time-invariant causes of the dependent variables.

The overall findings under the Fixed-Effects model shows insignificance for F-statistics of 0.2657 for Prob > F within TobinsQ as the results shows more than 0.05 and this proves that all coefficients in the model are not different from zero. Furthermore, the analysis of the Two-tail p-values test in which the p-value should have an alpha of 0.10 or less found that the p-values within $P > |t|$ are not significant for

TABLE 4: Fixed Effect Model (FE) – TOBINS Q with Moderation Effect of the Independent Board of Directors.

TOBIN'S Q	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
INPUT	33.649	298.361	0.11	.911	-566.247	633.544	
BUSINESS ACTIVITIES	419.738	1033.632	0.41	.686	-1658.52	2497.995	
OUTPUT	0	.	.	.	.	.
OUTCOME	0	.	.	.	.	.
TECHNOLOGY	-25.662	448.755	-0.06	.955	-927.945	876.62	
IND BOD	-3961.992	1463.348	-2.71	.009	-6904.25	-1019.733	***
FIRM SIZE	205.27	185.882	1.10	.275	-168.47	579.01	
FIRM AGE	131.489	528.422	0.25	.805	-930.975	1193.953	
FIRM LEV	-31.364	31.807	-0.99	.329	-95.317	32.588	
INT1	-159.95	597.863	-0.27	.79	-1362.035	1042.134	
INT2	105.091	896.953	0.12	.907	-1698.355	1908.537	
INT3	-358.072	2155.408	-0.17	.869	-4691.81	3975.666	
INT4	6591.572	3050.45	2.16	.036	458.231	12724.913	**
INT5	-431.283	806.615	-0.53	.595	-2053.091	1190.524	
Constant	-1412.317	1520.912	-0.93	.358	-4470.316	1645.681	
Mean dependent var		231.725		SD dependent var		491.782	
R-squared		0.241		Number of obs		90.000	
F-test		1.272		Prob > F		0.210	
Akaike crit. (AIC)		1007.437		Bayesian crit. (BIC)		1039.934	

*** $p < .01$, ** $p < .05$, * $p < .1$

the independent variables and also for the independent variables with moderation of the Independent Board of Directors. Two of the five independent variables – OUTC and OUTP are omitted due to multicollinearity as these two variables are time-invariant variables in which OUTC is defined as OUTCOME and consists of nine items such as Customer Satisfaction, Profit/loss, Shareholder return, Asset consumption, Contribution to local economy through taxes, Job creation, Employee development and engagement, Improved standard of living and Environmental impact. OUTP is defined as OUTPUT and consists of four items which are Products, Services, Waste and Other by products. One side effect of the fixed-effects models is that they cannot be used to investigate time-invariant causes of the dependent variables and for organisations OUTPUT and OUTCOME are considered as time-invariant variables as these two cannot change drastically over time or year on year.

11. SIGNIFICANCE OF STUDY

Overall only the internal top management as represented by the ROA and the external shareholders are represented by the ROE shows significance which are of great importance as these are the most important stakeholders in any organization needed to support the Integrated Business Model agenda using the ESG strategy in congruence with Circular Economy aspiration catalyzed by the Independent Board of Directors.

12. CONCLUSION AND FUTURE RECOMMENDATIONS

The development of Integrated Reporting is designed to enhance and consolidate existing reporting practices and, through collaboration, consultation and experimentation, to move towards a reporting framework that provides the information needed to assess organizational value in the 21st century.

This study is restricted to only 1 year after the launch of MCCG 2017, which is 2018, in which future research could be undertaken to analyze the execution beyond one year of the application of the Code.

Alternatively, this study will be able to see any early implementation of the MCCG 2017 by the top 30 Malaysian PLCs in order to maintain corporate reputation in the context of board independence.

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