

Measuring the impact of corporate governance on non-financial reporting in the top HEIs worldwide

Mahalaximi Adhikariparajuli
Mehul Chhatbar
Abeer Hassan

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Mahalaxmi Adhikariparajuli

Lecturer in Accounting, School of Business, Law and Social Sciences, Abertay University,

Bell Street, DUNDEE, DD1 1HG

Email: m520833@uad.ac.uk

Mehul Chhatbar

Lecturer in Accounting, Faculty of Business and Law, Coventry University,

William Morris Building, Gosford Street, COVENTRY, CV1 5DL

Email: ad4875@coventry.ac.uk

Abeer Hassan

Reader in Accounting, School of Business and Creative Industries,

G226 Gardner Building, University of the West of Scotland, Paisley, PA1 2BE, UK

Email: Abeer.Hassan@uws.ac.uk

Abstract

Purpose – This study aims to measure the relationship between corporate governance and Non-Financial Reporting (NFR) in Higher Education Institutions (HEIs). Board effectiveness, student engagement, audit quality, Vice-Chancellors (VC) pay, and VC gender are targeted for analysis.

Design/methodology/approach – This study is based on content analysis. We used the EU NFR Directive (2014/95/EU) to measure NFR. This includes environmental, corporate social responsibility, human rights, corporate board effectiveness, and corruption and bribery. Cross sectional data was collected from 89 HEIs worldwide across 15 different countries over three years. Content analysis, the weighted scoring method and panel data analysis are employed to obtain the results.

Findings – Through a neo-institutional theoretical lens, this study provides a broader understanding of NFR content disclosure practices within HEIs. Our findings reveal that the audit quality, VC pay, and VC gender are significantly and positively associated with NFR content disclosure. However, board effectiveness has a significant negative impact on NFR content disclosure. More interestingly, our findings reveal that student engagement has an insignificant association with NFR content disclosure and there significant difference on the level of NFR content disclosure across universities situated in different geographical region such as USA, Australia, UK, and EU, Asia & Canada. Our findings have important implications for regulators and policymakers. Our evidence appears to be robust when controlling for possible endogeneities.

Originality/value – The study contributes to the literature on corporate non-financial disclosure as it provides new insights of corporate governance mechanism and NFR disclosure within HEIs.

Keywords

Non-financial reporting, higher education institutions, neo-institutional theory, panel data, corporate governance.

Paper type Research Paper

1. Introduction

All public corporations worldwide, including universities, are under more pressure than ever to disclose more information related to their activities, which may have positive or negative impacts on the environment, society and the economy (Saraite-Sariene *et al.*, 2019; Krasodomska *et al.*, 2019; Grade Sánchez *et al.*, 2020). In addition, many researchers and practitioners have discussed the importance of disclosure of non-financial information to a wider group of stakeholders; the public, society, employees, customers, regulators, policy makers and shareholders (Adams and Zutshi, 2004; Ntim *et al.*, 2017; Elmaghri *et al.*, 2021). It is important to mention that, although the term Non-Financial Reporting (NFR)¹ is ambiguous and encourages the disclosure of information related to the social and environmental impact of corporate activities, it advances corporate accountability, transparency, and legitimacy (La Torre *et al.*, 2020; Pizzi *et al.*, 2021).

We selected HEIs as location for our study. This is because HEIs are responsible for the significance influence over a large population of future leaders (Adams, 2018; Nejati *et al.*, 2011). This influence is not limited to teaching and research, but it extends to include the need and ability to maintain long-terms performance comparing with competitors (Ismail & Shujaat, 2019; Dahan & Senol, 2012). Therefore, there is a need to recognize Corporate Social Responsibilities (CSR) as a core component of the function of universities, rather than as a separate consideration (Velte & Stawinoga, 2017; Ismail & Shujaat, 2019). To participate in CSR activities, universities started gearing their key performance indicators (KPIs) towards social responsibility by voluntarily integrating social activities into their core policy and social performance measurements (de Castro & Jabbour, 2013; Rahman *et al.*, 2019). Therefore, implication of NFR is crucial within the HEIs sector.

¹ Non-Financial Reporting (NFR) broadly refers to the formal communication of organisational policies, practices and performance information that are not captured or emphasised within the mainstream framework of financial accounting and reporting (Jackson *et al.*, 2020; Stolowy & Paugam, 2018).

We agree with the author Baboukardod (2017) that there are numerous terminologies to represent NFR practice. This includes Corporate Social Responsibility (CSR) reporting, Environmental, Social and Governance (ESG) disclosure, Global Reporting Initiative (GRI), Intellectual Capital Reporting (ICR), and Human Capital Measurement and Reporting (HCMR). This is accompanied by the involvement of governments and regulatory bodies worldwide (United Nations, European Union, Organisation for Economic Cooperation and Development, World Bank, Financial Stability Board) in developing recommendations on NFR, particularly in relation to the social and environmental impacts of corporate activities. This includes issuance of voluntary guidelines suggesting the inclusion of NFR (such as the GRI, and the Integrated Reporting (IR) framework) and mandatory guidelines, such as the European Union (EU) NFR Directive (2014/95/EU).

The EU NFR Directive (2014/95/EU) appears to be obligating companies to disclose non-financial information such as social and environmental policies, diversity on the corporate governance board, anti-corruption and bribery, on the basis of “comply or explain” as a non-binding guideline (Adel *et al.*, 2019; Doni *et al.*, 2020). Such NFR regulations usually identify the content that companies are required to disclose, but do not impose any specific reporting format or require verification by external auditors (Jackson *et al.*, 2020). As a result of the worldwide diffusion of NFR content, we would expect to see different accountability and disclosure on an organisational level, hence the justification for our study to examine the role, processes, and the consequences of NFR regulations.

Various earlier scholars focus their NFR studies in a range of sectors; local government authorities (Gaia & Jones, 2017), and Public Listed Companies (PLCs) (La Torre *et al.*, 2018; Jackson *et al.*, 2020; Doni *et al.*, 2020). Most of these studies have examined the effects of

NFR regulation on the quality of CSR disclosure (Stolowy & Paugam, 2018; Hummel & Rötzel, 2019) and its economic consequences (Baboukardos, 2017; Chen *et al.*, 2018). Moreover, in terms of geographical based NFR studies, earlier scholars were concerned with PLCs situated in different countries, such as in Italy (Balluchi *et al.*, 2021; Cordazzo *et al.*, 2020; Carungu *et al.*, 2020, Pizzi *et al.*, 2020; Doni *et al.*, 2020); in Baltic countries (Dagilienė & Nedzinskienė, 2018); and based on an accountancy body in Poland (Krasodomska *et al.*, 2020). However, few prior studies have focused on NFR studies in HEIs (Saraite-Sariene *et al.*, 2019).

This provides an appropriate justification to investigate and gather data on NFR from HEIs. HEIs can influence a large proportion of future leaders and make a huge impact on short, medium, and long-term value creation (Veltri & Silvestri, 2015; Brusca *et al.*, 2018; Adams, 2018). In addition, empirical studies exploring NFR is not only scarce (Guthrie *et al.*, 2017; La Torre *et al.*, 2020) but also, arguably, presents fragmented and inconsistent results due to practical challenges to convert them into practice (Carungu *et al.*, 2020, La Torre *et al.*, 2020). In prior HEIs voluntary disclosure literature, it is argued that the corporate governance mechanism has a significant influence on HEIs accountability and voluntary disclosure (Gordon *et al.*, 2002; Ntim *et al.*, 2017; Elmaghri *et al.*, 2021). This study seeks to broaden current knowledge and contribute to the existing literature in several ways. The main aim of this paper is to measure the impact of the corporate governance mechanism on NFR in HEIs using (EU) NFR Directive (2014/95/EU) as a NFR disclosure index with more focus on the oversight of environmental, social and economic issues, human rights and anti-corruption policies.

Given the noticeable limitation of prior NFR studies, we believe that our paper contributes to NFR literature in many ways. Firstly, and unlike most of the earlier studies that have mainly been conducted on PLCs, this study advances the current knowledge by providing

new evidence on the corporate governance mechanism and NFR disclosure within top ranked universities published in The World University Ranking. Secondly, this study contributes to the existing literature by measuring the impact of the corporate governance mechanism on NFR disclosure. This research evaluates the impact of corporate governance variables (board effectiveness, quality of audit committee, student engagement, Vice Chancellor (VC) pay and gender) on NFR disclosure. The third contribution of this study is that it builds on neo-institutional theory as it is relevant to HEI context (Adams *et al.*, 2016; Elmaghri *et al.*, 2016; Elmaghri *et al.*, 2021). This enhances our understanding of NFR practical implications in HEIs and illustrates that some HEIs have become role models by adapting to new challenges with the disclosure of more non-financial information to obtain competitive advantage (Adams *et al.*, 2016; Elmaghri *et al.*, 2016). The fourth contribution of this study is to enhance the generalisations available to the results of NFR, this study employs the content analysis method to develop a comprehensive NFR measure covering all five dimensions. We are contributing to the special issue topic by including the implementation and enforcement of NFR policies, differences in NFR regulation across countries and NFR regulation and readability of reports.

This paper is structured to provide a theoretical framework in section 2 followed by the literature review and hypotheses development in section 3. The research methods are imparted in section 4 and the data analysis and results are explained in section 5. The research summary, conclusions and recommendation are presented in section 6.

2. Theoretical Framework

This paper uses neo institutional theory to understand what motivates HEIs to disclose non-financial information and if any interconnection exists between the corporate governance mechanism.

While exploring voluntary non-financial information disclosures, the theories widely employed to understand the practices are institutional theory, legitimacy theory and signalling theory (Hassan *et al.*, 2019; Adhikariparajuli *et al.*, 2021; Elmaghri *et al.*, 2021). However, neo-institutional theory ² has been widely applied in the significant corpus of literature considering non-financial information disclosure within the HEIs sector (e.g., Taggart, 2015; Vodenko *et al.*, 2019; Marquas and Powell, 2020; Elmaghri *et al.*, 2021). Taggart (2015, p. 445) identifies that: Neo-institutional theorists say that structure and processes reflect widely held myths and expectations about the way things should be by the organisations.

For the purpose of this research, Scott (2013) basic assumptions with three pillars neo-institutional theory is adopted which allows a nuanced approach to investigate the relationship between corporate governance mechanism and non-financial information disclosure within the HEIs. Furthermore, recognition of HEIs three pillars and basis of compliance come from multiple sources creates the possibility that non-financial information disclosure criteria can emerge interactively between regulative, normative and cultural cognitive perspective to tackle government regulatory requirements.

According to the neo-institutional theory, organisations are influenced by normative pressure and the corporations are guided by legitimated factors, standard operating processes and professional certifications. This leads towards isomorphism with the institutional environment including increased value creation of organisational survival (Zucker, 1987; Carpenter and Feroz, 2001). It allows organisations to elaborate on the endogenous factors of change where

² Neo-institutional theory ... "A relatively enduring collection of rules and organised practices, embedded in structures of meaning and resources that are relatively invariant in the face of turnover and changing external circumstances." (Budd, 2018, p. 138). As an institution, HEI internalizes its logics through combination of coercion, mimesis and normative isomorphism because in modern society, HEIs management aims to strength the position of university as a corporate actor (Urbanek, 2021).

the individuals of the organisation facilitate or hinder transformations within an organisation (Argento *et al.*, 2018). In this regard, establishing good governance mechanisms can help HEIs to disclose more non-financial information and tackle various stakeholder accountability and transparency demands in order to achieve their competitive advantages (Ntim *et al.*, 2017, Elmaghri *et al.*, 2018; Adams *et al.*, 2016).

According to Elmaghri *et al.* (2021) the voluntary corporate governance disclosure of HEIs is influenced by neo institutional theory, especially isomorphism, which consists of the pressure from the government, political groups, and other stakeholder groups. Chatelain-Ponroy and Morin-Delerm (2016) explain that the discovery of legitimacy drives all public organisations so all voluntary disclosure of HEIs are linked with neo institutional theory and its legitimacy concept. According to the legitimacy view of neo-institutional theory, a general assumption is that the activities of HEIs are desirable, proper, and appropriate within social norms, values, beliefs, and the definition of where HEIs operate are the driving force behind institutional isomorphism.

In this regard, establishing good governance mechanisms can help HEIs to disclose more non-financial information and tackle various stakeholder accountability and transparency demands in order to achieve their competitive advantages (Ntim *et al.*, 2017, Elmaghri *et al.*, 2018; Adams *et al.*, 2016).

Therefore, we follow the stream of research of voluntary disclosure in HEIs and adopt neo institutional theory as we expect that this will help to achieve our research aim of measuring the impact of corporate governance on NFR at HEIs. Firstly, as suggested by Scott, 2013 three pillars of compliance and legitimacy, the relationship between HEIs three pillars of compliance and legitimacy and its impact on HEIs voluntary disclosure remains limited. Secondly, the implication of various rules and regulations, moral governance, and accreditation encourage

HEIs to disclose NFR contents e.g. organisational changes and environmental issues, board effectiveness, human right, and anti-corruption and bribery components (see figure 1).

Insert figure 1 here

3. Literature Review and Hypotheses Development

HEIs from The Times Higher Education rankings have been very protracted in NFR, such as sustainable management practices (Sepasi *et al.*, 2019). As time passes and increased awareness about environment ensues, there is a gradual increase in sectoral accountability and environmental disclosure (Demaria & Rigot, 2020). This is directly related to reporting of non-financial information to keep brand image consistent, for any firm, in any market including HEIs.

3.1 Board Effectiveness and Non-Financial Reporting

Board effectiveness is deemed as a crucial mechanism, which can influence organisational performance and effectiveness (Ntim *et al.*, 2017; Elmaghri *et al.*, 2018). As such, board effectiveness includes board independence, board expertise, board diversity (gender), board activity and Governing Board Size (GBSIZE) which have a significant impact on the reporting of CSR and voluntary disclosure (Velte & Stawinoga, 2017; E-Vahdati *et al.*, 2018; Lagasio & Cucari, 2019). Many prior studies found mixed impacts of various elements of the corporate governance mechanism within public listed organisations. For instance, positive relationship between female directors in the Board and voluntary disclosure is demonstrated by Lagasio & Cucari, (2019), whereas a negative influence is reported by Ghaleb *et al.* (2021). In addition, positive impact of GBSIZE, frequency of meeting presence of independent members and voluntary disclosure in PLCs are explored by various earlier

scholars (Said *et al.*, 2018). However, negative association between board independence and management reporting is presented by (Kolsi & Grassa, 2017).

The concept of “compliance” and “legitimacy” have been used in neo-institutional theory to understand the relationship between HEIs regulatory environment and their practices to embed in norms, rules and regulations (Marques and Powell, 2020). Therefore, the conversion of comply the regulatory framework into legitimate behaviour can be considered as crucial shift institutional environment of contemporary higher education (Scott, 2013; Taggart, 2015; Marques and Powell, 2020).

Through the lens of the neo-institutional (compliance and legitimacy) theoretical perspective, the number of board meetings, diversity in the board and a bigger board size can increase efficiency, offering a diverse layer of cultural expertise to obtain HEIs competitive advantages (Ntim *et al.*, 2017; Elmaghri *et al.*, 2018). In terms of the legitimacy view, a higher frequency of board meeting, independent members in the board and students’ representations would be advantageous to inform organisational challenges and explore the possible solutions to confront challenges within HEIs (Maingot and Zeghal, 2008; Soobaroyen *et al.*, 2014).

Board size and its constitution, i.e. diversity, plays significant roles in determining the CSR information to be disclosed by HEIs from top 200 ranks of Shanghai rankings (Sánchez *et al.*, 2020). Likewise, GBSIZE has a positive association with valuation which can have an impact on various reporting, including governance and management practices (Ntim *et al.*, 2015). However, governing board independence and students` representation in the board doesn’t have any impact on voluntary disclosure within HEIs sector (Aversano *et al.*, 2020). Therefore, the prior studies indicate that board effectiveness has positive impact on organisational voluntary disclosure. As a result, the following hypothesis was developed.

H1: Board effectiveness is positively associated with NFR content disclosure.

3.2 Student Engagement and Non-Financial Reporting

The entire business of HEIs, brand image and ranks are highly influenced by student satisfaction and their experiences during their studies, which influences different reporting as a key stakeholder (Burgess *et al.*, 2018; Adams, 2018). However, students can be a strong pillar of HEIs sustainable existence (Sam & Dahles, 2017) where student-staff ratios in higher education have a significant impact on teaching & learning, financial implications, and voluntary disclosure (McDonald, 2013). Likewise, international students have multiple understanding of internationalisation which have positive influence on HEIs marketing strategy, accountability, and core activities disclosure (Guo and Guo, 2017). Therefore, stakeholder' engagement might be explained by the normative pillar of neo-institutional theory, where HEIs need to be accountable for students and their parents, and fulfil societal expectations (Adams, 2018; Ntim *et al.*, 2017; Adhikariparajuli *et al.*, 2021).

The practices of Corporate Governance (CG) disclosures on various stakeholders have positive impacts on firm value that can be reflected through reporting of non-financial information (Ntim *et al.*, 2012; Maingot and Zeghal, 2008). Participation of various stakeholders is a significant factor that determines the CSR information disclosed by HEIs from the top 200 ranks of Shanghai rankings (Sánchez *et al.*, 2020). It has been reported that private and larger universities prefer disclosures using web pages and obtain stakeholder reactions towards it, which ultimately helps the HEIs ranking position (Saraite-Sariene *et al.*, 2019). Top ranking universities prefer an online platform for dissemination of public information for stakeholder engagement, and their opinions are considered utmost for accountability (Bellucci *et al.*, 2019) and students are considered key HEIs stakeholders.

As students play an important role in working towards the increase of sustainability of HEIs through various actions, their engagement affects their reporting (Murray, 2018).

Characteristics, such as Brand Trust, consist of reliability, credibility, and integrity which have direct impact on students' satisfaction. This is mediated by institutional commitment, if further adds student loyalty for the HEIs voluntary reporting (Yousaf *et al.*, 2020; Santini *et al.*, 2017). Thus, the number of students enrolled, students' satisfaction, and the number of international students can have a significant influence on voluntary disclosure (Habersam *et al.*, 2013). As such various prior studies (e.g. Murray, 2018; Santini *et al.*, 2017; Habersam *et al.*, 2013) reported a positive significant association between student engagement and HEIs voluntary disclosure. Accordingly, the following hypothesis is developed.

H2: Student engagement is positively associated with NFR content disclosure.

3.3 Audit Quality and Non-Financial Reporting

From the legitimacy perspective of neo-institutional theory, establishment of an audit committee and a higher number of non-executive members in the audit committee are high priorities of HEIs in order to reduce the potential legitimacy gap that could exist between HEIs management and their stakeholders (Freeman and Reed, 1983; Elmaghri *et al.*, 2021). In addition, the brand name of the big four audit firms demonstrates the auditor ability to withstand client pressure (Donald & Gary, 1992). Employing a big four audit firm, HEIs could meet the basis of compliance and normative pressure.

The presence of audit committee has positive impact on CSR reporting (Velte & Stawinoga, 2017). Furthermore, the establishment of various committees (e.g., audit committee, remuneration committee, risk committee), number of non-executive directors in the committee and their accounting expertise, have positive influences on CSR reporting (Mohammadi *et al.*, 2020; Sánchez *et al.*, 2020). The role of chair in an audit committee is different than members, and their abilities beyond financials are very important (Khemakhem & Fontaine, 2019). There is a direct association between the number of independent members

on an audit committee and the level of disclosures (Akhtaruddin & Haron, 2010). Likewise, regular meetings of an audit committee have a direct relation with its effectiveness of NFR (Gendron & Dard, 2006). In addition, the effectiveness of an audit committee has a direct relationship with the statements reported and there are less chances of restatement (Abbott *et al.*, 2004).

Alternatively, it has been reported that a well-composed and well-run audit committee is positively associated with accountability and transparency of HEIs voluntary disclosure (Soobaroyen *et al.*, 2014; Gordon *et al.*, 2002). More interestingly, is that big four audit firms continue to play an important role in reporting (Ocak & Özden, 2018) and have a positive influence of size of audit firms on reporting lag, including any rate of restatement (Meckfessel & Sellers, 2017). Therefore, size of audit firm, presence of external members as a chair of an audit committee has a significant impact on voluntary disclosure. Accordingly, the following hypothesis is finalised

H3: Audit quality is positively associated with NFR content disclosure.

3.4 Vice-Chancellors Remuneration, Gender and Non-Financial Reporting

VC, president, or rector in US, are the executive senior managers of the HEIs who have accountability for the HEIs long-term success and compliance with CG practice (Pilbeam, 2012; Ntim *et al.*, 2017; Elmaghri *et al.*, 2021). In prior studies, it has been debated that the VC work effectiveness and efficiency is based on their age, gender, discipline, or specialisation and remuneration (Ntim *et al.*, 2017; Elmaghri *et al.*, 2021). Therefore, in this study, we consider the disclosure of VC remuneration, establishment of a remuneration committee, VC gender, and the initiative of sustainability performance elements to explore the impacts on NFR content disclosure. These four elements are selected because these are employed in prior HEIs studies (Breakwell & Tytherleigh, 2010, Adams, 2013; Ntim *et al.*, 2017; Elmaghri *et al.*, 2021) and can be fairly collected (Elmaghri *et al.*, 2021; Breakwell & Tytherleigh, 2010).

From the legitimacy view of neo-institutional theory, disclosure of VC remuneration and establishment of a remuneration committee indicate accountability of the VC towards their stakeholders (Bachan & Reilly, 2015). Additionally, incorporating sustainability in curriculum and initiatives of sustainability performance in HEIs is crucial worldwide to tackle normative pressure in HEIs (Adams, 2013; Adams, 2018). From the effective perspective of neo-institutional theory, a female VC may be appointed by HEIs to bring diverse knowledge, experience, and views to the board (Ntim *et al.*, 2017; Elmaghri *et al.*, 2021). As such, there is a proved relationship between executive pay and performance sensitivity (Ntim *et al.* 2015). Although, excess pay relating to variables of ownership and monitoring has negative associations with accounting performance (Basu *et al.*, 2007). Therefore, it may affect overall reporting. Though, performance related pay has a limited role in determining remuneration for the executives in the university system, it still might influence the reporting (Cheng, 2014). There is a direct association between executive pay and performance (Ntim *et al.*, 2019). Thus, characteristics of VC especially disclosure of VC pay, gender, and the initiative of sustainability performance can have an influence on NFR as they can control the information. Therefore, the following hypothesis is derived.

H4: VC remuneration and gender are positively associated with NFR content disclosure.

4. Research Methods

4.1 Sample Selection

World university ranking may demonstrate fresh insights about the benchmarking indicator of HEIs performance trend, accountability, and transparency mechanism to find the significant factors which lead to the excellence of universities (Saraite-Sariene *et al.*, 2019; Soh, 2017). More importantly, top ranked universities provide opportunities to choose best

universities available abroad for the potential customers (students and their family) where to study by determining the prestige, value and price of their degree, and to work for the talented professionals (Altbach, 2012). Furthermore, higher education system, government agencies and policymaker around the world employ world university ranking system as a global knowledge race comparison tool (Soh, 2017, Altbach, 2012).

Therefore, our sample is based on the top 100 universities from the Times Higher Education World University ranking 2020. During the data collection, we visited HEIs websites to verify any data omitted from January 2021 to May 2021. After this procedure, our sample resulted in a final data set consisting of 89 HEIs over the period 2017/18 – 2019/20, i.e. 267 HEIs annual observations after excluding the omitted information. As presented in Table 1, the final sample of 89 HEIs were from the USA, UK, Switzerland, Canada, Singapore, Australia, Germany, Sweden, Japan, Hong Kong, France, South Korea, Netherlands, Denmark, Finland, and Taiwan. China and Belgium were excluded due to the unavailability of the required. Employing this data set, we manually collected data by using annual reports, sustainability reports, CG reports, and integrated reports.

The data analysis for this study commenced for the 2017/18 academic year as large EU companies, including profit and non-profit organisations, are obliged to publish non-financial information, such as environmental, CSR, human rights including anti-corruption, and bribery from 2017 (Krasodomska *et al.*, 2020). Following the significant reduction on government funding, a more competitive environment, and covid-19 uncertainty, all HEIs need to present greater accountability, transparency, and good governance practices to attract talented students and professionals.

Insert table 1 around here

A pilot study was carried out for twenty HEIs and all three authors were involved in pilot study coding. There were a few discrepancies raised which were solved with discussion and all authors were independently engaged on data collection. For more verification, each author cross-checked the other for data accuracy and reliability before model testing. The measurement of variables is discussed next.

4.2 Variable Definition and Model Specification

Insert table 2 around here

4.2.1 Dependent Variables

All variables employed in this research are presented in Table 2. To test our hypotheses (H1-H4) correlate with CG mechanism and NFR content disclosure, the following procedure was applied. Firstly, we applied the NFR content disclosure index and Total NFR content disclosure (TNFR) as a dependent variable. To construct the disclosure index, we followed the Directive 95/2014/EU guideline published by (EU, 2014) and recently adopted by (La Torre *et al.*, 2020; Krasodomska *et al.*, 2020; Garde Sánchez *et al.*, 2020). According to Directive 95/2014/EU, all public listed companies (Plcs), profit oriented and non-profit oriented organisations need to disclose environmental matters, social and treatment of employees, respect of human rights, anti-corruption and bribery, and corporate board effectiveness (Pizzi *et al.*, 2021; Adel *et al.*, 2019; Doni *et al.*, 2020). Therefore, based on earlier voluntary disclosure (e.g., Rubio *et al.*, 2019; Hassan *et al.*, Elmaghri *et al.*, 2021) which have been conducted within HEIs, the disclosure of NFR content is implemented in this study by measuring the extent and trend of NFR content disclosure. This covers 75 items classified into five themes based on Directive 95/2014/EU as follows: 15 items each on Environmental Protection (EPR), Social Responsibilities, Treatment of Employees and Students (RTES),

Respect for Human Rights (RHR), Diversity on HEIs Board (DHB), and Anti-corruption and Bribery (ACB). See Appendix for the disclosure index.

The index is structured as follows: no disclosure = 0; descriptive disclosure without any link to strategy and performance = 1; descriptive disclosure and links with all strategy and performance = 2; descriptive disclosure linked with strategy and performance and compared with historic, present and future position = 3. The total highest disclosure score of NFR content disclosed in HEI annual reports, sustainability reports, CG reports and integrated reports for all five themes should be $(225 \times 5 \text{ (themes)}) = 1125$.

Implementing this scoring method, the total highest score for one theme would be $(3 \times 75 = 225)$. Therefore, the disclosure percentage is calculated as a total disclosure score $(225/100)$ to get the disclosure percentage each year. We implemented the same approach for all five themes.

The weighted scoring approach was applied in this study due to the following three reasons. First, there is no specific valid reason whether weighted or unweighted scoring should be applied while coding non-financial content disclosure (Dumitru *et al.*, 2017; Cordazzo *et al.*, 2020; Hassan *et al.*, 2019; Adhikariparajuli *et al.*, 2021). Second, in contrast with the unweighted scoring approach, which simply highlights the presence or absence of disclosure items, the weighted approach explores beyond “what is disclosed” and evaluates “how it is disclosed” (Guthrie and Parker, 1990; Ahamed Haji and Anifowose, 2017) and this verifies the quality of disclosure (Hassan *et al.*, 2019; Ahamed Haji and Anifowose, 2017). Finally, various prior studies in HEIs have applied the weighted scoring approach during voluntary disclosure analysis (Adhikariparajuli *et al.*, 2021; Gamage and Sciulli, 2017; Sassen *et al.*, 2018).

Additionally, we made every effort to ensure our TNFR is a valid and reliable measure for non-financial content disclosure for world top ranked universities. For instance, the coding process was completed in two stages; firstly, all three authors coded the first ten HEIs over the

period of 2017/18 through to 2019/20. Secondly, all authors had a critical discussion about coding materials and approaches, and any discrepancy were discussed. During the second round of the data, the three authors coded ten more HEIs over the study period and this phase of coding brought up no discrepancies. Therefore, our coding process demonstrated a high level of consistency and reliability in the coding procedure. In addition, for the measurement of internal consistency and reliability of TNFR, we employed Cronbach`s alpha. Where, Cronbach`s alpha value should be higher than 65% in social science research (Botosan, 1997). In this study, the coefficient alpha for the five NFR themes in our TNFR is 80%. Therefore, we can justify that our index is reliable and a valid measure for non-financial content disclosure.

4.2.2 Explanatory and Control Variables

In this study, our explanatory variables are governance mechanisms. These include Total Board Effectiveness (TBE), consisting of governing board size (GBSIZE), Frequency of Board Meetings (FBM), the number of Female and Ethnic Minority Board members (FEMB), the Number of independent Board members (NEDB), and the Number of Student Representatives (NSR); Total Stakeholder Engagement (TSE), consisting of Student Satisfaction (SS), Number of Students per Staff (NSS), Number of International Students (NIS), and Actual number of students Employed After Graduation (AEAG); Total Audit Quality (TAQ), consisting of Establishment of an Audit Committee (EAC), Audited by a Big Four audit firm (ABF), Independent Members engaged in Audit committee (IMA), and Non-Executive Director chairs Audit committee (NEDA); and, VC pay and gender (VCP), consisting of VC remuneration Reported (VCR), Remuneration Committee Established (RCE), Gender of VC (GVC), and Initiative of Sustainability Performance (ISP). In addition, we control for HEIs specific characteristics, such as Annual council or government Funding (AFUND); HEIs Size (SIZE); HEIs Liquidity (LIQ); HEIs Growth (GWTH); HEIs Return On

Assets (ROA); HEIs Geographical Region dummy (GRE); VC experience (VCY); Number of Full-time Students (NFS); Age of HEIs (LNAGE); and, University Status dummy (US).

In terms of AFUND, Ntim *et al.* (2017) and Hassan *et al.* (2019) recommend that higher annual funding level from the council or government are associated with more resources within HEIs and encourage higher voluntary disclosure to meet legitimacy and social expectations. However, Sassen *et al.* (2018) did not find any impact of AFUND on HEIs sustainability disclosure. Likewise, the significant positive relationship between SIZE and voluntary disclosure is well documented by Adhikariparajuli *et al.* (2021), Hassan *et al.* (2019), and Ntim *et al.* (2017) because usually larger organisations have higher pressure from the media, lobby groups, the state and local government. They tend to disclose more non-financial information (Saxton and Guo, 2011). From a liquidity perspective, Watson (2002) recommend that liquidity can have a positive influence on HEIs voluntary disclosure as, when LIQ is higher, it demonstrates HEIS are engaged in more voluntary disclosure to demonstrate their financial stability. In contrast, Ntim *et al.* (2017) and Hassan *et al.* (2019) did not explore any significant relationship between LIQ and voluntary disclosure. In terms of GWTH, Saxton *et al.* (2012) conclude that non-profitable organisations, which generally have a higher growth rate, are less likely to engage in voluntary disclosure to avoid public attention. Similarly, Adhikariparajuli *et al.* (2021) and Hassan *et al.* (2019) suggest no relationship between GWTH and voluntary disclosure. In terms of ROA, Gordon *et al.* (2002) argue that if HEIs have higher profitability, they are less likely to engage in voluntary disclosure due to less priority being given to such activities. Therefore, ROA may not have a significant influence on non-financial information disclosure.

From the geographical region perspective, European or non-European geographical establishment may have significant impacts on non-financial disclosure as the EU Directive has been mandatory for large EU companies since 2017 (Cordazzo *et al.*, 2020). However,

Bhatia and Tuli (2017) suggest higher sustainability disclosure by US companies in comparison with UK companies. As such, non-European HEIs might have higher non-financial information disclosure than the EU based HEIs due to compliance with different regulations. In respect of VC experience, Ntim *et al.* (2017) suggest that if the VC has more experience, they will have more knowledge, skills, and financial abilities enabling them to deal with uncertainty and the tendency to disclose more non-financial information. However, Brickley *et al.* (2010) explore less experienced VCs and found that they are more curious, tackle more challenges, and are ready to disclose more information to demonstrate legitimacy to their stakeholders. Likewise, Yousaf *et al.* (2020) suggest that if HEIs have full-time students engaged, they are motivated to disclose more information to fulfil social expectations. Therefore, there may be a significant influence of NFS on HEIs non-financial information disclosure.

In the case of LNAGE and US, Hassan *et al.* (2019) and Elmaghri *et al.* (2021) argue that older HEIs are encouraged to disclose more non-financial information. On the contrary, Ntim *et al.* (2017) conclude no relationship between HEIs age and voluntary disclosure. More interestingly, Gordon and Fischer (2008) and Gordon *et al.* (2002) argue that public HEIs tend to disclose more voluntarily information in comparison with their private counterparts. As such, US could have a significant influence on non-financial content disclosure. Therefore, based on prior studies, our Ordinary Lines Squared (OLS) regression model is as follows:

$$TNFR_{it} = \alpha_0 + \beta_1 TBE_{it} + \beta_2 TSE_{it} + \beta_3 TAQ_{it} + \beta_4 VCP_{it} + \sum_{i=1}^{10} \beta_i CONTORLS_{it} + \varepsilon_{it} \quad (1)$$

Where, TNFR is the total score of non-financial content disclosure; TBE refers to the sum of the board effectiveness index, including GBSIZE, FBM, FEMB, NEDB, and NSR; TSE

refers to the sum of the student engagement index, including SS, NSS, NIS, and AEAG; TAQ refers to the sum of EAC, ABF, IMA, and NEDA; and VCP refers to the sum of VC pay and gender, including VCR, RCE, GVC and ISP. CONTROLS represent the ten control variables which are the total assets of SIZE, LIQ, GWTH, ROA, GRE, VCY, NFS, LNAGE, and US.

5. Data Analysis and Results

5.1 Summary of Descriptive Statistics and Correlation Analysis

The descriptive statistics for our research variables are outlined in Table 5 and Table 6. The statistical results in Table 3 demonstrate numerous interesting findings. First, the level of TNFR is very low and has a large amount of variability, which is consistent with earlier research (Gordon *et al.*, 2002; Ntim *et al.*, 2017; Hassan *et al.*, 2019; Elmaghri *et al.*, 2021). More interestingly, Table 3 demonstrates TNFR ranges from a minimum of 19.11% to the maximum of 73.78% with the average mean of 43.64%. In comparison with prior studies, Ntim *et al.* (2017) find that the voluntary disclosure score ranges between 15 to 73 with a mean value of 44%. Likewise, Table 3 presents that the level of NFR content disclosure trend is increased over the study period and consistent with Ntim *et al.* (2017), Hassan *et al.* (2019), and Elmaghri *et al.* (2021). For example, the level of TNFR content disclosure was 42.16% in 2017 and increased to 45.19% in 2019. Furthermore, in terms of TNFR sub-indices, Table 3 highlights the low level of NFR content disclosure and the relative increase over study period (2017/18 through to 2019/20). Results reported in Table 3 shows that the average ERP disclosure score is 55.80%, which has steadily increased by 12.21%, ranging between 49.73% in 2017 and 55.80% in 2019. Likewise, the average CSR disclosure score of 48.17 % has improved by 7.54%; the average RHR disclosure score of 42.82% has increased by 5.60%; the average DHB score of 47.84% has improved by 4.71%; and the average ACB disclosure score of 31.36% has

increased by 3.60% respectively over the study period 2017-2019. The steady improvement of HEIs voluntary disclosure results is in line with prior studies (Adhikariparajuli *et al.*, 2021; Hassan *et al.*, 2019; Ntim *et al.*, 2017). More surprisingly, a very low disclosure trend is consistent with prior research within Italian PLCs (Cordazzo *et al.*, 2020).

Insert Table 3 around here

For further analysis, we split our sample into four groups based on geographical region of establishment of HEI (a score of “1” if HEI established in USA; “2” if HEI established in Australia; “3” if HEI established in UK; and “4” if HEI established in EU, Canada, and Asia). The results in Table 4 indicates rather interesting findings. The score ranges from minimum of 15 to a maximum of 194 in total board effectiveness (TBE) and minimum of 66 to a maximum of 259 in total stakeholders’ engagement (TSE). Where, HEI located in USA scored highest disclosure score and HEI located in EU, Asia and Canada scored the lowest disclosure. However, this result is in line with Sánchez *et al.* (2020) who found that HEIs established in common law countries have higher CSR disclosure. More interestingly, some HEI situated in USA and EU, Asia and Canada don’t disclosure any non-financial information related to the VC pay and audit committee. But, the NFR implication in HEIs is still in infancy stage, therefore it may be too early to finalise the results, especially when different regulatory frameworks are in practice within HEIs in comparison with the geographical region (Lozano, 2011).

Insert Table 4 around here

In terms of explanatory and control variables, Pane A of Table 5 presents wide variability in their distribution. The sub-indices of TBE highlights that HEIs have on average 36 members in relation to GBSIZE; an average of 7 FBM; an average of 10 FEMB; an average of 14 NEDB members; and an average of 2 NSR. Likewise, TSE sub-indices demonstrates an average of 63.21% SS; an average of 15% NIS; and an average of 48% AEAG in HEIs. Furthermore, the TAQ sub-indices demonstrates that HEIs have 92% EAC; 65.2% are ABF; and 84.3% have IMA with 78.7% NEDA identification. In addition, in terms VCP 47.2% of HEIs disclose VCR; 79.8% have RCE; 79.4% HEIs have a male VC; and only 42.7% of HEIs correlates ISP. Results in Table 5 also indicate a larger variability in control variables.

Insert Table 5 around here

The results of both Pearson and Spearman have been carried out to check robustness. Table 6 demonstrates the correlation matrix to tackle multicollinearity issues. More importantly, both tests present similar coefficients and justify the assertion that there are no significant multicollinearity issues raised in this study. Furthermore, as presented in model 1-6 in Table 7, the data indicates the Variance Inflation Factor (VIF) value is very low for all research variables and does not exceed 10. Therefore, we assuming that our variables are not affected from multicollinearity issues (Gujarati, 2003).

In line with the results of prior HEIs studies (Ntim *et al.* 2017; Xue & Niu, 2019; Elmaghri *et al.* 2021), Table 6 highlights that CG mechanisms and control variables have a significant influence on TNFR. For instance, as in line with our prediction, TVCP, NFS, and AFUND are positively associated with TNFR. In contrast, TBE, SIZE, and US are negatively

associated with TNFR. Likewise, no evidence of association was demonstrated between GRE, LNAGE, VCY, ROA, LIQ, GWTH, TAQ, and TSE.

Insert Table 6 around here

5.2 Regression Analyses and Discussion

The multivariate OLS regression analyses with the effect of CG mechanisms (TBE, TSE, TAQ and VCP) on TNFR is depicted in Table 7. In general, the results indicate that the governance variables are crucial to differentiate NFR disclosure which is observed within this study. Table 7 Model 1 presents the total board effectiveness (TBE) (the total sum of sub-indices GBSIZE, FBM, FEMB, NEDB and NSR) and this has a significant negative association with TNFR, which is not in line with H1. However, a significant negative relationship between board effectiveness and voluntary disclosure within the HEIs is supported by prior studies. For instance, FEMB and GBSIZE negative impacts towards voluntary disclosure are consistent with Ntim *et al.* (2017) and Elmaghri *et al.* (2021). More interestingly, significant negative influences of NEDB and NSR is reported by prior research (Seibert & Macagnan, 2019; Gordon *et al.*, 2002). Theoretically, we argue that from the legitimation view of neo-institutional theory, if HEIs have a more diverse board, NEDs and students represented in the board, they are more likely to give pressure to the HEI for more non-financial information disclosure to fulfil social expectations. Consequently, this can lead HEIs to reduce the number of NEDs, female or minority members and student representation in the board for NFR disclosure.

Insert Table 7 around here

As shown in Model 1 of Table 7, total stakeholders engagement (TSE) (the sum of sub-indices SS, NSS, NIS and AEAG) was insignificantly associated with the TNFR. Which is not in line with H2. The insignificant influence of student engagement on HEIs voluntary disclosure is consistent with (Yousaf *et al.* 2020) based on Indian HEIs context. This insignificant effect of TSE due to higher variability in all sub-indices (student staff ratio NSS min 3.5 – max 74.0, see Table 5). This indicates that student engagement, even as a major stakeholder, has limited influence on TNFR. As such, the evidence of insignificance of TSE on TNFR is inconsistent with H2.

Furthermore, Model 1 of Table 7 reveals a significant positive association between total audit quality (TAQ) (the sum of sub-indices EAC, ABF, NNM and CAN) and TNFR. The positive relationship lends empirical support for H3 and the results of prior HEI studies (Ntim *et al.*, 2017; Soobaroyen *et al.*, 2014). Where, the researchers revealed the significant positive effect on different board establishment on HEIs voluntary disclosure. Likewise, the numbers of NEDs on the board and having an audit committee chaired by NEDs, both have positive impacts on HEIs sustainability disclosure as reported by Maingot & Zeghal (2008) and Elmaghri *et al.* (2021). In terms of the theoretical context, our results provide evidence to justify our theoretical implication. The basis of regulative and normative perspectives, neo-institutional theory recommends that institutions need to establish different governance committee(s) and appoint more independent directors to comply with different regulations, and protect their image and reputation (Adams, 2018; Hassan *et al.*, 2019).

The results shown in Model 1 of Table 7 highlights the significant positive association of total VC pay and other benefit (TVCP) (the sum of sub-indices VCR, RCE, GVC and ISP)

on TNFR. This significant positive influence is in line with H4 and the theoretical notion (from cultural, cognitive, and normative perspectives) that the disclosure of TVCP and establishment of a remuneration committee could enhance public accountability and transparency (Gordon *et al.*, 2002, Ntim *et al.*, 2017). Likewise, the TVCP positive impact on TNFR is supported by Adams (2013) and Adams (2018), who report that the implication of sustainability initiatives within HEIs can enhance long-term value creation for the economy, society, and the environment.

In terms of the control variables, the coefficients on AFUND, ROA and LNAGE were consistent with our prediction. More importantly, significant negative association is revealed between GRE and NFR disclosure. Even though, NFR guideline EU Directive 2014 was published and mandatory in EU, universities situated in USA have highest NFR disclosure score with the comparison of UK, Australian, and EU, Asian and Canadian universities. Likewise, the negative effects of SIZE and the insignificant associations of GWTH, LIQ, VCY and US were not expected.

5.3 Further Analysis and Robustness Check

We carried out various additional tests to deal with the different CG indices and all sub-indices (TEB, TCSR, THR, TDHB and TCB) as the proxies of governance mechanisms and specified the country (UK, USA, Switzerland, Canada, Singapore, Australia, Hong Kong, Japan, Germany, Netherlands, South Korea, France and Finland) to tackle the endogeneity issues. Firstly, our results demonstrate crucial associations and the variation between the TNFR CG variables. However, TNFR consists of five different elements of NFR content (TED, TCSR, THR, TDHB and TCB). As such, this incorporates the possibility that one element might have a stronger association with the CG mechanism than others. Therefore, to ensure the variabilities of the influence of CG on individual element of TNFR, we have re-estimated our

Model 2 – Model 6 in Table 7 and this is easily comparable with Model 1. Thus, our findings are not affected from the usage of sub-indices. In addition, all five elements have fifteen items each and can demonstrate the equal weight for individual elements. So, the association between our explanatory variables (TBE, TSE, TAQ and VCP) and predicted variables (TNFR) are not affected with weight issues. Furthermore, we create the country dummy (COUNT) as presented in Model 7 to ascertain if this reveals any different results. Finally, as shown in Model 2-7 of Table 7, the results remain very similar in Model 1 of Table 7, confirming the robustness of our results.

We employed random effects analysis to further address the potential of omitted variables, dynamic and simultaneous endogeneity (Hassan *et al.*, 2019; Alnabsha *et al.*, 2018; Elamer *et al.*, 2017). First, random effects model is more suitable if the number of observations is larger than the time series (Gujarati, 2003). Second, we conduct the Hausman test and p – value is <0.05 and random effect model as it is more suitable than fixed effects which cover the comprehensive features of HEIs (Hassan *et al.*, 2019). Furthermore, we further address potential and simultaneous endogeneity by running dependent lags (Elamer *et al.*, 2017; Ntim *et al.*, 2017; Hassan *et al.*, 2019). As unobserved heterogeneities may affect governance variables and the error terms may invariable over time, we employed a lagged estimator as suggested by Ntim *et al.* (2016), Hassan *et al.* (2019), and the results are reported in Model 2 of Table 8.

Insert Table 8 around here.

We further address potential and dynamic endogeneity that may be affected by omitted variable bias by estimating and applying weighted least square OLS as suggested by Elamer &

Benyazid (2018). The results are reported in Model 3 of Table 8 and this highlights a series of very similar results with Model 1 of Table 8, thereby implying that our results are not strongly affected by endogeneity issues.

6. Summary, Recommendations and Conclusions

Despite the increasing demand for NFR and disclosure in the public sector, including HEIs due to the very competitive environment for attraction of talented students and professionals, there has been very limited research exploring NFR content disclosure in worldwide universities. Therefore, this study has shed light on this area of accounting literature by exploring the extent to which world's top ranked HEIs engage in NFR and disclosure, and consequently evaluate if the CG mechanism has any association with HEIs NFR and disclosure. We investigated the influence of TBE (GBSIZE, FBM, FEMB, NEDB, and NSR); TSE (SS, NSS, NIS, and AEAG); TAQ (EAC, ABF, IMA, and NEDA); and VCP (VCR, RCE, GVC, and ISP) on NFR content disclosures among world top HEIs.

We explore the levels of NFR content disclosure among HEIs and found that they are significantly low in comparison with the corporate sector. Likewise, the CG mechanisms have significant influence on voluntary NFR content disclosures. Particularly, we report significant and positive associations among TAQ, VCP and NFR content disclosure. However, a significant negative relationship is revealed between TBE and NFR content disclosure with an insignificant impact between TSE and NFR content disclosure.

Our research findings have various practical implications for HEIs regulatory and enforcement bodies. Our results indicate that NFR content disclosure differs significantly between HEIs, and this may urge the HEIs regulatory body and policy makers to identify ways to improve NFR content disclosure on a voluntary or mandatory basis. To enhance disclosure

and compliance of NFR practices, we recommend that the HEIs regulatory bodies in the UK (Funding council or British Universities Directors group); in Australia (Australian Universities Quality Agency); in the USA (Association of American Universities or higher education regulatory body); and in the EU (EU Directive 2014 for all European universities) consider independent committees to monitor CG practice, their accountability and voluntary disclosure.

In addition, our study demonstrates that TBE has a significant negative relationship with NFR disclosure. This may be a consequence of the significant variabilities in GBSIZE, FBM, FEMB, NEDB and NSR including national and international regulatory requirements. Therefore, this negative, significant association causes us to recommend policy reforms aimed at balancing GBSIZE and increasing female directors and student representatives in HEIs boardrooms. Likewise, the insignificance relationship of TSE raises the recommendation to urge policy makers to create a dialogue with the HEIs management, students, and other professionals for NFR content disclosure initiation.

Furthermore, our findings reveal that top ranked HEIs have separate governance committees (remuneration and audit), more NEDs on the board, have better governance compliance, and a higher NFR content disclosure score. Therefore, this may encourage regulators of HEIs to develop new legislation that requires HEIs to establish separate committees on a mandatory basis to enhance NFR content disclosure and its harmonised reporting format. The findings of this study can be employed as an enhancement tool to increase accountability and transparency to tackle the sustainability, CSR, human rights, and corruption and bribery issues.

This study is crucial as it explores early evidence on the level of disclosure and antecedents of NFR content disclosure within the top ranked 100 HEIs. However, it has the following limitations. This study is focused on NFR content disclosure among the top ranked

100 HEIs from the world university rankings where the EU Directive/2014 is voluntary, therefore further research may explore NFR content disclosure to cover all universities in different league table rankings (Quacquarelli Symonds (QS) world university rankings, Global universities rankings, and Shanghai universities rankings) and compare the results of mandatory NFR with their voluntary counterparts. This study is limited with CG mechanisms for the period of 2017-2019, future research may offer different elements of HEIs in current years to investigate the covid-19 effects on HEIs NFR disclosure and their accountability.

Additionally, we employed three pillars (efficiency and legitimacy, normative, and cultural-cognitive) of neo-institutional theory to interpret our results, future research could extend the theoretical lens to include stakeholder theory, signalling theory, or perhaps resources dependency theory. A quantitative research approach has been applied for this study, which is not sufficient to cover in-depth and more nuanced insights about the determinants of NFR content disclosure. Therefore, we suggest that future research could expand our analysis through qualitative data analysis (interviews, case study or longitudinal data analysis) for a better understanding of the extent and determinants of NFR content disclosure within HEIs.

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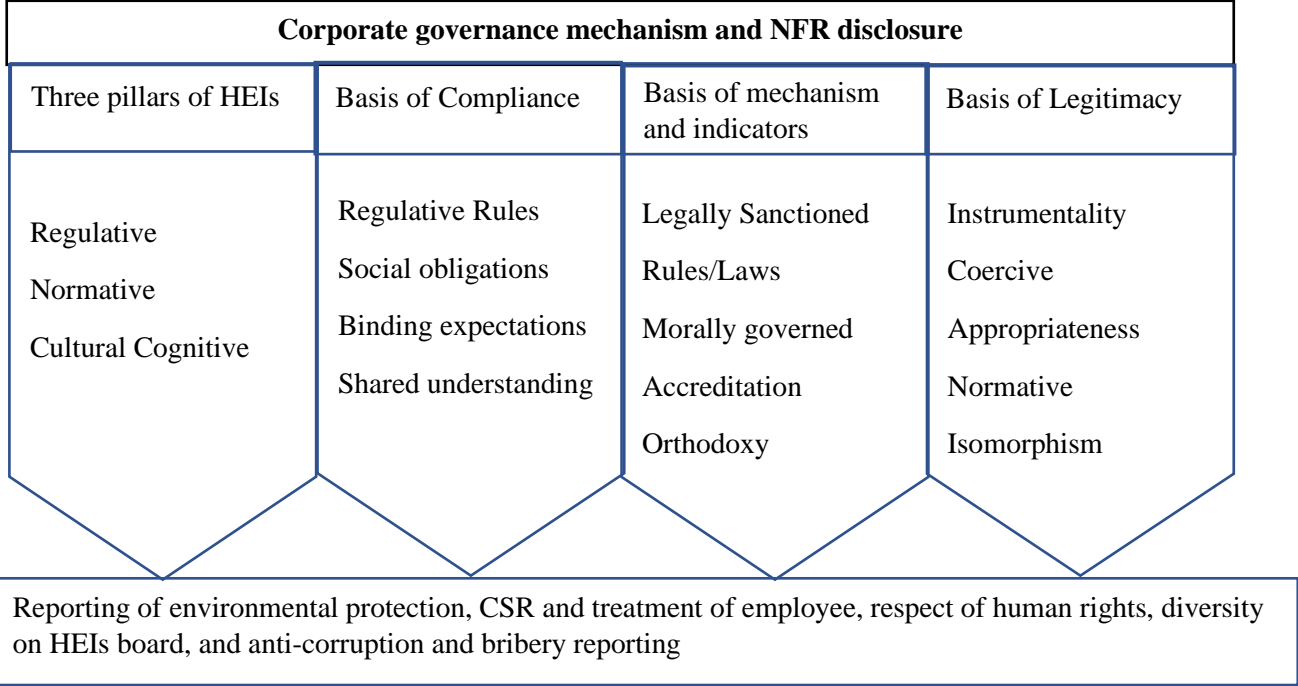
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Figure 1 Theoretical Framework (Neo-Institutional Theory)



Source: Authors own source

Table 1. Study sample

| Country | Top 100 HEIs ranked in The World University Rankings | Number of University employed in this research |
|----------------|---|---|
| United Kingdom | 12 | 12 |
| USA | 38 | 38 |
| Switzerland | 4 | 4 |
| Canada | 6 | 6 |
| China | 2 | 0 |
| Singapore | 2 | 2 |
| Australia | 6 | 6 |
| Germany | 7 | 2 |
| Sweden | 2 | 2 |
| Japan | 2 | 2 |
| Hong Kong | 3 | 3 |
| Belgium | 2 | 0 |
| France | 2 | 2 |
| South Korea | 2 | 0 |
| Netherlands | 7 | 7 |
| Denmark | 1 | 1 |
| Taiwan | 1 | 1 |
| Finland | 1 | 1 |

Table 2. Research Variables and definitions

| <i>Non-Financial Reporting Index-dependent variables</i> | Measurement |
|--|---|
| Total Non-Financial Reporting content disclosure (TNFR) | Denotes the total Non-Financial Reporting content disclosure index containing 75 provisions based on 5 categories, including; 15 items each on Environmental Protection (EPR), Social responsibilities and treatment of employee and students (RTES), Respects of human rights (RHR), Diversity on HEIs board (DHB), and Anti-corruption and bribery (ACB). A value of “0” awarded if Non-Financial Reporting content has no disclosure; “1” awarded if descriptive discourse without any link with strategy and performance; “2” awarded if descriptive discourse and link with strategy and performance, and “3” awarded if descriptive disclosure, link with both strategy and performance with historic, present and future position. |
| <i>Corporate governance and HEIs sector specific – explanatory variables</i> | |
| Board Effectiveness (TBE) | Denotes the sum of [corporate governance board size (GBSIZE) no of member in board; frequency of board meeting (FBM) no of meeting within one educational year; proportion of female & ethnic minority members in board (FEMB); no of independent member/lay member (NEDB) and proportion of no of student representation (NSR)] |
| Stakeholders` Engagement (TSE) | Denotes the sum of [Student satisfaction (SS) actual score report; No of students per staff (NSS) actual number reported; No of international students (NIS) and No of students employed after graduation (AEAG) actual number reported] |
| Audit Quality (TAQ) | Denotes the sum of [Establishment of Audit committee (EAC) if yes “1” or “0” otherwise; Audited by big 4 audit firm (ABF) if yes “1” or “0” otherwise; Any independent member engaged in audit committee (IMA) if yes “1” or “0” otherwise; Audit committee chaired by NED (NEDA) if yes “1” or “0” otherwise] |
| VC pay and gender (TVCP) | Denotes the sum of [VC pay and other benefit (VCR) if reported “1” or “0” otherwise; Remuneration committee establishment (RCE) if established “1” or “0” otherwise; Gender of VC (GVC) if male “1” or “0” otherwise; Initiative of sustainability performance (ISP) if yes “1” or “0” otherwise]. |
| <i>Controls (Financial & Non-Financial variables)</i> | |
| Annual Council Funding (AFUND) | Denotes the percentage of Annual Government/Council funding to Total income in each year |
| Total Assets (SIZE) | Denotes the Total Assets reported in one academic year |
| Liquidity (LIQ) | Denotes the current assets divided by current liabilities |
| Growth (GWTH) | Denotes the percentage of current years` income minus previous year total income divided by previous year total income |

| | |
|--|---|
| Return on Assets (ROA) | Denotes the operating profit divided by total assets multiplied be hundred |
| Geographical region of establishment (GRE) | Denotes “1” if HEI established in USA; denotes “2” if HEI established in Australia; denotes “3” if HEI established in UK, and denotes “4” if HEI established in EU, Asia and Canada |
| No of years VC stayed in the HEI (VCY) | Denotes the actual numbers of years VC stayed in his/her job |
| No of Full time students (NFS) | Denotes the actual total number of full time students |
| Age of HEI (LNAGE) | Denotes the natural log of HEIs age when the HEI obtain degree awarding power |
| University Status (US) | Denotes “1” if the HEI is public or “0” otherwise |

Table 3. Descriptive Statistics for the research variable (Dependent)

| Overall Non-financial Reporting content disclosure (TNFR) (%) | | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 2017 | | | | 2018 | | | | 2019 | | | |
| Component | Mean | STD | Min | Max | Mean | STD | Min | Max | Mean | STD | Min | Max |
| TED | 49.73 | 13.53 | 20.00 | 84.44 | 52.85 | 13.23 | 22.22 | 84.44 | 55.80 | 13.61 | 22.22 | 86.88 |
| TCSR | 44.54 | 13.86 | 13.33 | 91.11 | 46.39 | 13.67 | 13.86 | 91.11 | 48.17 | 13.64 | 13.97 | 91.11 |
| THR | 40.55 | 13.72 | 6.67 | 80.00 | 41.57 | 13.64 | 6.67 | 80.00 | 42.82 | 13.54 | 6.67 | 80.00 |
| TDHB | 45.69 | 13.24 | 20.00 | 86.67 | 46.59 | 13.19 | 20.00 | 86.78 | 47.84 | 13.72 | 20.00 | 86.67 |
| TCB | 30.27 | 11.49 | 4.44 | 57.78 | 30.78 | 11.60 | 4.44 | 57.78 | 31.36 | 11.78 | 4.44 | 57.78 |
| TNFR | 42.16 | 9.74 | 19.11 | 72.00 | 43.64 | 9.89 | 19.11 | 73.78 | 45.19 | 9.96 | 19.11 | 74.22 |

Table 4 Relationship between NFR content disclosure index and establishment of HEIs geographical region

| Variable | Mean | Median | SD | Maximum | Min | Skewness | Kurtosis |
|--|--------|--------|-------|---------|--------|----------|----------|
| Panel A: Establishment of HEIs in USA (N = 38) | | | | | | | |
| TBE | 91.25 | 83.50 | 46.55 | 194.00 | 20.00 | 0.48 | -0.85 |
| TVCP | 2.31 | 2.00 | 0.76 | 4.00 | 1.00 | -0.22 | -0.99 |
| TSE | 150.92 | 162.35 | 43.16 | 259.30 | 70.50 | -0.21 | -0.99 |
| TAQ | 3.26 | 4.00 | 1.07 | 4.00 | 0.00 | -1.46 | 1.27 |
| Panel B: Establishment of HEIs in Australia (N = 6) | | | | | | | |
| TBE | 44.30 | 40.00 | 10.91 | 96.00 | 34.00 | 1.27 | 0.62 |
| TVCP | 3.17 | 3.50 | 0.92 | 4.00 | 2.00 | -0.36 | -1.83 |
| TSE | 197.33 | 193.40 | 16.15 | 234.70 | 174.60 | 1.02 | 0.99 |
| TAQ | 3.00 | 3.00 | 1.02 | 4.00 | 1.00 | -1.09 | 0.42 |
| Panel C: Establishment of HEIs in UK (N = 11) | | | | | | | |
| TBE | 60.36 | 60.00 | 17.24 | 98.00 | 37.00 | 0.84 | 0.16 |
| TVCP | 3.00 | 3.00 | 0.86 | 4.00 | 1.00 | -0.92 | 0.72 |
| TSE | 160.20 | 155.00 | 38.68 | 228.00 | 87.90 | -0.02 | -0.67 |
| TAQ | 3.91 | 4.00 | 0.29 | 4.00 | 3.00 | -2.98 | 7.34 |
| Panel D: Establishment of HEIs in EU, Asia & Canada (N = 34) | | | | | | | |
| TBE | 53.64 | 50.00 | 27.47 | 121.00 | 15.00 | 0.86 | 0.12 |
| TVCP | 2.41 | 3.00 | 0.91 | 4.00 | 0.00 | -1.15 | 0.87 |
| TSE | 138.74 | 132.35 | 47.05 | 230.90 | 66.70 | 0.18 | -1.14 |
| TAQ | 2.94 | 3.00 | 1.11 | 4.00 | 0.00 | -1.45 | 1.83 |

Table 5. Descriptive statistics for the research variables (Explanatory and Control)

| Panel A | Corporate governance mechanism | | | |
|---|--------------------------------|-------------|-------------------|------------|
| Total Board effectiveness (TBE) (Continuous) | | | | |
| Component | Mean | STD | Min | Max |
| GBSIZE | 36.87 | 23.86 | 6 | 127 |
| FBM | 7.03 | 4.04 | 0 | 25 |
| FEMM | 9.74 | 6.09 | 0 | 27 |
| NEDB | 14.28 | 13.98 | 0 | 64 |
| NSR | 1.99 | 2.12 | 0 | 10 |
| TBE | 69.90 | 40.03 | 15 | 94 |
| Total stakeholders engagement (TSE) % | | | | |
| SS | 63.21 | 15.04 | 38.80 | 95.50 |
| NSS | 15.19 | 9.37 | 3.5 | 74.0 |
| INTS | 24.31 | 11.95 | 6 | 71 |
| SEAG | 48.00 | 38.21 | 34 | 99.10 |
| TSE | 150.54 | 45.19 | 66.70 | 259.30 |
| Total audit quality (TAQ) Dummy | Score | Fre. | percentage | |
| EAC | 0 | 21 | 7.9 | |
| | 1 | 246 | 92.1 | |
| ABF | 0 | 93 | 34.8 | |
| | 1 | 174 | 65.2 | |
| IMA | 0 | 42 | 15.7 | |
| | 1 | 225 | 84.3 | |
| NEDA | 0 | 57 | 21.3 | |
| | 1 | 210 | 78.7 | |
| VC pay and Gender (VCP) Dummy | | | | |
| VCR | 0 | 141 | 52.8 | |
| | 1 | 126 | 47.2 | |
| RCE | 0 | 54 | 20.2 | |

| | | | |
|-----|---|-----|------|
| | 1 | 213 | 79.8 |
| GVC | 0 | 55 | 20.6 |
| | 1 | 212 | 79.4 |
| ISP | 0 | 153 | 57.3 |
| | 1 | 114 | 42.7 |

| | | | | |
|-----------------------------------|-------------------|------------------|-------------------|------------|
| Panel B | Control variables | | | |
| | Mean | STD | MIN | Max |
| SIZE | 11770309 | 15955482 | 138278 | 81315807 |
| AFUND | 30.51 | 21.30 | 00.00 | 86.68 |
| GWTH | 0.06 | 0.16 | -1.00 | 0.92 |
| LIQ | 2.53 | 3.04 | 0.02 | 25.31 |
| ROA | 0.02 | 0.14 | -0.46 | 0.80 |
| VCY | 5.00 | 3.67 | 1 | 22 |
| NFS | 26230 | 12879 | 2181 | 72202 |
| LNAGE | 4.70 | 1.36 | 1 | 6 |
| Control variable Dummy | Score | Frequency | Percentage | |
| GRE | 1 | 114 | 46.70 | |
| | 2 | 18 | 6.74 | |
| | 3 | 33 | 12.36 | |
| | 4 | 102 | 38.20 | |
| US | 0 | 57 | 21.3 | |
| | 1 | 210 | 78.7 | |

Table 6. Bivariate correlations for all 89 World Top Ranked universities

| Variables | TNFR | TBE | TSE | TAQ | TVCP | SIZE | AFUND | GWTH | LIQ | ROA | VCY | NFS | LNAGE | GRE | US |
|-----------|----------|----------|----------|---------|---------|----------|----------|--------|---------|--------|----------|----------|----------|----------|----------|
| TNFR | | -0.236** | -0.086 | 0.115 | 0.302** | -0.185** | 0.204** | -0.087 | 0.057 | 0.079 | -0.065 | 0.163** | 0.040 | 0.104 | 0.307** |
| TBE | -0.236** | | 0.066 | 0.235** | -0.107 | 0.230** | -0.192** | 0.080 | 0.009 | -0.097 | 0.214** | -0.162** | 0.171** | -0.370** | -0.513** |
| TSE | -0.086 | 0.066 | | -0.081 | 0.019 | 0.184** | -0.209** | 0.145* | -0.063 | 0.081 | 0.054 | -0.032 | 0.256** | -0.138* | -0.150* |
| TAQ | 0.115 | 0.235** | -0.081 | | 0.125* | 0.086 | 0.053 | 0.017 | -0.053 | 0.027 | 0.017 | -0.062 | -0.066 | 0.024 | -0.056 |
| TVCP | 0.320** | -0.107 | 0.019 | 0.125* | | -0.081 | 0.192** | -0.035 | 0.112 | -0.070 | -0.053 | 0.042 | -0.088 | 0.086 | 0.216** |
| SIZE | -0.185** | 0.230** | 0.184** | 0.086 | -0.081 | | -0.309** | 0.057 | -0.024 | -0.095 | -0.002 | 0.022 | 0.168** | -0.379** | -0.284** |
| AFUND | 0.294** | -0.192** | -0.209** | 0.053 | 0.192** | -0.309** | | -0.077 | 0.261** | 0.148* | -0.206** | -0.029 | -0.151* | 0.303** | 0.325** |
| GWTH | -0.087 | 0.080 | 0.145* | 0.017 | -0.035 | 0.057 | -0.077 | | 0.010 | 0.099 | 0.090 | 0.103 | 0.061 | -0.080 | 0.017 |
| LIQ | 0.057 | 0.009 | -0.063 | -0.053 | 0.112 | -0.024 | 0.261** | -0.010 | | 0.051 | -0.004 | -0.075 | 0.081 | -0.049 | 0.089 |
| ROA | 0.079 | -0.097 | 0.081 | 0.027 | -0.070 | -0.095 | 0.148* | 0.099 | 0.051 | | -0.059 | -0.072 | 0.059 | 0.127* | 0.039 |
| VCY | -0.065 | 0.214** | 0.054 | 0.017 | -0.053 | -0.002 | -0.206** | 0.090 | -0.004 | -0.059 | | -0.050 | 0.046 | -0.151* | -0.346** |
| NFS | 0.163** | -0.162** | -0.032 | -0.052 | 0.042 | 0.022 | -0.029 | 0.103 | -0.075 | -0.072 | -0.050 | | 0.097 | -0.196** | 0.403** |
| LNAGE | 0.512 | 0.171** | 0.256** | -0.066 | -0.088 | 0.168** | -0.151* | 0.061 | 0.081 | 0.059 | 0.046 | 0.097 | | -0.436** | -0.036** |
| GRE | -0.104 | -0.416** | 0.138* | 0.024 | 0.086 | -0.379** | 0.303** | -0.080 | -0.049 | 0.127* | -0.151* | 0.001 | -0.436** | | 0.410** |
| US | -0.346** | -0.513** | -0.150* | -0.056 | 0.216** | -0.284** | 0.325** | 0.017 | 0.089 | 0.039 | -0.346** | 0.403** | 0.097 | 0.307** | |

Note Please see the table for all variable definition. Pearson`s correlations are presented on lower left side and Spearman`s correlations are displayed on upper right within the table. ** means significant at 0.01 level (2-tailed);

* means significant at 0.05 level (2-tailed)

Table 7. Effects of Corporate Governance mechanism on NFR content disclosure

| Dep. Variable | TNFR | VIF | ERP | VIF | RTES | VIF | RHR | VIF | DHB | VIF | ACB | VIF | TNFR | VIF |
|---------------------|----------------------|------|---------------------|------|----------------------|------|---------------------|------|----------------------|------|----------------------|------|----------------------|------|
| (Model) | (1) | | (2) | | (3) | | (4) | | (5) | | (6) | | (7) | |
| TBE | 2.1055** (0.037) | 1.25 | -2.322** (0.021) | 1.57 | -1.361 (0.175) | 1.57 | -0.187 (0.851) | 1.56 | -1.841* (0.067) | 1.54 | -2.404** (0.017) | 1.58 | -2.076** (0.039) | 1.61 |
| TSE | -0.837 (0.403) | 1.16 | 1.331 (0.185) | 1.19 | 1.154 (0.250) | 1.19 | 1.838* (0.068) | 1.17 | 0.580 (0.562) | 1.19 | -2.878*** (0.004) | 1.19 | 1.018 (0.310) | 1.21 |
| TAQ | 4.069*** (0.000) | 1.12 | 3.322*** (0.001) | 1.14 | 2.170** (0.031) | 1.14 | 6.294*** (0.000) | 1.13 | 2.618*** (0.009) | 1.14 | 1.242 (0.215) | 1.13 | 4.161*** (0.000) | 1.16 |
| TVCP | 3.845*** (0.000) | 1.26 | 2.202** (0.029) | 1.13 | 4.046*** (0.000) | 1.13 | 3.014*** (0.003) | 1.14 | 3.536*** (0.000) | 1.14 | 0.525 (0.600) | 1.13 | 6.876*** (0.000) | 1.14 |
| Control Variables | | | | | | | | | | | | | | |
| SIZE | -4.031*** (0.000) | 1.28 | -1.579 (0.115) | 1.31 | -2.821*** (0.005) | 1.31 | -1.993** (0.048) | 1.31 | -5.445*** (0.000) | 1.32 | -3.683*** (0.000) | 1.32 | -4.005*** (0.000) | 1.31 |
| AFUND | 2.996*** (0.003) | 1.38 | 3.991*** (0.000) | 1.41 | 0.155 (0.876) | 1.41 | 1.839* (0.067) | 1.41 | 1.545 (0.124) | 1.42 | 3.091*** (0.002) | 1.42 | 2.932*** (0.000) | 1.46 |
| GWTH | -1.090 (0.569) | 1.06 | -0.160 (0.872) | 1.07 | 0.209 (0.834) | 1.06 | -1.185 (0.237) | 1.07 | -0.521 (0.602) | 1.07 | 0.801 (0.423) | 1.06 | -0.489 (0.625) | 1.07 |
| LIQ | -0.570 (0.569) | 1.13 | -0.344 (0.731) | 1.15 | 0.206 (0.836) | 1.15 | -0.322 (0.747) | 1.15 | 0.194 (0.846) | 1.16 | -0.642 (0.521) | 1.14 | -0.476 (0.634) | 1.15 |
| ROA | 2.619*** (0.009) | 1.08 | 1.950* (0.053) | 1.10 | 1.261 (0.209) | 1.10 | 1.876* (0.062) | 1.10 | 1.490 (0.138) | 1.11 | 2.767*** (0.006) | 1.10 | 2.683*** (0.008) | 1.11 |
| VCY | 1.398 (0.164) | 1.20 | 1.819* (0.070) | 1.21 | 1.260 (0.209) | 1.22 | 0.013 (0.989) | 1.21 | 1.210 (0.227) | 1.21 | 0.037 (0.970) | 1.21 | 1.431 (0.154) | 1.22 |
| NFS | 1.204 (0.229) | 1.56 | 0.747 (0.455) | 1.57 | 0.729 (0.467) | 1.57 | -0.964 (0.336) | 1.57 | 0.331 (0.740) | 1.58 | -1.380 (0.169) | 1.58 | -0.445 (0.656) | 1.60 |
| LNAGE | 1.927* (0.055) | 1.39 | 0.981 (0.731) | 1.43 | 0.650 (0.516) | 1.43 | -0.517 (0.605) | 1.43 | 0.331 (0.740) | 1.43 | 2.837*** (0.005) | 1.43 | 1.966* (0.051) | 1.44 |
| GRE | -0.103** (0.054) | 2.06 | -1.963* (0.050) | 2.10 | -1.581** (0.011) | 2.10 | -1.306* (0.193) | 2.11 | -0.167** (0.086) | 2.10 | 1.136 (0.257) | 2.10 | -0.786** (0.076) | 2.11 |
| US | 1.199 (0.231) | 2.18 | -0.812 (0.417) | 2.54 | 1.146 (0.253) | 2.54 | 2.990*** (0.000) | 2.54 | -0.985 (0.326) | 2.55 | -0.162 (0.871) | 2.54 | 0.417 (0.676) | 2.54 |
| COUNT | - | - | - | - | - | - | - | - | - | - | - | - | Included | - |
| Constant | 2.323*** | - | 3.139*** | - | 0.541 | - | 0.773 | - | 1.187 | - | 1.615 | - | 2.016** | - |
| F-Value | 8.252*** | - | 4.484*** | - | 4.398*** | - | 8.683*** | - | 6.301*** | - | 7.178*** | - | 8.288*** | - |
| Adj. R ² | 0.47 | - | 0.32 | - | 0.32 | - | 0.46 | - | 0.38 | - | 0.43 | - | 0.47 | - |
| No of Obs. | 267 | - | 267 | - | 267 | - | 267 | - | 267 | - | 267 | - | 267 | - |

Notes: Please see Table 2 for full variable definitions. *** means significance at the 1% level (p<0.01); ** means significance at the 5% level (p<0.05); * means significance at the 10% level (p<0.10).

Table 8. Additional Analysis

| Dependent variable (Model) | Random effect (1) | Dep. Lags (2) | WLS (3) |
|-------------------------------|----------------------|----------------------|----------------------|
| TBE | -1.051** (0.041) | -2.0388** (0.012) | -3.674*** (0.000) |
| TSE | -0.012 (0.213) | -0.004 (0.707) | -1.151 (0.251) |
| TAQ | 2.243*** (0.000) | 1.163** (0.024) | 8.547*** (0.000) |
| TVCP | 2.523** (0.024) | 2.362*** (0.000) | 8.106*** (0.000) |
| Control Variables | | | |
| SIZE | -3.718** (0.099) | -6.128** (0.097) | -6.186*** (0.000) |
| AFUND | 0.100*** (0.001) | 0.109*** (0.000) | 7.455*** (0.000) |
| GWTH | 0.802 (0.421) | 4.736 (0.161) | 0.632** (0.005) |
| LIQ | -0.046 (0.594) | -0.088 (0.624) | -0.597 (0.559) |
| ROA | 3.417* (0.068) | 3.228** (0.002) | 5.567*** (0.000) |
| VCY | 0.044 (0.889) | 0.017 (0.907) | 1.126 (0.261) |
| NFS | 9.186* (0.085) | 6.743* (0.081) | -1.237 (0.217) |
| LNAGE | 1.025*** (0.001) | 0.602** (0.004) | 4.456* (0.076) |
| GRE | -0.612** (0.048) | -4.827** (0.086) | -0.546 (0.585) |
| US | 2.390*** (0.000) | 2.306*** (0.000) | 2.224** (0.042) |
| Constant | 9.127*** | 0.157** | 3.580*** |
| F-Value | - | 8.896*** | 5.553*** |
| Adj. R ² | - | 0.95 | 0.85 |
| No of Obs. | 267 | 178 | 267 |

Notes: Please see Table 2 for full variable definitions. *** means significance at the 1% level ($p < 0.01$); ** means significance at the 5% level ($p < 0.05$); * means significance at the 10% level ($p < 0.10$).

Appendix: Non-Financial reporting (NFR) content disclosure index

| Environmental protection (EPR) | 0 | 1 | 2 | 3 |
|---|----------|----------|----------|----------|
| 1) Boards` oversight about climate change | | | | |
| 2) Identification and recording of climate change risk | | | | |
| 3) HEIs policy to mitigate climate change | | | | |
| 4) GHG emissions target | | | | |
| 5) Managements` role to assess climate related risks | | | | |
| 6) Climate-related issues integrated with HEIs operational decision | | | | |
| 7) HEIs remuneration policy takes account of climate-related performance | | | | |
| 8) Environmental investment | | | | |
| 9) Environmental legislation | | | | |
| 10) Environmental project | | | | |
| 11) Information about noise reduction and air pollution | | | | |
| 12) Information about water and energy consumption | | | | |
| 13) Litigation, fines or environmental liabilities | | | | |
| 14) Integrated environmental issues in undergraduate and postgraduate curriculums | | | | |
| 15) Research and conferences organised to tackle environmental issues | | | | |
| Social responsibility and treatment of employees and students (RTES) | | | | |
| 1) Mission, vision and social value | | | | |
| 2) HEIs social goal | | | | |
| 3) Philanthropic investment | | | | |
| 4) Policy to support social project | | | | |
| 5) Student and teachers` community engagement | | | | |
| 6) Employee turnover | | | | |
| 7) Training and development policies for the staff and teacher | | | | |
| 8) Employee motivation and intensive | | | | |
| 9) Trade union representation | | | | |
| 10) Paid scholarship offers for employee development | | | | |
| 11) student pass rate and employment in own professional sector | | | | |
| 12) Student representation in management board | | | | |
| 13) Community social contribution report | | | | |
| 14) Graduate profile and employment after graduation | | | | |
| 15) Cost/price of the course per student | | | | |
| Respects for human rights (RHR) | | | | |
| 1) Health and safety at work | | | | |
| 2) Labour and social security legislation applicable to employees and teachers | | | | |
| 3) Accident reporting procedure at work | | | | |
| 4) Female/ethnic minority employee trade union representation | | | | |
| 5) Employee remuneration and its improvement as market inflation | | | | |
| 6) University commitment to prevent child labour implication | | | | |
| 7) University commitment to prevent gender pay gap | | | | |
| 8) University commitment on minimum payment on the basis of labour market | | | | |
| 9) Compensation of injury/death in work place | | | | |
| 10) Dismissal and replacement policies | | | | |
| 11) Any contingent liability related to labour and social security legislation | | | | |
| 12) Recruitment and selection policies | | | | |
| 13) Supporting government projects and campaigns | | | | |

| | | | | |
|--|--|--|--|--|
| 14) Mental health support for students and staff | | | | |
| 15) Health and well-being program for students and employees | | | | |
| Diversity on HEIs board (DHB) | | | | |
| 1) Board members profile including ethnic minority | | | | |
| 2) Age, gender and educational background of the member | | | | |
| 3) Role and responsibilities of board members | | | | |
| 4) Governance structure | | | | |
| 5) Different board committees and its structure | | | | |
| 6) Board composition (community representative) | | | | |
| 7) Board composition (employee representative) | | | | |
| 8) Board composition (student representative) | | | | |
| 9) Diversity information at work | | | | |
| 10) Remuneration and any other benefits for board member | | | | |
| 11) Selection process of board member | | | | |
| 12) Board size and meeting attended | | | | |
| 13) Number of Executives and Non-executive member | | | | |
| 14) Mandatory/ voluntary governance legislation and its application | | | | |
| 15) Board members` community engagement | | | | |
| Anti-corruption and bribery (ACB) | | | | |
| 1) Implication of consumer protection law | | | | |
| 2) Any donation received or given | | | | |
| 3) Establishment of ethical committee and structure | | | | |
| 4) Ethical application and approval process | | | | |
| 5) Undergraduate and postgraduate courses about anti-corruption and bribery | | | | |
| 6) Any conferences organised or research correlated with anti-corruption | | | | |
| 7) Any conferences organised or research correlated with bribery | | | | |
| 8) Litigations, fines or labour liabilities | | | | |
| 9) Research and development investment | | | | |
| 10) Spending on local suppliers | | | | |
| 11) Research publications/results communication related to anti-corruption | | | | |
| 12) Scholarship/funding for anti-corruption and bribery research project | | | | |
| 13) Name of the auditor and auditors report | | | | |
| 14) Anti-corruption and bribery statement publication | | | | |
| 15) Anti-corruption and bribery committee establishment, any activities e.g. workshop, webinar | | | | |

no disclosure = 0; descriptive disclosure without any link to strategy and performance = 1; descriptive disclosure and links with all strategy and performance = 2; descriptive disclosure linked with strategy and performance and compared with historic, present and future position = 3

Source: Authors own construction