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Influences of Institutional Factors on Corporate Governance Adherence: An Analysis of Multinational Corporations' Subsidiaries in an Emerging Market Context

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Influences of Country-level Factors on Corporate Governance Adherence: An Analysis of Multinational Corporations' Subsidiaries in India

ABSTRACT

Purpose: This study aims to investigate the influence of institutional factors on corporate governance (CG) compliance within subsidiaries of multinational corporations (MNCs) operating in India, drawing on institutional and legitimacy theories.

Methodology: The research approach employs a comparative analysis of CG compliance across MNC subsidiaries in India, focusing on the impact of institutional distance between home and host countries, the quality of national governance, and the level of corruption in the host country. It further examines how these factors vary between secondary and tertiary industries and between subsidiaries originating in developed versus developing economies. We employ a range of robust econometric techniques, including semi-parametric methods of panel data models, generalised method of moments (GMM), and non-parametric method of panel quantile regression (PQR), to conduct a comprehensive analysis.

Findings: The study suggests three principal findings: First, certain institutional mechanisms, namely national governance quality (NGQI), institutional distance (IDHII), and host country corruption (CL), exert a substantial impact on corporate governance compliance index (CGCI) levels in multinational corporation (MNC) subsidiaries. The empirical evidence reveals a positive and significant relationship between CGCI and NGQI and a negative yet significant relationship with CL at a 1% significance level. Second, the influence of these institutional factors varies across different sectors, suggesting a differential susceptibility to institutional impacts between secondary and tertiary industries. Third, the role of institutional factors diverges based on the subsidiary's country of origin. The data indicates that the compliance behaviours of subsidiaries from developed and developing economies are distinctly influenced, underscoring the pronounced effects of geographical and economic contexts on corporate governance practices.

Originality: This research contributes to the existing literature by providing a comprehensive understanding of how institutional factors affect CG compliance in MNC subsidiaries, with a specific focus on India's emerging economy. It offers original insights into the differential impacts of institutional factors across industries and origin countries, thereby providing practical recommendations for enhancing CG practices within MNC subsidiaries in emerging economies like India.

Keywords: Corporate Governance, Emerging Economy, India, Institutional Theory, Legitimacy Theory, Multinational Corporations' Subsidiaries.

1 INTRODUCTION

The wave of globalisation and liberalisation in the 1990s catalysed a transformative shift in the corporate landscape, positioning multinational corporations (MNCs) as pivotal economic and social actors, often with influence surpassing that of national states (Nye Jr. & Welch, 2012; Kuzey, Gerged, Uyar & Karaman, 2024). These corporations, however, face increasing pressures from investors and regulatory bodies demanding higher standards in reporting, accountability, performance, and strategic sustainability (Windsor, 2009). MNCs have been particularly scrutinised for exploiting the lenient institutional frameworks of developing countries to circumvent stringent governance, labour, environmental, and safety regulations (Oosterhout, 2008). Concurrently, a resurgence in interest in corporate governance (CG) has been driven by a spate of corporate scandals and financial breakdowns, prompting a re-evaluation of the governance practices of MNCs and their subsidiaries in emerging economies (Matesscu, 2015).

Despite the increased scholarly and practical engagement with the CG of MNCs over the past decade, there remains a significant gap concerning the specific governance challenges faced by MNC subsidiaries, especially in emerging markets like India, which present unique institutional dynamics (Du, Deloof, & Jorissen, 2015; Kiel, Hendry, & Nicholson, 2006). Adegbite (2015) underscores the critical need for deeper investigation into how these subsidiaries comply with CG in such contexts. While existing studies on MNC governance are plentiful, they predominantly apply agency theory, often neglecting the broader spectrum of institutional norms and values that shape governance practices (Clark & Brown, 2020). Zajac and Westphal (2004) advocate for a more pluralistic approach to CG research, suggesting a shift from narrow agency perspectives to include a more comprehensive understanding of institutional factors.

This research focuses on the impact of institutional factors on the compliance of MNC subsidiaries with CG in India—an emerging economy—providing an essential, yet underexplored, perspective. Such an approach enriches the CG discourse and enhances our understanding of the interplay between global corporate strategies and local governance environments. The progressive development of CG frameworks in India, marked by substantial legislative reforms and regulatory advancements, underscores this unique opportunity to study these dynamics (Uzma, 2018). Since the early 1990s, India has undergone a dramatic transformation in its approach to corporate governance, initially catalyzed by market liberalization that attracted foreign investment and necessitated robust governance mechanisms to protect these investments (Srivastava, Das & Pattanayak, 2018).

The evolution began with the establishment of the Securities and Exchange Board of India (SEBI) and enacting the SEBI Act in 1992, followed by significant legislative milestones such as Clause 49 of the listing agreement in 2006 and the comprehensive revision of the Companies Act in 2013. These developments have strengthened the CG landscape and aligned India's standards with international governance norms. The ongoing formation of committees and the production of reports aimed at revising CG norms further demonstrate India's commitment to enhancing transparency and accountability in corporate governance (Uzma, 2018).

Studying the influence of institutional factors on CG compliance in India offers invaluable insights due to the country's distinct approach to integrating governance regulations and listing requirements into its legal framework, a strategy shared only with the United States (The Organization for Economic Co-operation and Development, 2019). This context provides a unique case for understanding how institutional environments shape corporate governance

practices in emerging markets, a subject of increasing relevance given the global nature of modern businesses (Bhaumik et al., 2019).

Moreover, the historical context of India's corporate governance evolution—from a period marked by significant deficiencies in governance structures to its current state—serves as a compelling backdrop for exploring the efficacy of these reforms. Such a study enriches the academic discourse on corporate governance and offers practical implications for policymakers and international investors navigating the complexities of emerging markets (Madhani, 2015). Thus, investigating the impact of institutional factors on CG compliance in India fills a critical gap in the existing literature and contributes to the broader understanding of global corporate governance dynamics.

Our research seeks to fill this gap by focusing on the subsidiaries of MNCs as the primary unit of analysis and examining how institutional distance, alongside national governance quality and corruption level in the host country, affect CG compliance within these entities in India. This study is motivated by the practical need to understand the governance challenges faced by MNC subsidiaries in navigating the institutional complexities of emerging economies (Srivastava, Das, & Pattanayak, 2018). India presents a compelling case study due to its substantial improvements in governance systems post-market liberalization and the unique regulatory landscape that demands effective CG practices to protect foreign investors' interests (Bhaumik et al., 2019; Madhani, 2015; Uzma, 2018).

Our objectives in this study are to examine the impact of national governance quality, the institutional distance between home and host countries, and the corruption level in the host country on the CG compliance levels of MNCs' subsidiaries operating in India. We employ a range of robust econometric techniques, including semi-parametric methods of panel data models, generalised method of moments (GMM), and non-parametric method of panel quantile

regression (PQR), to conduct a comprehensive analysis. The key findings of this study have significant implications for both academia and practice, contributing to the literature on CG, institutional theory, and international business. By elucidating the complexities of CG compliance in the context of MNCs' subsidiaries, this research aids policymakers and practitioners in devising strategies to enhance governance practices, particularly in emerging economies such as India.

The remainder of the paper is organized as follows: Section 2 delves into the relevant literature and develops hypotheses, laying the groundwork for the study's theoretical contributions. Section 3 outlines the research design and methodology, ensuring a robust empirical investigation. Empirical findings are presented in Section 4, offering insights into the dynamics of CG compliance among MNCs' subsidiaries. Finally, Section 5 concludes the paper by summarizing the findings and discussing their practical implications for policymakers and corporate practitioners.

2 LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1. Theoretical Framework

This study is based on institutional and legitimacy theories, focusing on how the concept of 'legitimacy'—the perception that an entity's actions are in line with societal norms, values, and beliefs—is crucial in both frameworks. According to institutional theory, all social actors, including companies, aim to achieve legitimacy in their environment, leading to uniform behaviour among organisations due to regulatory pressures. For subsidiaries of MNCs, this means their strategies and actions often reflect the host country's practices, influenced by regulatory, social, and industry pressures to conform.

DiMaggio and Powell (1983) outlined three types of forces that lead to such conformity: coercive forces from legal requirements, mimetic forces from copying successful peers, and

normative forces from professional standards. These forces result in CG practices that align with external demands for legitimacy through various forms of adaptation, such as compliance with regulations, emulation of successful companies, and adherence to professional norms.

Suchman (1995) described three kinds of organisational legitimacy: pragmatic legitimacy, based on the organization's self-interest; moral legitimacy, focused on promoting societal welfare; and cognitive legitimacy, which is about cultural acceptance. In terms of CG, following regulations is a way for organisations to maintain their legitimacy by meeting institutional expectations.

In settings like MNC subsidiaries, legitimacy can be internally and externally challenged (Hillman & Wan, 2005; Kostova & Roth, 2002). External challenges come from the host country's institutional setup, while internal challenges may arise when subsidiaries don't align with their parent company's policies (Hillman & Wan, 2005; Kostova & Zaheer, 1999). In the following sections, we will develop our main research hypothesis, drawing from institutional and legitimacy theories and findings from previous studies.

2.2. National Governance Quality and Corporate Governance Compliance

National governance, comprising formal legal structures and informal societal norms, directly influences corporate behaviour through regulations, ethical mandates, and public expectations (Kaufmann, Kraay & Mastruzzi, 2011; Gerged, Marie & Elbendary, 2022). This influence manifests as coercive pressure from various stakeholders, including lobbyists, accounting organizations, and investors, compelling firms to adhere to established (DiMaggio & Powell, 1983) protocols, such as CG standards (Elamer, Ntim & Abdou, 2017). Empirical evidence supports this relationship; improved national governance has been associated with enhanced CG compliance and transparency, as demonstrated in the Middle East and North Africa (MENA) region (Sarhan & Ntim, 2018) and in European contexts where government

efficiency and regulatory quality have been shown to correlate positively with CG transparency (Matesscu, 2015).

Moreover, studies examining the broader effects of national governance on business outcomes suggest that higher governance quality impacts both financial performance and operational metrics (Nguyen, Locke & Reddy, 2015; Gerged, Beddewela & Cowton, 2023). This link underscores the profound influence of NGQ on corporate conduct and compliance. Martynova and Renneboog (2011) further highlight the importance of examining national institutional frameworks to understand their specific impact on CG reforms, particularly in developing countries.

However, research targeting the Indian context remains limited, particularly after the significant legislative changes in the Companies Act of 2013 (Madhani, 2015). This gap is critical given the transformative shifts in Indian CG frameworks, which have not been comprehensively analyzed since these regulatory updates. Earlier studies, such as the one by Madhani (2015), with their restricted scope—limited sample size and timeframe—call for more robust, longitudinal analyses that would provide deeper insights into the sustained effects of national governance on CG practices across varying institutional landscapes.

Considering these dimensions, the association between NGQ and CG compliance is not merely regulatory but also normative, as companies strive to legitimize their operations within their respective governance frameworks to maintain their social license to operate (Elamer et al., 2017; Uyar et al., 2024). This relationship suggests that entities in countries with high-quality governance frameworks are more likely to exhibit stringent CG compliance, aligning with the legal mandates and societal expectations shaping these frameworks. Thus, informed by both institutional theory and empirical evidence, the first hypothesis contends:

Hypothesis 1: National governance quality is significantly related to the CG compliance of MNCs' subsidiaries.

2.3. Institutional Distance and Corporate Governance Compliance

Institutional theory, which emphasizes the role of societal structures in shaping organisational behaviours and decisions, underpins the concept of institutional distance—a multifaceted approach to examining variances between countries in terms of their regulatory, cognitive, and normative environments (Scott, 1995; Kostova, 1996). Since the 1990s, institutional distance has been distinguished from cultural distance by incorporating a broader spectrum of factors beyond mere cultural elements, thus providing a comprehensive framework for international business studies (Kostova, 1996; Scott, 1995).

The relevance of institutional distance has been particularly pronounced in studies involving MNCs. For instance, researchers have utilised Kaufmann's Worldwide Governance Indicators to evaluate regulatory and institutional disparities when analysing MNC behaviours in emerging markets (Kolstad & Wiig, 2012; Shirodkar & Konara, 2017). Institutional distance accounts for differences in formal regulations and the unwritten rules and norms that govern business practices, thereby influencing MNC strategies and operations (Kostova & Zaheer, 1999; Xu & Shenkar, 2002). This theory argues that MNCs adjust their practices to gain legitimacy in the host environment and effectively align strategic adaptations from parent companies to subsidiaries (Kostova, 1999).

Building on the foundational works of Scott (1995) and DiMaggio and Powell (1991), an institutional theory further suggests that a country's institutional framework significantly shapes corporate strategies and behaviours by emphasizing legitimacy. This theoretical backdrop has led to investigations into the impact of institutional distance on subsidiary performance. For instance, while some studies have indicated that the negative effects of institutional distance can be mitigated by factors such as partial ownership and local experience

(Shirodkar & Konara, 2017), others have found a positive association between institutional distance and financial outcomes in specific contexts, such as foreign subsidiaries operating in Brazil (Marini Thome, Medeiros & Hearen, 2017) and CSR disclosure of MNCs operating in Libya (Almontaser & Gerged, 2024).

Despite these advancements, there remains a notable gap in the literature regarding how institutional distance affects corporate governance compliance within subsidiaries of MNCs. Considering the complexity of governance issues and the varying degrees of regulatory, cognitive, and normative pressures across different countries, it is imperative to examine this aspect. Therefore, our study's hypothesis aims to address this research gap by proposing that the degree of institutional distance between the home and host countries of an MNC significantly influences the corporate governance compliance of its subsidiaries. This hypothesis is critical for understanding the practical implications of institutional theory on the governance practices of global firms and their subsidiaries operating in diverse regulatory landscapes. Thus, we formulate the following hypothesis:

Hypothesis 2: Institutional distance between home and host countries is significantly related to the CG compliance of subsidiaries.

2.4. Corruption and Corporate Governance Compliance

Corruption is often defined as the misuse of public office for personal gain, involving public officials who abuse their power (Rose-Ackerman, 1997). The socio-cultural environment of a country significantly shapes the expected behaviour of businesses (Roberts & Greenwood, 1997). Research indicates that poor legal systems and weak governance lead to opaque operations within government departments, fostering corruption (Hellman, 2003). Prior studies have shown that corruption negatively affects environmental, social, and governance (ESG) disclosures (Ioannou & Serafeim, 2012). Additionally, lower levels of corruption are linked to better corporate governance (Judge, Douglas, & Kutan, 2008). The impact of corporate

governance and national culture on corruption levels has also been highlighted (Boateng et al., 2020).

In terms of a host country's corruption, cultural beliefs and the tendency of companies to mimic others play a crucial role. According to legitimacy theory, corruption can threaten a subsidiary's legitimacy by setting a norm that may not be legally correct but is culturally accepted. However, legitimacy still matters for MNCs as it validates the acceptance of subsidiaries in the host market and ensures their survival through social and economic exchanges (Miotto et al., 2020). As Juliao-Rossi et al. (2023) claimed, corruption in the host country increases information asymmetries, uncertainty, and obstacles in attaining and maintaining legitimacy for MNCs originating from developed countries. Although corruption is typically discussed in terms of illegal activities in corporate governance, its relationship with corporate governance compliance is less frequently explored. To fill this gap, our third hypothesis states:

Hypothesis 3: The level of corruption in the host country is significantly related to the CG compliance of MNCs' subsidiaries.

3 RESEARCH DESIGN

3.1. Sample Selection and Data

The research sample comprises 86 subsidiaries of MNCs listed on the BSE, covering the period from 2010 to 2019. These subsidiaries operate in 18 different industries and are based in 20 different home countries. The final dataset was obtained after applying specific criteria to include only those subsidiaries with sufficient observations and unbiased results. This resulted in 86 subsidiaries out of the initial 100 listed on the BSE in 2010. The criteria required firms to be listed on the stock exchange for at least eight out of ten years and have annual reports available for at least six years.

The selected sample period (2010-2019) is deliberately chosen to ensure a balanced representation of time before and after the implementation of the Companies Act 2013 in India. This significant reform extended governance standards and aimed to align Indian regulations with international governance norms. The study aims to analyse differences in corporate governance compliance levels among subsidiaries due to this major regulatory transformation. Data availability was a critical consideration, and the availability of corporate governance information also drove the selected period during those years.

Data on institutional and organisational variables were manually collected. Data for the national governance quality index (NGQI), the institutional distance between the home and host countries index (IDHHI) was sourced from the World Bank's website (World Bank, 2021), while yearly data for assessing the corruption level of the host country was obtained from the Corruption Perceptions Index (Transparency International, 2020). Information on board attributes and firm characteristics was mainly extracted from integrated annual reports. Control variables related to subsidiary size, age, and financial ratios (profitability and leverage) were gathered from business databases Money Control and Osiris.

3.2. Research Variables

Table I presents an overview of the variables used in this study categorised into three groups: dependent, independent, and control variables. The primary dependent variable is the corporate governance compliance index, which consists of 36 provisions covering rights and equitable treatment of shareholders, stakeholder involvement in corporate governance, disclosure and transparency, and board responsibilities. This index is based on and adapted from the Indian corporate governance scorecard, collaboratively designed by the Bombay Stock Exchange (BSE), International Finance Corporation (IFC), and Institutional Investor Advisory Services (IiAS) (BSE, IFC & IiAS, 2016).

INSERT TABLE I ABOUT HERE

The independent variables comprise the national governance quality index (NGQI), the institutional distance between the home and host countries index (IDHHI), and the corruption level (CL) of the host country. The NGQI serves as a proxy for evaluating the regulatory environment in the host country, while IDHHI is a relative measure to assess differences between the regulatory environments of the home and host countries. Whereas the National Governance Quality Index (NGQI) is calculated as a simple numerical average of the estimated values for government effectiveness, regulatory quality, and the rule of law (as per the Worldwide Governance Indicators) for the host country, in line with the existing corporate governance literature (Almaqtari et al., 2022; Gold et al., 2022; Lu & Wang, 2021; Nguyen, Nguyen et al., 2021), the regulatory institutional distance is measured as the difference between the simple average values of the six measures of the home and host countries based on previous studies (Shirodkar & Konara, 2017; van Hoorn & Maseland, 2016). Furthermore, the corruption level (CL) is measured by the country's score provided in the Corruption Perceptions Index (CPI) compiled by Transparency International (Transparency International, 2020). To avoid multicollinearity issues, the corruption level of the host country is treated as a separate variable despite its significance as a major institutional factor influencing firms' corporate governance compliance. This variable is proxied using a more reliable and comprehensive measure.

To address omitted variable bias, the third group of variables includes (i) internal board mechanisms, such as board size, board independence, and board gender diversity and (ii) firm-level characteristics, including subsidiary size, subsidiary age, profitability, and leverage.

3.3. Econometric Strategy and Modelling

This research employs panel data methods to increase the number of observations and address various statistical issues (Greene, 2014). Since panel data often suffer from heterogeneity and endogeneity, the study uses static, fixed effects (FE) and random effects (RE)

models, along with the dynamic generalised method of moments (GMM) model, to tackle these problems (Greene, 2014). The FE and RE models handle heterogeneity and multicollinearity effectively, while the GMM model addresses endogeneity concerns (Greene, 2014).

In addressing the complex dynamics inherent in panel data, this research adopts a robust methodological framework that allows for a thorough examination of the institutional drivers of CG compliance by MNCs' subsidiaries in India. The inherent characteristics of panel data, notably its capacity to enhance the volume of observations while simultaneously controlling for various statistical anomalies, necessitate the employment of sophisticated econometric techniques that can competently handle issues such as heterogeneity and endogeneity. To this end, the study employs fixed effects (FE) and random effects (RE) models, as well as dynamic generalised method of moments (GMM) models, each chosen for their respective strengths in addressing specific statistical concerns within the data. The FE and RE models are particularly adept at mitigating the concerns of heterogeneity and reducing the problems associated with multicollinearity (Greene, 2014). Based on the outcomes of the Hausman specification test, the FE model is selected over the RE model for the primary analysis, providing an effective mechanism for controlling for firm-specific heterogeneities by excluding time-invariant influences from individual units (Gujarati, 2015).

Acknowledging the potential for bidirectional causality between dependent and independent variables, this research further integrates the system-GMM approach as articulated by Blundell and Bond (1998) and elaborated upon by Baltagi (2008). This approach is particularly pertinent for dealing with datasets that exhibit high persistence in corporate governance variables, thereby enhancing the precision of the estimations (Almaqtari et al., 2022; Blundell & Bond, 1998; Gerged, 2021; Nguyen et al., 2015; Sheikh, Shah, & Akbar, 2018).

To ensure the robustness of the findings and to address the potential non-normality in governance data, this study incorporates the panel quantile regression (PQR) method as developed by Canay (2011). Unlike traditional linear regression techniques such as ordinary least squares (OLS) and fixed effects, PQR provides a robust alternative that is impervious to outliers and does not rely on the assumption of normality. Furthermore, the PQR approach is instrumental in accounting for unobserved heterogeneity and variable effects across different quantiles of the conditional distribution of the dependent variable, thus offering a more comprehensive understanding of the intricate relationships within the data (Canay, 2011; Gerged, 2021; Koenker & Bassett, 1978).

Through these methodological choices, this study ensures a rigorous and comprehensive analysis of the impact of institutional factors on corporate governance compliance, yielding insights that are both statistically robust and richly contextualised.

The quantile regression technique can be presented as follows:

$Y_{it} = X'_{it}\beta(\tau) + \alpha_{it} + \varepsilon_{it\tau},$	(1)
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Where,

$\varepsilon_{it\tau} = X'_{it}(\beta(U_{it}) - \beta(\tau))$ and	(2)
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$\varepsilon_{it\tau} = X'_{it}(\beta(U_{it}) - \beta(\tau)).$	(3)
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Then,

$Y_{it} = X'_{it}\beta(U_{it}) + \alpha_i,$	(4)
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Where Y_{it} is an observable explained variable, X'_{it} is a vector of independent variables for country i at time t ; $t = 1 \dots, T$; $i = 1, \dots, n$, the vector X'_{it} is assumed to contain a constant term, (U_{it}, α_i) are unobservable, and $U_{it} \sim U[0,1]$. β is an unknown parameter; the function

$\tau \mapsto X'\beta(\tau)$ is assumed to be strictly increasing in $\tau \in (0,1)$ and the parameter of interest is assumed to be $\beta(\tau)$.

This paper proposes the model in the following form:

$CGCI_{i,j,t} = \beta_0 + \beta_1 NGQI_{i,t} + \beta_2 IDHHI_{i,j,t} + \beta_3 CL_{i,t} + x_{i,t} + \mu_{i,t} + \varepsilon_{i,t}$	(5)
--	-----

Where CGCI represents the corporate governance compliance index for firm i , sector j in year t , NGQI denotes the Index for the quality of national governance, IDHHI is the Index for the institutional distance between host and home countries, CL implies corruption level in the host country, and x represents the control variables. β s are the estimated parameters that reflect the coefficients of the model.

4. EMPIRICAL FINDINGS

In this study, the CG compliance index consists of 36 CG elements, evaluated using a binary scoring system to align with the Indian CG framework's compliance requirements. This binary approach to scoring has been widely used in prior CG index constructions (e.g., Agyei-Mensah, 2019; Elmagrhi et al., 2016; Sarhan & Ntim, 2018). For the independent variable of national governance quality, we selected three indicators—government effectiveness, regulatory quality, and rule of law—based on established studies (Nguyen & Rugman, 2015; Nguyen et al., 2021; Van Essen et al., 2013). The second independent variable, regulatory Institutional Distance, is calculated using composite scores from six aggregate measures for both host and home countries, as suggested by previous research (Castaldi et al., 2019; Shirodkar & Konara, 2017; van Hoorn & Maseland, 2016). Lastly, the Control of Corruption (CC) metric, developed by Kaufmann, Kraay, and Mastruzzi (2014), measures the extent to which public power is used for personal gain, where higher index values indicate lower corruption levels in the country (Sena et al., 2018).

4.1. Descriptive Statistics

Table II presents a summary of statistics for the dependent, independent, and control variables during the sampled period. The dependent variable, CGCI, ranges from 0 to 98 percent, with a mean value of approximately 90.71 percent. This high mean value indicates that MNC subsidiaries generally maintain higher compliance standards. This finding aligns with previous evidence in the Indian context, suggesting that MNC subsidiaries are more compliant and transparent compared to domestic firms (Pattnaik & Gray, 2012). Theoretically, this supports the idea that MNC subsidiaries strive for higher compliance levels and better reporting practices to achieve dual legitimacy (Kostova, Roth & Dacin, 2008). The independent and control variables show considerable variation across the dataset.

INSERT TABLE II ABOUT HERE

The mean values of CGCI presented in Table III indicate that compliance levels increased by 4-5% following the introduction of new mandatory requirements in 2014. The improvements were evident from the financial year 2015 onwards, as changes were reported in the subsequent year's annual reports. Over the entire sampled period, the aggregate CG compliance level increased from 84.36% in 2010 to 94% in 2019, indicating a significant rise of nearly 10%. These statistics suggest that the local regulatory environment significantly impacts the corporate governance compliance of subsidiaries, consistent with findings from previous studies on the quality of national governance (Matesscu, 2015; Sarhan & Ntim, 2018).

INSERT TABLE III ABOUT HERE

4.2. Correlation Analysis

Table IV presents the correlation matrix, which reveals the strength and direction of linear relationships among the study variables. CGCI exhibits statistically significant positive correlations with NGQI (0.308, $p < 0.001$) and BGD (0.570, $p < 0.001$), indicating that higher

values of CGCI are associated with higher values of these variables. Conversely, CGCI is negatively correlated with CL (-0.342, $p < 0.001$) and IDHHI (-0.077, $p < 0.05$). Similarly, IDHHI shows a positive relationship with SAGE (0.211, $p < 0.001$), ROA (0.226, $p < 0.01$), and LEV (0.226, $p < 0.01$), while being negatively correlated with NGQI (-0.259, $p < 0.001$) and BGD (-0.152, $p < 0.01$). NGQI also has negative associations with CL (-0.331, $p < 0.001$) and BGD (-0.466, $p < 0.001$), suggesting inverse relationships between these variables.

CL shows significant negative correlations with BOS (-0.397, $p < 0.001$) and BOI (-0.185, $p < 0.001$), indicating that higher levels of CL may be associated with lower BOS and BOI values. ROA is positively correlated with SS (0.292, $p < 0.001$) and SAGE (0.236, $p < 0.001$), while SAGE has a weaker positive correlation with ROA (0.0784, $p < 0.05$). LEV shows minimal significant associations with other variables, indicating a lower likelihood of multicollinearity issues. Overall, while some variables are significantly correlated, the coefficients remain below 0.70, suggesting that multicollinearity is unlikely to pose a major issue in subsequent analyses.

INSERT TABLE IV ABOUT HERE

4.3. Regression Analysis

This subsection presents the empirical findings regarding the institutional determinants of CG compliance of MNC subsidiaries in India. We start by discussing national governance indicators' influence on MNCs' subsidiary CG compliance, building upon the model proposed in Equation (5). To facilitate a comprehensive analysis, this subsection is divided into two subsections. Firstly, the aggregated results will be reported to provide a general overview of the empirical relationships. Following that, we will delve into the disaggregate analysis conducted at two levels: sectorial and home country. This approach is crucial as it allows us to understand how national governance, institutional distance, and corruption levels impact the CGCI.

4.3.1. Results for Aggregate Level (Full sample):

The regression results for both FE and GMM models have been presented in Table V. The findings confirm the first hypothesis, indicating a positive and significant relationship between the NGQI and the CGCI. The FE is deemed appropriate for the estimations based on the Hausman test statistics ($\chi^2(9) = 202.19$; $\text{Prob} > \chi^2 = 0.0000$). The FE estimation demonstrates that a 1-point improvement in the national governance index results in an approximately 8% increase in CG compliance. Furthermore, when accounting for endogeneity, the impact of national governance on CGCI is further enhanced. The GMM estimate shows that a 1-point increase in the quality of Indian governance leads to a 9.6% rise in subsidiaries' CG compliance.

INSERT TABLE V ABOUT HERE

These empirical findings support the theoretical assumption that the regulatory environment of the host country plays a crucial role in determining the level of CG compliance among subsidiaries. It is evident that reforms in the CG regime can significantly improve compliance levels, particularly in countries with higher-quality rules, regulations, and effective government implementation. Subsidiaries in such environments tend to trust the CG Code and adhere more diligently to its regulations. These results are consistent with previous evidence from Baldini et al. (2016), Matesscu (2015), Nguyen et al. (2015), and Sarhan and Ntim (2018), which also reported a positive and significant association between national governance quality and CG compliance and disclosures. In the context of India, these findings align with prior research demonstrating the influence of legal, institutional, and regulatory configurations on the CG practices of foreign firms (Baldini, Maso, Liberatore, Mazzi & Terzani, 2016; Matesscu, 2015; Madhani, 2015; Nguyen et al., 2015; Sarhan & Ntim, 2018).

Secondly, we report the effect of institutional distance on CGCI. Our empirical results regarding the association between the Institutional Distance Host-Home Index (IDHHI) and

CGCI support the second hypothesis, revealing a positive and significant association between IDHHI and compliance levels. The FE estimation coefficient indicates that the CGCI increases by 3.8% with a 1-point increase in institutional distance. Although the magnitude of this coefficient is lower in GMM estimations, it still suggests that compliance levels improve with greater institutional distance between the host and home countries. Theoretically, a higher difference in regulatory and institutional distance implies increased costs for obtaining and maintaining legitimacy, which can put foreign firms at a competitive disadvantage (Kostova & Zaheer, 1999). Despite these challenges, MNCs' subsidiaries tend to demonstrate better CG compliance levels than domestic firms to enhance their reputation and foster goodwill within local communities (Kostova & Zaheer, 1999). Especially in the case of MNCs' subsidiaries based in developed countries, strict adherence to parent companies' governance practices is often observed, as it helps them gain internal legitimacy and thereby ensures better CG compliance.

Finally, concerning the corruption level of the host country, the findings confirm the third hypothesis, revealing an inverse relationship between the corruption level and the CG compliance of foreign subsidiaries. The FE estimation and the GMM model show negative coefficient values of -0.190 and -0.160, respectively. As expected from the theoretical standpoint, weaker institutions and higher corruption levels result in illegitimate and inefficient CG practices, leading to lower compliance levels. Even MNCs that uphold impeccable behaviour in their home countries seem susceptible to adopting a more lenient attitude in developing countries characterized by malleable laws and corrupt public officials (dela Rama, 2012). These findings align with prior claims that corruption negatively impacts CG practices (Sena et al., 2018).

INSERT TABLE VI ABOUT HERE

To enhance the robustness of the model, a non-parametric approach using quantile regression is employed. The results from the Fixed Effect Panel Quantile Regression (FEPQR) (Canay, 2011), reported in Table VI, validate the positive relationship between the national governance quality index and CGCI in India. Additionally, the magnitude of this relationship is higher compared to FE and GMM estimations. The estimates indicate that a 1-point increase in the national governance index results in an average increase of 11.47%. Notably, the positive impact is more significant at higher quantiles, with CG compliance improving by approximately 15% at the 60th percentile and around 12% at the 10th, 30th, and 40th percentiles.

INSERT TABLE VII ABOUT HERE

Similarly, regarding corruption levels, the estimations show that higher corruption levels in the host country (India) lead to a lower level of CGCI, and this impact is significant across all percentiles. These results are consistent with the findings from the FE and GMM estimations, providing further support for the third hypothesis. Interestingly, the negative effect is amplified in FE and GMM estimations.

4.3.2. Results for Disaggregate Level based on Industry Type:

The impact of the NGQI on corporate compliance has been explored thus far without considering the differences in effects by sector and home country. Thus, it is pertinent to investigate how compliance varies based on these factors. This section proceeds by re-estimating the model (Equation 5) using data specific to the manufacturing and service sectors. By conducting this disaggregated analysis, the study posits that these three antecedents - namely, national governance quality, the institutional distance between home and host countries, and corruption level - significantly influence compliance levels in both industries. However, the influence of institutional variables is more pronounced in the service sector, even though the direction of the relationship remains consistent for both industry types. A summary of the results of the sectorial analysis can be found in Table VII, which indicates that the

national governance index has a positive and significant effect on corporate compliance. Nevertheless, this impact varies across sectors, with subsidiaries in the service sector demonstrating higher compliance compared to those in the manufacturing sector. For instance, the findings reveal that a one-point increase in the NGQI leads to approximately a 10% increase in CGCI in the service sector and an 8% increase in the manufacturing sector.

INSERT TABLE VIII ABOUT HERE

The service industries' greater responsiveness to changes in institutional configurations can be attributed to their predominant international operations and heightened competition (Narayanaswamy et al., 2012). Due to the nature and scope of their business activities and extensive international exposure, service firms display greater adaptability to changes in institutional configurations and exhibit more flexibility in adopting corporate governance practices. These empirical findings align with previous research in the corporate governance literature, indicating that service industries generally exhibit higher compliance and disclosure levels compared to other sectors (Bhasin & Shaikh, 2013; Juhmani, 2017; Madhani, 2014; Peters & Bagshaw, 2014). Additionally, these predictions corroborate the results obtained from the evaluation of domestic firms in India using the Indian Corporate Governance Scorecard (BSE, IiAS & IFC, 2018), which also demonstrated that service-focused firms tend to demonstrate higher compliance relative to firms in other sectors.

The negative and significant effect of corruption on CGCI persists for both manufacturing and service sectors, although it is more pronounced in the service sector. To ensure robustness, the model is re-estimated using quantile regression. The results of the FEPQ regression (Canay, 2011) for the manufacturing and service sectors are reported in Tables VIII and IX, respectively. These results reaffirm that the service sector exhibits higher compliance relative to the manufacturing sector. Specifically, the study highlights that enhancing the

national governance index by one-point leads to a 15.46% increase in corporate compliance for the service sector and a 10.12% increase for the manufacturing sector.

INSERT TABLE IX ABOUT HERE

INSERT TABLE X ABOUT HERE

The variable measuring institutional distance (IDHHI) is found to have a significant impact on CG compliance only at the 0.95 quantiles, whereas NGQ and CL remain significant across all quantiles for manufacturing industries. In contrast, IDHHI is predicted to be significantly and positively associated with CG compliance levels at all quantiles except 0.10 and 0.20, with the magnitude of the coefficient being relatively higher in the case of service industries.

As for the effect of corruption on corporate compliance, it remains consistently negative and significant. An increase in the corruption level leads to a decrease in the CGCI of the subsidiaries in the Indian economy. Specifically, a one percent increase in corruption level in the host country results in a 0.3% decline in CGCI for the service sector and a more substantial reduction of about 0.4% for the manufacturing sector (Narayanaswamy et al., 2012).

4.3.3. Results for Disaggregate Level based on Country of Origin:

In the presented analysis, Table X displays the empirical outcomes obtained from the employment of the FE model on subsidiaries originating from both advanced economies and developing countries. The results of the Hausman test for the specifications pertaining to advanced home countries indicate a p-value of 0.000. Consequently, the null hypothesis is rejected, leading to the acceptance of the FE model as the more suitable choice for this specific panel.

INSERT TABLE XI ABOUT HERE

A noteworthy observation arising from the disaggregate analysis, which categorizes the subsidiaries based on the economic and developmental status of their country of origin, reveals a significant association between all institutional variables examined in the current study and the CG compliance of subsidiaries originating from advanced economies. Conversely, no significant association is found between the antecedent of IDHHI and the compliance levels of subsidiaries based in developing economies.

Furthermore, the empirical findings suggest a convergence of compliance levels among all subsidiaries, irrespective of the economic status of their home country. This phenomenon can potentially be attributed to the greater influence of local regulations in the host market on the compliance behaviour of subsidiaries compared to the governance norms of their home country. Consequently, subsidiaries tend to adapt to local institutions in order to establish and maintain external legitimacy while operating in foreign markets.

Unfortunately, due to data issues, it was not possible to obtain PQR estimations for the sample of subsidiaries based in developing countries. Consequently, PQR estimations for the disaggregate analysis based on the country of origin are not included in this report.

4.3.4. Additional Sensitivity Checks:

During this research, a series of supplementary sensitivity tests have been carried out to corroborate the robustness of the findings. Firstly, an alternative weighted Composite Governance Quality Index (W-CGCI) has been employed in lieu of the unweighted CGCI. This alternative Index distributes equal 25% weights to each of its four sub-indices.

Secondly, in order to reassess the regression results, an alternate proxy for national governance quality has been utilized. Following the approach adopted in prior governance research (Nguyen et al., 2021), an alternative national governance index, denoted as NGQI(a),

has been constructed. NGQI(a) is derived using the first principal component extracted from three aggregate measures via Principal Component Analysis (PCA).

Thirdly, to test the generalisability of the findings of the current study, the institutional distance index utilised in the main analysis has been substituted with IDHHI(a). This alternative index, IDHHI(a), integrates measures obtained through PCA with varimax rotation, drawing from the methodology employed in previous studies within the International Business domain (Hernandez & Nieto, 2015; Nayyar, Mukherjee & Varma, 2022). Lastly, an alternative regression model of pooled Ordinary Least Squares (OLS) regression has been conducted to re-estimate the results for the aggregate sample. The outcomes from this pooled OLS regression largely align with the main findings, displaying minor discrepancies.

Taken together, all of the aforementioned results suggest that the findings of the current study remain largely unaffected by the use of alternative indices and econometric models. Due to space constraints, detailed regression results for the additional sensitivity tests are omitted in this document.

5. CONCLUSION AND IMPLICATIONS

5.1. Summary of Research Findings

In this study, we examine how national governance quality, institutional distance, and corruption levels affect CG compliance in MNCs' subsidiaries in emerging economies. Our findings offer insights into the institutional factors that influence CG practices among these subsidiaries. The empirical evidence corroborates the prior findings in CG literature addressing the impact of country-level variables on CG compliance and disclosures (Mateescu, 2015; Morris, Susilowati & Gray, 2012; Reddy & Sharma, 2014; Sarhan & Ntim, 2018). First, we find that the quality of governance in the host country significantly affects MNCs' subsidiaries'

CG compliance, echoing findings from previous research in CG literature (Baldini et al., 2016; Matesscu, 2015; Nguyen, Locke & Reddy, 2015; Sarhan & Ntim, 2018). Notably, improvements in CG compliance among subsidiaries in India were observed following the implementation of the Companies Act 2013, suggesting the effectiveness of strengthening CG regulations. Second, the empirical findings suggest that a greater institutional distance between the home and host countries is associated with higher CG compliance among subsidiaries. This implies that subsidiaries from countries with more robust institutions tend to have higher CG compliance. However, there is a cautionary note that subsidiaries from developed economies might lower their CG standards to leverage institutional gaps in emerging markets.

Third, the results demonstrate a negative relationship between corruption in the Indian market and CG compliance, aligning with studies showing how societal corruption undermines ESG disclosures (Ioannou & Serafeim, 2012). Addressing corruption through effective policies and regulatory enforcement is essential. Fourth, the empirical analysis provides evidence that governance quality, institutional distance, and corruption significantly impact both manufacturing and service industries, with a more pronounced effect in the service sector. This suggests the need for sector-specific policies to enhance CG compliance across industries. Fifth, our results cast a new light on the influence of institutional factors on CG compliance based on the subsidiary's country of origin, indicating differing behaviours between subsidiaries from developed and developing economies. This highlights the complex nature of institutional impacts based on economic and developmental contexts.

5.2 Policy Implications and Recommendations

The findings of this study offer several critical policy implications and recommendations regarding corporate governance (CG) compliance within multinational corporations' subsidiaries. First, our results support prior research by demonstrating that

national governance quality—encompassing statutory frameworks, CG disclosure norms, and equity market regulations—has a profound impact on CG compliance among subsidiaries operating in various markets (Mateescu, 2015; Sarhan & Ntim, 2018). The increased compliance following the enactment of the Companies Act 2013 further underscores the effectiveness of mandatory CG stipulations. To support this momentum toward effective governance, policymakers and regulators should continue refining the CG regulatory framework to align with global standards advocated by organizations such as the OECD. Such reforms not only foster a more competitive economy but also enhance international legitimacy and attract foreign investment.

Second, our results suggest that subsidiaries from more developed economies may exploit institutional gaps in emerging markets to weaken their CG practices. To counteract this, it is essential for policymakers to implement robust assessment policies that prevent subsidiaries from lowering compliance standards. Establishing stringent monitoring mechanisms will enable local authorities to intervene decisively in cases of regulatory evasion and reinforce compliance across subsidiaries.

Third, the study highlights the negative impact of corruption on CG compliance, particularly in the Indian context. This finding suggests that addressing corruption and bureaucratic inertia is essential. Regulatory bodies should be equipped with enhanced prosecutorial authority to take firm action against fraudulent activities, and imposing stringent penalties on subsidiaries that engage in corrupt practices will serve as a deterrent and foster a culture of accountability.

Fourth, the varying compliance levels across sectors reveal the need for sector-specific regulatory strategies. Subsidiaries in the service or tertiary sectors generally achieve higher compliance due to their greater exposure to global standards and competitive pressures.

However, subsidiaries in manufacturing or secondary sectors may require additional regulatory incentives and interventions to meet established CG standards.

Finally, it is recommended that market regulators and policymakers implement a comprehensive governance awareness program for firms in the Indian market. Rather than viewing compliance with CG requirements as a mere checklist, firms should be encouraged to see it as a strategic approach to fulfilling both legitimacy and efficiency objectives while mitigating environmental uncertainties in the host market. Although it may be challenging for businesses to independently initiate improved CG practices or undertake significant changes in governance mechanisms without external enforcement, an awareness campaign can help firms recognize and appreciate the long-term advantages of such efforts. Ultimately, policy initiatives should seek to instill a governance culture that transcends basic regulatory adherence and embraces the principles of effective governance.

5.3 Limitations and Future Research

While this study employs robust econometric methods and provides valuable insights, certain limitations must be acknowledged. The quantitative approach may not fully capture the complexities of actual governance practices. Future research should incorporate primary data collection to deepen the understanding of the dynamic interplay between institutional factors and organizational characteristics, thereby expanding the scope of CG compliance studies. Moreover, subsequent studies could benefit from exploring various coding schemes (e.g., ordinal and binary) and different index weightings (e.g., unweighted and weighted) to further test the robustness of the findings.

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Table I:
Summary Table of Variables

Variable	Description	Operationalization
Corporate governance compliance index (CGCI)	This Index comprises 36 CG elements extracted from the Indian Corporate Governance Scorecard, developed jointly by BSE Limited, IFC and IiAS (2018). Each CG provision of the adapted Index is awarded a value of 1 if it follows reasonable practices for that element of corporate governance and 0 otherwise.	Category score is calculated as the aggregate score of all questions under the category, and then the total score is obtained by adding scores for all four categories of rights & equitable treatment of shareholders (25%), the role of stakeholders in CG (19.4%), disclosure & transparency (30.6%) and responsibilities of the board (25%).
Index for quality of national governance (NGQI)	Composite measure of national governance quality based on three of the six aggregate measures of WGI.	A simple numerical average of the percentile ranks for WGIs of government effectiveness, regulatory quality and the rule of law.
Index for Institutional distance between host & home countries (IDHHI) (Regulatory Distance)	Composite measure of institutional distance on WGIs.	Institutional profile score (simple average value of the six measures) of the home country - Institutional profile score (simple average value of the six measures) of the host country.
Corruption level in the host country (CL)	Measured through Corruption Perceptions Index (CPI): a composite index based on multiple sources of data and multi-year averages.	Country score in the CPI for each year
Board size (BS)	Total number of directors, including both executive & non-executive directors on the subsidiary board.	The total number of directors on the subsidiary board.
Board Independence (BOCO)	The proportion of independent directors to total board members on the subsidiary board.	Number of independent directors/ total number of directors on the subsidiary board.
Gender diversity on Board (BGD)	The proportion of women directors to total board members on the subsidiary board.	Number of women directors/ total number of directors on the subsidiary board.
Subsidiary size (SS)	The magnitude of operations of the subsidiary in the host country.	Natural logarithm of the total number of employees.
Subsidiary age (SAGE)	Time since the incorporation of the subsidiary.	Natural logarithm of the age of the subsidiary.
Firm profitability (ROA)	Net income is divided by the total assets at the end of the year.	Net Income/ Total Assets.
Leverage (LEV)	Total long-term debt divided by total assets.	Total Debt/Total Assets.
CGCI(a)	This Index comprises 36 CG elements extracted from the Indian Corporate Governance Scorecard, developed jointly by the BSE, IFC and IiAS (2018).	Each category is assigned an equal weight of 25%.
NGQI(a)	Alternative Index for quality of national governance.	The first principal component of the three measures is extracted through Principal Component Analysis (PCA).
IDHH(a)	Composite measure of institutional distance based on PCA	The first principal component obtained through PCA with varimax rotation

Source: Authors own work

Table II:
Summary Statistics for Variables

Variables	Count	Mean	Std. Dev.	Min	Max	Skew.	Kurt.
CGCI	859	90.71	6.659	0	98	-8.884	120.839
NGQI	860	-0.13	0.101	-0.3	0	-0.556	2.225
IDHHI	860	1.544	0.433	-0.3	2.3	-1.999	8.68
CL	860	37.4	3.233	31	41	-0.664	2.283
BOS	833	8.946	2.66	3	20	0.572	3.452
BOI	822	0.473	0.351	0.02	7	16.128	295.273
BGD	835	0.095	0.093	0	0.43	0.691	2.839
SS	710	3693.02	6966.367	68	40426	3.49	15.435
SAGE	860	44.977	21.769	1	99	0.493	2.542
ROA	840	8.53	11.299	-91.2	51.2	-2.125	20.126
LEV	840	-2.667	86.809	-2504.46	92.56	-28.557	823.211

Notes: Variables are operationally defined in Table I. Source: Authors own work

Table III:
Descriptive Statistics for CGCI

Year	Count	Mean	SD	Median	Min	Max
2010	86	84.36047	16.41012	86	0	94
2011	86	87.61628	3.068506	88	78	94
2012	86	87.87209	2.929752	88	81	94
2013	86	88.15116	2.968531	88	81	94
2014	86	89.55814	3.190444	89	81	97
2015	86	93.51163	2.624519	94	85	97
2016	86	93.84884	2.089286	94	88	97
2017	86	94.04651	1.915307	94	88	97
2018	86	94.15116	1.88191	94	88	98
2019	85	94.02353	2.029406	94	88	98
Total	859	90.71013	6.658575	91	0	98

Notes: Variables are operationally defined in Table I. Source: Authors own work

Table IV:
Correlation Matrix

Variable	CGCI	IDHHI	NGQI	CL	BOS	BOI	BGD	SS	SAGE	ROA	LEV
CGCI	1.000										
IDHHI	-0.0770*	1.000									
NGQI	0.308***	-0.259***	1.000								
CL	-0.342***	0.116***	-0.331***	1.000							
BOS	0.0137	0.149***	0.00564	0.00129	1.000						
BOI	0.00159	-0.153***	0.0658	0.00149	-0.123***	1.000					
BGD	0.570***	-0.152***	0.466***	-0.397***	-0.185***	0.0387	1.000				
SS	0.0356	0.0534	-0.0208	0.0277	0.196***	-0.047	-0.018	1.000			
SAGE	0.0578	0.211***	0.0834*	-0.0725*	0.138***	-0.0358	0.0197	0.0372	1.000		
ROA	0.0363	0.226***	0.0211	0.0784*	0.138***	-0.0808*	-0.0215	0.292***	0.236***	1.000	
LEV	0.0810*	0.00337	-0.00453	-0.0279	-0.011	0.00713	0.0314	0.00733	0.062	0.0188	1.000

Notes: Variables are operationally defined in Table I.* p<0.05, ** p<0.01, *** p<0.001. Source: Authors own work

Table V:
Regression Results for Aggregate Sample

VARIABLES	(1) FE	(2) RE	(3) GMM
Lagged CGCI	-	-	0.0567*** (0.0109)
NGQI	7.917*** (1.239)	9.406*** (1.055)	9.696*** (1.096)
IDHHI	3.814*** (1.058)	-0.379 (0.557)	1.988** (0.913)
Corruption level	-0.190*** (0.0233)	-0.282*** (0.0251)	-0.160*** (0.0206)
BOS	0.0932* (0.0501)	0.0873* (0.0511)	0.0647 (0.0584)
BOI	-0.244 (0.285)	-0.0759 (0.316)	-0.0363 (0.301)
BGD	8.848*** (1.185)	16.38*** (1.158)	17.89*** (1.300)
SS	7.54e-05** (3.60e-05)	6.75e-05** (2.89e-05)	9.24e-05** (4.58e-05)
SAGE	0.603*** (0.0420)	0.0313*** (0.0115)	0.0171 (0.0242)
ROA	-0.000857 (0.0103)	-0.0116 (0.0111)	-0.00411 (0.0112)
LEV	-0.141** (0.0629)	-0.157** (0.0690)	-0.144** (0.0684)
Constant	63.53*** (3.120)	99.77*** (1.382)	87.12*** (2.264)
Observations	691	691	635
R-squared	0.747	-	-
Hausman test (FE)	chi2(9) = 202.19 Prob > chi2 = 0.0000	-	-
Sargan Test	-	-	chi2 (43)=367.034 Prob > chi2 = 0.0000
Number of id	84	84	84

Notes: Variables are operationally defined in Table I. Source: Authors own work

Table VI:

Dependent Variable: Corporate Governance Compliance

Independent Variable	Number of Hypotheses	Finding Significance	Hypothesis Status	Coefficient Value (FE Model)	Coefficient Value (GMM Model)
NGQI	1	Significant (1%)	Accepted	7.917***	9.696***
IDHHI	2	Significant (1%)	Accepted	3.814***	1.988***
CL	3	Significant (1%)	Accepted	-0.190***	-0.160***

Notes: Variables are operationally defined in Table I. Source: Authors own work

Table VII:
Panel Quantile Regression Estimations for Aggregate Sample

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	0.10	0.20	0.30	0.40	0.5	0.60	0.70	0.80	0.90	0.95
NGQI	11.5013*** (1.5583)	10.1561*** (1.5737)	11.9133*** (1.7352)	11.7857*** (1.5422)	10.0397*** (1.6825)	14.9290*** (1.4312)	13.6065*** (1.3718)	10.4942*** (1.2191)	8.3669*** (2.1191)	11.9139*** (2.2084)
IDHHI	0.5319 (0.4530)	0.4212 (0.2751)	0.3988 (0.3662)	0.1698 (0.3627)	-0.0016 (0.2877)	0.0890 (0.2658)	0.1005 (0.2464)	0.0563 (0.1690)	0.6903 (0.4608)	1.4826*** (0.2071)
CL	-0.5105*** (0.0562)	-0.5739*** (0.0470)	-0.4220*** (0.0434)	-0.3937*** (0.0357)	-0.3126*** (0.0383)	-0.2100*** (0.0422)	-0.2302*** (0.0234)	-0.2129*** (0.0182)	-0.2478*** (0.0557)	-0.1492*** (0.0436)
BOS	-0.1256** (0.0578)	-0.0508 (0.0630)	0.0278 (0.0658)	0.0889 (0.0580)	0.1083** (0.0489)	0.0682 (0.0531)	0.1454*** (0.0420)	0.1430*** (0.0341)	0.1371** (0.0650)	0.0587 (0.1055)
BOI	0.3952 (0.8803)	0.2546 (2.1503)	0.1395 (2.5174)	0.0071 (2.0398)	-0.0658 (0.6808)	0.2479 (0.6637)	0.1136 (0.3452)	0.4158 (1.7250)	3.9551** (1.6294)	2.2835 (4.3949)
BGD	11.1832*** (1.5144)	10.7846*** (1.7862)	12.7765*** (2.0134)	14.5201*** (1.6167)	14.3301*** (1.6236)	11.2018*** (1.4633)	12.6577*** (1.1346)	11.8912*** (0.9786)	14.0941*** (2.4951)	10.7112*** (2.7491)
SS	-0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000* (0.0000)	0.0000 (0.0000)	0.0000* (0.0000)	0.0001*** (0.0000)	0.0000 (0.0000)
SAGE	0.0043 (0.0060)	0.0030 (0.0056)	0.0006 (0.0045)	-0.0035 (0.0050)	-0.0024 (0.0054)	-0.0014 (0.0061)	0.0014 (0.0043)	0.0006 (0.0033)	-0.0005 (0.0079)	-0.0118** (0.0057)
ROA	-0.0195 (0.0200)	-0.0098 (0.0114)	-0.0055 (0.0102)	-0.0081 (0.0111)	-0.0070 (0.0123)	0.0031 (0.0092)	0.0026 (0.0065)	0.0032 (0.0091)	0.0071 (0.0197)	0.0006 (0.0070)
LEV	-0.5295*** (0.1109)	-0.2791** (0.1338)	-0.3226*** (0.1210)	-0.2066 (0.2497)	-0.0414 (0.1556)	-0.0711 (0.0997)	-0.0863 (0.1114)	0.0091 (0.0497)	-0.0373 (0.1295)	-0.1248 (0.1783)
Constant	107.6497*** (2.4515)	110.1907*** (2.0375)	105.1603*** (2.2450)	104.4621*** (1.8827)	102.0895*** (1.4766)	99.9350*** (1.6721)	100.2872*** (1.1422)	99.7154*** (1.3324)	99.1150*** (2.4847)	98.2004*** (2.8679)
Observations	691	691	691	691	691	691	691	691	691	691

Notes: Variables are operationally defined in Table I. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Source: Authors own work

Table VIII:
Regression Results for Disaggregate Sample (Based on Industry Type)

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	FE	RE	GMM	FE	RE	GMM
	Manufacturing	Manufacturing	Manufacturing	Service	Service	Service
L1.CGCI	-	-	0.0549*** (0.0108)	-	-	0.502*** (0.144)
NGQI	7.487*** (1.396)	8.389*** (1.138)	9.118*** (1.179)	9.709*** (2.721)	17.03*** (2.887)	8.912** (4.319)
IDHHI	3.838*** (1.207)	-0.473 (0.587)	1.563 (1.044)	2.150 (2.317)	3.434*** (0.799)	4.416 (3.287)
CL	-0.182*** (0.0252)	-0.264*** (0.0268)	-0.144*** (0.0212)	-0.237*** (0.0626)	-0.405*** (0.0846)	-0.193** (0.0859)
BOS	0.0900* (0.0546)	0.0830 (0.0543)	0.0407 (0.0626)	0.120 (0.133)	0.250* (0.144)	0.113 (0.188)
BOI	-0.252 (0.290)	-0.0813 (0.318)	-0.0622 (0.298)	1.953 (3.008)	4.714 (3.094)	6.564 (4.930)
BGD	9.439*** (1.323)	17.34*** (1.248)	18.00*** (1.359)	6.616** (2.791)	8.069** (3.291)	7.612 (5.722)
SS	8.16e-05* (4.34e-05)	6.55e-05* (3.35e-05)	0.000123*** (4.60e-05)	8.80e-05 (6.75e-05)	7.46e-05** (3.35e-05)	5.69e-05 (8.03e-05)
SAGE	0.598*** (0.0475)	0.0360*** (0.0125)	-0.0144 (0.0276)	0.582*** (0.0936)	0.0534** (0.0267)	-0.0998 (0.106)
LEV	-0.154** (0.0643)	-0.163** (0.0695)	-0.142** (0.0681)	0.678 (0.503)	-0.0949 (0.586)	-0.0578 (1.650)
ROA	-0.00603 (0.0126)	-0.0182 (0.0130)	-0.00246 (0.0139)	0.0162 (0.0173)	-0.00629 (0.0248)	0.00910 (0.0254)
Constant	61.12*** (3.701)	98.71*** (1.501)	88.76*** (2.759)	83.58*** (4.870)	98.16*** (4.347)	45.65*** (14.81)
Observations	609	609	561	82	82	74
R-squared	0.742	-	-	0.816	-	-
Number of id	74	74	74	10	10	10
Hausman Test	chi2(9)=152.88 Prob > chi2 = 0.0000	-	-	chi2(9) = 3.03 Prob > chi2 = 0.9631	-	-
Sargan Test	-	-	chi2(43) = 352.5644 Prob > chi2 = 0.0000	-	-	chi2(34) = 29.09797 Prob > chi2 = 0.7067

Notes: Variables are operationally defined in Table I. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Source: Authors own work

Table IX:
Panel Quantile Regression Results for Manufacturing Industries

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	0.10	0.20	0.30	0.40	0.5	0.60	0.70	0.80	0.90	0.95
NGQI	9.0151*** (1.4223)	9.7204*** (1.7147)	10.5001*** (1.6847)	10.4328*** (1.4752)	8.6000*** (1.6703)	13.3734*** (1.4336)	12.7539*** (1.3986)	9.7512*** (1.4066)	7.7391*** (2.3855)	9.3385*** (3.0572)
IDHHI	0.4461* (0.2479)	0.3770 (0.3536)	0.1537 (0.4029)	0.0229 (0.3413)	-0.0899 (0.2780)	-0.0251 (0.1930)	-0.0852 (0.2630)	-0.0889 (0.1548)	0.4083 (0.7051)	1.4037** (0.6635)
CL	-0.4007*** (0.0513)	-0.4609*** (0.0479)	-0.3780*** (0.0454)	-0.3708*** (0.0381)	-0.3334*** (0.0422)	-0.2060*** (0.0406)	-0.1849*** (0.0279)	-0.2090*** (0.0155)	-0.2173*** (0.0628)	-0.1873*** (0.0589)
BOS	-0.1997*** (0.0556)	-0.0990 (0.0695)	0.0036 (0.0681)	0.0564 (0.0538)	0.1277** (0.0497)	0.0849* (0.0465)	0.1404*** (0.0442)	0.1531*** (0.0298)	0.2060*** (0.0785)	0.1133 (0.0888)
BOI	0.5220 (4.0969)	0.3123 (2.3769)	0.1084 (2.4963)	0.0187 (1.7088)	-0.0453 (0.6329)	0.2623 (0.6011)	0.0649 (0.3533)	0.7218 (1.3986)	3.2868 (2.1558)	2.8763 (5.0715)
BGD	15.5215*** (1.3942)	14.4857*** (1.8858)	13.8988*** (1.7996)	15.5127*** (1.5953)	16.1256*** (1.1921)	12.9442*** (1.2101)	13.5188*** (1.1896)	13.9382*** (0.7728)	14.8921*** (2.8508)	14.5204*** (3.0559)
SS	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	0.0000 (0.0000)	-0.0000 (0.0000)	0.0001 (0.0000)
SAGE	0.0152*** (0.0050)	0.0069 (0.0060)	0.0021 (0.0060)	0.0006 (0.0052)	0.0008 (0.0060)	0.0031 (0.0058)	0.0108** (0.0051)	0.0103*** (0.0027)	0.0084 (0.0083)	-0.0095 (0.0079)
ROA	-0.0077 (0.0183)	-0.0111 (0.0160)	-0.0066 (0.0075)	-0.0004 (0.0083)	0.0015 (0.0121)	0.0009 (0.0103)	0.0050 (0.0032)	0.0124 (0.0088)	0.0293 (0.0277)	-0.0064 (0.0230)
LEV	-0.4643*** (0.0649)	-0.2933** (0.1374)	-0.3633*** (0.1274)	-0.2553 (0.2409)	-0.0246 (0.1537)	-0.0685 (0.0660)	-0.0489 (0.0971)	-0.0043 (0.0905)	0.0108 (0.2103)	-0.0684 (0.1335)
Constant	102.8835*** (3.2642)	105.8500*** (2.2658)	103.8732*** (2.2750)	103.6330*** (1.8442)	102.1536*** (1.6270)	99.2125*** (1.5213)	98.2133*** (1.2909)	98.7287*** (1.2469)	97.2708*** (2.7807)	97.9834*** (2.4009)
Observations	609	609	609	609	609	609	609	609	609	609

Notes: Variables are operationally defined in Table I. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Source: Authors own work

Table X:
Panel Quantile Regression Results for Service Industries

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	0.10	0.20	0.30	0.40	0.5	0.60	0.70	0.80	0.90	0.95
NGQI	13.7631*** (2.8235)	11.3337*** (3.1041)	12.4988*** (3.2143)	15.3159*** (3.6547)	16.3696*** (4.2496)	17.4248*** (4.4769)	16.1220*** (2.9514)	14.8647*** (3.8757)	21.4699*** (4.2405)	18.8834*** (2.3510)
IDHHI	1.4275 (0.9686)	0.9655 (0.9758)	3.6047*** (0.9796)	2.9213*** (0.9388)	2.8789** (1.1725)	2.9819*** (0.8253)	3.9031*** (1.2117)	3.4610*** (1.0765)	4.5237*** (0.7624)	4.1096*** (1.3484)
CL	-0.6801*** (0.0628)	-0.6266*** (0.1109)	-0.6021*** (0.1140)	-0.4606*** (0.1071)	-0.3397** (0.1374)	-0.2681** (0.1163)	-0.2801*** (0.1022)	-0.2028** (0.0926)	-0.2285** (0.1059)	-0.2596*** (0.0543)
BOS	0.2466 (0.1805)	0.1346 (0.1719)	0.2489 (0.1747)	0.2588** (0.1264)	0.2849 (0.1896)	0.2455 (0.1738)	0.2563 (0.1602)	0.1881 (0.1600)	0.0763 (0.1930)	-0.0435 (0.1084)
BOI	0.0703 (5.5246)	-0.2383 (5.0562)	5.9713 (3.8861)	5.8075* (3.4021)	7.3529* (4.2112)	6.1692* (3.6307)	4.9680 (3.4927)	2.6500 (4.4643)	3.6426 (4.9147)	3.1259 (2.7346)
BGD	6.5517 (5.3590)	9.7301** (4.8789)	8.5399** (3.3491)	7.7221 (4.6436)	10.4032* (5.5980)	12.0983** (5.3680)	10.5397*** (3.7599)	10.6169* (5.6235)	5.8685 (5.8775)	4.6040* (2.6338)
SS	0.0001*** (0.0000)	0.0001*** (0.0000)	0.0001* (0.0000)	0.0001** (0.0000)	0.0001** (0.0000)	0.0001* (0.0001)	0.0000 (0.0000)	0.0001* (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)
SAGE	-0.0180 (0.0359)	0.0280 (0.0519)	0.0556 (0.0425)	0.0686** (0.0325)	0.0796** (0.0394)	0.0658** (0.0326)	0.0640 (0.0407)	0.0555 (0.0579)	0.1380*** (0.0514)	0.1486*** (0.0109)
ROA	0.0295 (0.0388)	0.0028 (0.0343)	-0.0171 (0.0373)	-0.0233 (0.0361)	-0.0244 (0.0935)	-0.0204 (0.1074)	-0.0106 (0.0966)	-0.0104 (0.0718)	0.0031 (0.0418)	0.0065 (0.0428)
LEV	1.6625* (0.9157)	1.3136** (0.5321)	0.1321 (1.1064)	-0.2665 (0.7511)	-0.5835 (0.7324)	0.0773 (0.6208)	-0.7429 (0.9789)	-0.6494 (0.7278)	-1.1532 (0.6959)	-1.4748 (2.8572)
Constant	110.8885*** (5.4894)	109.9167*** (5.5577)	102.9540*** (6.7062)	99.3844*** (4.5594)	94.1892*** (5.7992)	92.9276*** (5.0347)	93.9645*** (4.9623)	93.9561*** (5.1353)	94.5869*** (6.5695)	97.3790*** (3.0968)
Observations	82	82	82	82	82	82	82	82	82	82

Notes: Variables are operationally defined in Table I. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Source: Authors own work

Table XI:
Regression Results for Disaggregate Sample (Based on country of origin)

VARIABLES	(1) FE Developed	(2) RE Developed	(3) GMM Developed	(4) FE Developing	(5) RE Developing	(6) GMM Developing
L1.CGCI	-	-	0.0513*** (0.0109)	-	-	0.416*** (0.115)
NGQI	7.825*** (1.382)	8.086*** (1.277)	8.665*** (1.275)	7.500** (3.384)	15.28*** (3.241)	5.003 (3.792)
IDHHI	3.837*** (1.210)	-1.071 (0.862)	0.643 (1.089)	1.618 (2.493)	0.547 (0.728)	-1.119 (1.480)
CL	-0.180*** (0.0248)	-0.262*** (0.0266)	-0.140*** (0.0209)	-0.245*** (0.0685)	-0.413*** (0.0883)	-0.153* (0.0810)
BOS	0.0851 (0.0557)	0.0872 (0.0560)	0.0216 (0.0638)	0.149 (0.166)	0.323** (0.150)	0.522** (0.228)
BOI	0.215 (1.169)	1.214 (1.222)	0.555 (1.312)	-0.375 (0.269)	0.137 (0.365)	-0.232 (0.368)
BGD	9.501*** (1.320)	17.13*** (1.253)	18.16*** (1.364)	6.567** (2.776)	10.12*** (3.119)	12.21*** (4.703)
SS	7.63e-05** (3.67e-05)	6.71e-05** (2.93e-05)	0.000105** (4.55e-05)	-0.000411 (0.000714)	0.000557 (0.000342)	0.000782 (0.000532)
SAGE	0.587*** (0.0473)	0.0260** (0.0124)	-0.0189 (0.0244)	0.704*** (0.101)	0.0519* (0.0290)	-0.0327 (0.0749)
LEV	-0.125 (0.0919)	-0.214** (0.0970)	0.00518 (0.105)	-0.0869 (0.0867)	-0.0198 (0.115)	-0.0805 (0.111)
ROA	-0.0145 (0.0119)	-0.0219* (0.0127)	-0.0139 (0.0123)	0.0585*** (0.0206)	0.0293 (0.0254)	0.0388 (0.0279)
Constant	61.84*** (3.804)	99.76*** (1.860)	90.65*** (2.750)	82.28*** (4.339)	102.4*** (3.936)	55.47*** (12.48)
Observations	619	619	569	72	72	66
R-squared	0.741	-	-	0.844	-	-
Number of id	75	75	75	9	9	9
Hausman Test	chi2(9) = 154.03 Prob > chi2 = 0.0000	-	-	chi2() = 47.71 Prob > chi2 = 0.0000	-	-
Sargan Test	-	-	chi2(43) = 339.2136 Prob > chi2 = 0.0000	-	-	chi2(32) = 37.09151 Prob > chi2 = 0.2458

Notes: Variables are operationally defined in Table I. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Source: Authors own work.