Reinventing the wheel? Factors influencing relationship: links between sustainability and financial performance. European evidence

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Abstract

Purpose – This study aims to examine the factors that influence the relationship between sustainability and financial performance (FP) of the European listed companies.

Design/methodology/approach – This study analyzed data from 795 companies in 21 European countries by applying linear mixed-effects multilevel regressions, a two steps system generalized method of moments and quantile regression models to uncover the links between sustainability and FP.

Findings – The past four decades have witnessed abundant research to determine the relationship between corporate sustainability and FP. Thus, conducting further research in 2023 could be seen as "reinventing the wheel." Yet, earlier research considered firms as isolated entities with sustainability and FP being dependent only

on that firm's actions. By contrast, with the help of network governance theory, this study shows that a firm's sustainability and FP depend on an interplay among interorganizational actors, such as institutional qualities, macroeconomic factors and an embrace of sustainability. Here, large firms play an essential role. Three significant findings are drawn. First, sustainability performance has a significant impact on FP in the European context. Second, the institutional quality (IQ) of the rule of law and control of corruption plays a crucial role in enhancing sustainability and FP, and finally the interaction of IQ and economic growth helps to increase companies' market value (Tobin's Q). The consistent and empirically robust findings offer key lessons to policymakers and practitioners on the interplay among multiple actors in corporate sustainability and FP.

Practical implications – A synergetic multifaced relationship between governmental institutions and corporations is inevitable for ensuring sustainable development. The degree of intimacy in the relationship, of course, will be determined by the macroeconomic environment.

Originality/value – In this research, this study theoretically and empirically identified that corporate sustainability and FP are not solely dependent on corporate operation. Rather, it is transformed, modified and shaped through an interaction of multiple actors' trajectories in the macro business environment.

Keywords Sustainability, Financial performance, Network governance theory (NGT), Institutional quality, Macroeconomic factors, ESG, Corporate responsibility

Paper type Research paper

1. Introduction

Unsustainable and linear ways of conducting businesses have brought the world to the edge of a precipice (Farza *et al.*, 2021; Thaher and Jaaron, 2022), where greenhouse gas emissions receive severe consequences (Althor *et al.*, 2016). Europe has, during the past two decades, endured extreme heat, exceeding levels beyond the 16th century, with major incidents resulting in severe wildfires and melting arctic ice (Tolliver *et al.*, 2020; Bamber *et al.*, 2019). Awareness of mutual understanding and action among critical actors is needed to prevent massive destruction. Such network relationships are shown to cause synergetic effects and impact on the improvement of sustainability practices. To reduce the negative impact from businesses, a profound trend in corporate sustainability is emerging – a shift away from voluntary participation in sustainability activities to mandatory encumbrance due to corporate responsibility, social expectation and regulatory requirements takes place (Rahi *et al.*, 2022a, 2022c; Wang *et al.*, 2016; EU, 2014; European Commission, 2018; Johansson *et al.*, 2021). Ambitious sustainability goals are increasingly on the agenda of governments and policymakers (Kaufmann and Lafarre, 2021). There is also pressure on actors to become more long-term oriented, aimed at ensuring not only corporate financial performance (FP) but also sustainability performance (Molina-Azorín *et al.*, 2009). Investors are one such critical group of actors with the power to contribute to changes toward sustainable investments. They stand in front of a game-changing position where expectancy on FP and traditional financial reporting remain while they also face pressure and new possibilities to identify new market opportunities with companies that put the management of sustainability factors at the center of their operations (Nizam *et al.*, 2019).

Based on societal actors' pressure, companies are now forced to improve their environment (reduction of pollution, biodiversity loss, greenhouse gas emissions, waste and increase of renewable energy use and energy efficiency) social (quality of life, well-being, gender diversity, equality, employee relations and human capital management for people) and governance (corporate internal control, routines, board diversity, independence, information transparency and risk management) practices, i.e. environmental, social, and governance (ESG)-practice. Like financial key ratios, ESG scores are relatively comparable between corporations, even among different industries or countries. Therefore, it has become a crucial tool for stakeholders to comprehend the sustainability engagement of a corporation (Asante-Appiah, 2020; Cancela *et al.*, 2020). In this, government and public institutions are expected to provide the structure that

simultaneously guarantees efficient use of resources and stable consequences of corporate sustainable policies. The macroeconomic condition of a country in earlier studies found to determine the intensity of governmental engagement toward sustainability (Tolliver *et al.*, 2020; Rahi *et al.*, 2022b; Rahi *et al.*, 2023). In countries where the macroeconomic conditions are weak, governmental institutions are less engaged in sustainability policies than in countries with strong conditions (Rahi *et al.*, 2022b). Companies are also typically held less accountable by stakeholders for actions in such situations due to fear of running out of business. Proponents of economic buoyancy/economic strength argue that a country or a company only focuses on sustainability while achieving the amount of economic target that safeguards survival (Costantini and Monni, 2007; Cormier and Magnan, 2003). This study contributes to the role of national institutions and macroeconomic influences on the links between corporate sustainability and FP, a neglected field of study, especially in the European context. More specifically, we contribute by examining the effect of institutional quality (IQ) and macroeconomic factors on sustainability practices and, accordingly, linkages to FP. Through this, we also identify such linkages among actors. We further examine this relationship both theoretically and empirically. Earlier research primarily considers sustainability practices and FP as dependent on a firm's own actions and assumes that firms operate in isolation. We argue for the identified relationship based on the notion of network governance theory (NGT) capturing the interplay of relationships between interorganizational actors. Further, earlier research on the topic has typically applied institutional theory (IT) emphasizing institutional interests and power exercise relationships (Han *et al.*, 2022; Karmani and Boussaada, 2021). We argue that power distance and hierarchy hamper the relationship among actors and that corporate sustainability and FP are not shaped by linear institutional pressure but by the trajectories of multiple actors. Study by Kaufmann and Lafarre (2021) even have sought to articulate this relationship, though without theoretical underpinning.

Further, we examine whether the IQ and macroeconomic factors moderate the link between sustainability and FP in Europe. Notably, this study contributes new evidence by encompassing a broader geographic location than previous studies also providing a more substantial sample size than previous research in the field. To examine the relationship, we employed linear mixed-effects multilevel regressions (LMMR), a two-step system generalized method of moments (GMM), and quantile regression models, these since the relationship might not be linear, and we addressed critiques of earlier researchers (Secinaro *et al.*, 2020; Franco *et al.*, 2020). Among the models, we prioritize the outcome of GMM. Because dynamic GMM accounts for multilevel factors, endogeneity and unobserved confounders whereas LMMR only account for linear relationship (Ke *et al.*, 2020; Kim and Frees, 2007; Krug and Eberl, 2018). We test three hypotheses. First, we find that corporate sustainability performance (CSP) is positively associated with corporate FP. Second, we find that the contribution from large firms toward sustainability is higher than that from their smaller counterparts. Finally, focusing on IQ, the rule of law (ROL) and control of corruption (CC) have a significant impact on ensuring corporate sustainability and FP in the European context. Though, we did not find strong evidence regarding political (in)stability which may be at issue in some countries, especially those in Central and Eastern European (CEE). Further focusing on the interactional effect on IQ and economic growth, we found that such interaction helps to increase companies' market value (Tobin's Q). We tested three hypotheses to determine the relationship in three phases. First, we investigate whether or not sustainability has an impact on a company's FP (at the micro level). This is due to the fact that we need to verify the relationship prior to examining other factors that may influence it. The second and third hypotheses investigate macroeconomic factors that might affect the relationship. Our findings add value to existing sustainability accounting and finance, public policy as well as corporate governance literature by empirically examining

the interorganizational network relationship using company and national-level data. The study offers useful insights into how the network governance relationship affects the links between company sustainability and FP. The interrelation among these concepts is complex and multidimensional because the relationship can occur simultaneously multilaterally at the same time.

The rest of the paper is structured as follows. Section 2 provides theory, literature review and hypotheses development. Research design, sample and variables are described in Section 3, followed by the results presented and discussed in Section 4. Finally, Section 5 concludes the discussion by focusing on possible suggestions and policy implications.

2. Theories, literature review and hypotheses development

2.1 Theoretical framework

The article builds on the framework of NGT, representing an incremental to previously applied eclectic governance model (Ozdemir and Kilincarslan, 2021), of which is seen as a complement to prior research that is predominantly based on IT. So far, in accounting and business research, IT has widely been applied to demonstrate how an organization's behavior is shaped by institutional pressure (Han *et al.*, 2022; Karmani and Boussaada, 2021; Modell *et al.*, 2017; Vatn, 2020; Yang and Farley, 2016). IT theorists argue that a country's institutional environment influences the effectiveness and legitimacy of organizational strategies and has a significant effect on a firm's decision-making process (North, 2005; Delmas and Toffel, 2008; DiMaggio and Powell, 1983). In this conceptual conformity, IT becomes a hierarchal, non-democratic and power-centralized theory (Lounsbury, 2008; Modell *et al.*, 2017). In accordance with institutional isomorphism, companies change their behaviors to be seen as sustainable to survive in a competitive environment. If companies are not able to change, then either they risk going out of the market or resorting to greenwashing by adopting information asymmetry to maintain legitimacy (He *et al.*, 2020; Srivastava *et al.*, 2021; Hummel and Schlick, 2016). IT emphasizes single-way communication to shape a company's isomorphic behavior with the help of exercising interests and power by the institutional agents (DiMaggio, 1988; Oliver, 1991). A matter in need of consideration is that fact that institutional pressure does not consider the contextual situation, as power distance and hierarchy always hamper the relationship among interorganizational actors. A further critique is the ignorance of the institutional agent where they neglect to consider that the agency itself is embedded within the institutional setting (Leca and Naccache, 2006; Lounsbury, 2008). The recent Sri Lankan crisis can be an example of the failure of institutional pressure. In spring 2021, Sri Lanka's Government completely banned the usage of chemical fertilizer and institutionally forced farmers to produce organic food for 22 million people without considering the response from other actors which resulted in food price inflation and a deep economic crisis (Jayasinghe, 2021). This example points to how critical an understanding of the concept of the interplay of the relationship among different actors in the macro environment is key for the macro as well as micro actors within the relationship's spectrum. IT ignores this interplay of relationship there by a collaborative interaction among various actors. However, to achieve durable sustainability thereby FP there is need for collaborative interaction, a neglecting area in the IT. Focusing on this shortcoming, there is a need to conceptualize the relationship with a new theoretical lens. The present study is designed on NGT. NGT is a conceptual framework that explores collaborative relationships and interactions among various actors, including government agencies, businesses, nonprofits and communities, within the networks – an interorganizational network (Kapucu and Hu, 2020). Among many scholars such as Rhodes (1997), Klijn and Koppenjan (2000), Sørensen and Torfing (2005) laid the

groundwork for the concept of collaborative networks, which later evolved into NGT. However, the root of collaborative governance network can be traced in intergovernmental cooperation (Emerson *et al.*, 2012) and cooperative federalism (Kettl, 2006; Elazar, 1964; Kapucu and Hu, 2020). The NGT conceptualizes these networks form, function and influence policy and decision-making processes in a democratic way. The theory emphasizes the importance of cooperation, information exchange and shared goals in addressing complex societal challenges. It recognizes that governance networks are characterized by diverse stakeholders who may have varying interests and resources. NGT provides insights into the dynamics of multi-actor governance arrangements and their impact on mutual outcomes (Assens and Lemeur, 2016; Kapucu and Hu, 2020).

In this article, we argue that NGT is appropriate for capturing interplay of relationships among different interorganizational actors. Indeed, NGT is not an opponent of IT but rather a complement to IT, where actors, through common interplay, determine the mutual relationship. Translating the notion of NGT to the operative term that the link between sustainability and FP does not emerge because of linear institutional pressure, rather the link is transformed, modified and shaped through an interaction of the trajectories of multiple actors in the governance network. Therefore, it can be argued that corporate sustainability and FP are microenvironmental actors whose output is dependent on other actors in the macro environment, such as institutional qualities and economic factors and their reciprocal relationships within a relationship spectrum. Through the notion of network governance, this article argues that corporate sustainability and FP are not solely dependent on corporate operation. There is a need for mutual interaction in the interorganizational network to create an effective macro business framework toward sustainability. Prior research in the field of business and management has extensively applied this theory as a framework for hypothesis testing. Notable examples include studies conducted by Hamid (2011), Stolze *et al.* (2021) and Wadood *et al.* (2022).

2.2 Literature review and hypothesis development

2.2.1 Relationship between corporate sustainability performance and financial performance. For the past four decades, researchers from accounting and other business disciplines have investigated the relationship between sustainability and FP (Grewatsch and Kleindienst, 2017; Perrini *et al.*, 2011). Investigating the same issue in 2023 may appear to be "reinventing the wheel." However, previous literature typically considered sustainability effects on FP in an isolated manner and in a linear relationship, including ignoring the reverse causality issue (Secinaro *et al.*, 2020; Franco *et al.*, 2020). They either proved or rejected their hypotheses by employing inconsistent measurements (Lu and Taylor, 2016). Literature reviews and meta-analyses on this topic also admitted nonconclusive results due to a lack of research design and measurement options (Grewatsch and Kleindienst, 2017; Lu and Taylor, 2016; Rahi *et al.*, 2023). This nonconclusive outcome occurred mainly for two reasons. First, most of the studies failed to address factors that might affect the relationship. Second, most of the studies applied imperfect econometrics models, considering data and variables, and thereby were left unable to capture factors affecting relationship (Nguyen *et al.*, 2021; Secinaro *et al.*, 2020). The application of simple ordinary least squares regression or bivariate analysis may lead to a wrong conclusion, as the relationship might not be linear (Achen, 2005).

In addition, literature review and meta-analysis conducted by Dixon-Fowler *et al.* (2013), Grewatsch and Kleindienst (2017), Lu and Taylor (2016), Ye *et al.* (2021) identified that previous literature was stuck inside a circle and applied mostly agency, stakeholders, legitimacy, institutional, resource-based view and equity theories. Therefore, we consider this paper as an analogy to an "upgrade of software" challenging the traditional way of

determining the relationship by applying NGT. Grewatsch and Kleindienst (2017) did a recent critical review on the topic, and they found that most of the 32 articles they reviewed used accounting and market-based measures as the dependent variable and the ESG or KLD index as the independent variable. For the control variables, selected studies frequently selected size, age, debt ratio and other company-specific variables. In summary, previous studies considered the firm as an isolated entity, where sustainability practice and FP are solely dependent on its own actions. In reality, the company is an actor in the macro environment and other actors have roles in determining the relationship regarding sustainability and FP (Figure 1). In addition, there might be sub-actors under each main (interorganizational) actor's node. For example, Figure 2 conceptualizes the role of sub-actors. Most of the previous studies only focused on these sub-actors' role (Figure 2) in determining relationships while turning a blind eye on other actors. For example, previous studies mostly investigated the impact of CSR activities on stock performance (Guo *et al.*, 2022; Kim *et al.*, 2014). A recent article by AlAjmi *et al.* (2023) investigated moderating role of IQ on the relationship between corporate social responsibility disclosure (CSRD) and banks' operational, financial and market performance, which has a completely different focus than this article. Another article by Rahi *et al.* (2022b) articulated the nexus between IQ and corporate sustainable performance and thereby ignored FP by applying IT. However, to articulate the relationship, we use a completely distinct theoretical and empirical approach in this article.

As said, previous research concerning the links between sustainability and FP is non-conclusive. Though a second-order meta-analysis conducted by Friede *et al.* (2015) and Lu and Taylor (2016) found that most studies revealed positive relationships between ESG and FP. Moreover, after the European Union's (EU's) non-financial reporting directive (Directive

Macro environment

Figure 1.
Interplay and reciprocal relationship among interorganizational actors
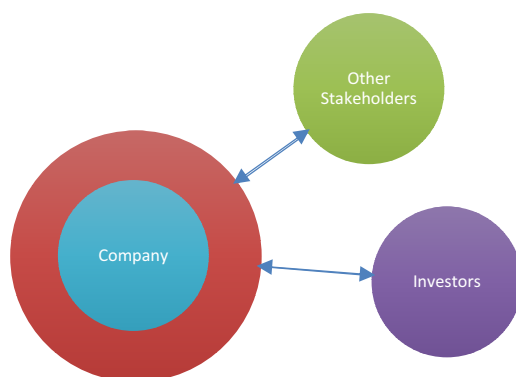
Source: Authors' own creation

Figure 2.
Sub-actors in the
network comprise
relationships with the
company

Source: Authors' own creation

2014/95/EU) and the Paris Agreement of 2015, EU countries are facilitating an effective sustainability-focused macro business environment, where EU firms are striving on ensuring sustainability and FP with the goal of balancing interorganizational relationship (both among the main actors and the sub-actors) in the network. Therefore, the following hypothesis is anticipated:

H1. There is a positive association between sustainability performance and FP in the European context.

2.2.2 Relationship between institutional quality and firm's sustainability and financial performance. IQ represents the norms and institutions a country employs for its governance. This involves processes such as government selection, monitoring and replacement, the government's capacity to create and implement effective policies and the mutual respect between citizens and the state for the institutions that oversee their economic and social interest (The World Bank, 2020). The World Bank has developed a World Governance Indicator (WGI) score between 0 and 100 (percentile rank) based on "several hundred variables obtained from 31 sources, capturing institutional quality as reported by survey respondents, non-governmental organizations, commercial business information providers and public sector organizations worldwide" (Kaufmann *et al.*, 2011, p. 221). Six WGI indicators assess the quality of institutions and how the institutions are represented within their country, but political stability (PS), the rule of law (ROL) and control of corruption (CC) are key in determining the quality of firm's external environment, measuring the risk of doing business in a specific country. As previously argued, IQ is a component of the external business (actor) network, and its effect determines relationships in the macro (interorganizational) environment, which has an impact on a corporation's financial and sustainability performance.

According to public management, business environment and political economy literature, PS and the lack of violence have a significant impact on a business's financial and sustainability performance (Glaeser *et al.*, 2004; Herrera *et al.*, 2020; Kaufmann and Lafarre, 2021). When a company runs operation in an unstable political environment, it faces hurdles to corporate economic progress, affecting its ability to contribute financially as well as sustainably. Second, the ROL measures how much people trust and follow society's laws, including contract enforcement, property rights, policing, the courts and the possibility of crime and violence. (Gani, 2021; The World Bank, 2020). Highly secure environments with high ROL

allow businesses to invest and expand in any country, increasing financial and sustainability performance. For example, the protection of property rights and trust in the police and justice system assist corporations in assuring return on asset (ROA) and return on investment (ROI), driving companies to invest in social and environmental sustainability (Rahi *et al.*, 2022b). Less open competition and poor governance are two factors that contribute to a weaker business contribution by companies in countries with poor ROL and governance (Klomp and de Haan, 2015). Third, CC denotes a decrease in the exploitation of public resources for private benefit (The World Bank, 2020). Corruption can have a negative impact on economic growth, investments, innovation, resource allocation and sustainable development. (Kaufmann and Lafarre, 2021; The World Bank, 2020). Corruption makes it easier for businesses to ignore their social and environmental responsibilities in order to maximize profits (Biswas *et al.*, 2012; Sawaan, 2012; Lombardi *et al.*, 2019). A previous study identified that corruption, oppressive governments, poverty, injustice, human rights violations and pollution are interlinked (Frynas, 2009; Rahi *et al.*, 2022b). Corruption promotes bureaucratic inefficiencies and obstructs business advancement, resulting in reduced FP (Hoang *et al.*, 2022; Viglioni *et al.*, 2022). Study by Ioannou and Serafeim, 2012 identified that corruption hinders corporate social performance. Corruption has a direct positive impact on the extent of environmental degradation. This is because corrupt political and institutional organizations often show tolerance toward pollution, effectively condoning it as acceptable corporate behavior (Dorfleitner *et al.*, 2022).

Europe as a continent contains a range of political (in)stability, along with various levels of adherence to the ROL and CC. In general, northern and western Europe's PS, ROL and CC are much more satisfactory than eastern Europe (Blagojević and Damijan, 2013; Brammer *et al.*, 2006; Gherghina *et al.*, 2019). In our sample, most representative countries belong to northern and western Europe. For this reason, we posit the next hypothesis which we anticipated to have a positive relationship.

H2. IQ (PS, ROL and CC) is positively associated with firm's sustainability and FP.

2.2.3 The interactional effect of institutional quality and economic growth on sustainability and financial performance. IQ is a multifaced and complex concept. But, in general, it refers to legal, human rights, governance and public service framework for boosting a country's economic activities (Butkiewicz and Yanikkaya, 2006). A high-quality of IQ can create a favorable macroeconomic environment that fosters economic expansion, innovation and sustainable development together (Butkiewicz and Yanikkaya, 2006; Hayat, 2019). On the other hand, the bad quality of IQ framework is liable for economic stagnation (Butkiewicz and Yanikkaya, 2006). IQ and economic growth are macro (interorganizational) network components, and a high indicator of IQ matrices ensures a good business environment which raises gross domestic product (GDP) (Williamson, 1989; North, 1990) through the injection of both international and domestic investment (Hayat, 2019). According to endogenous growth and good governance theories, IQ, economic growth and firm performance are all intertwined as institutional heterogeneity affects economic performance, which (in)directly affects corporate financial and sustainability performance. In addition, effective and impartial institutions can boost market cooperation among other actors (Olson, 1996; Adams *et al.*, 2019), thereby creating a responsibility toward environmental and social sustainability (Salman *et al.*, 2019; Lau *et al.*, 2014) argued that a well-developed institutional setting could be a vehicle for the reduction of CO_2 emissions while ensuring economic growth (Khan and Rana, 2021). Following the above discussion, we argue that the interaction of IQ and economic growth creates a favorable business environment in the network governance relationship, ensuring a firm's sustainability and FP. Therefore, the following hypothesis is asserted.

H3. Interaction between IQ and economic growth help to ensure sustainability and FP.

By using Figure 3, we can now conceptualize all hypotheses.
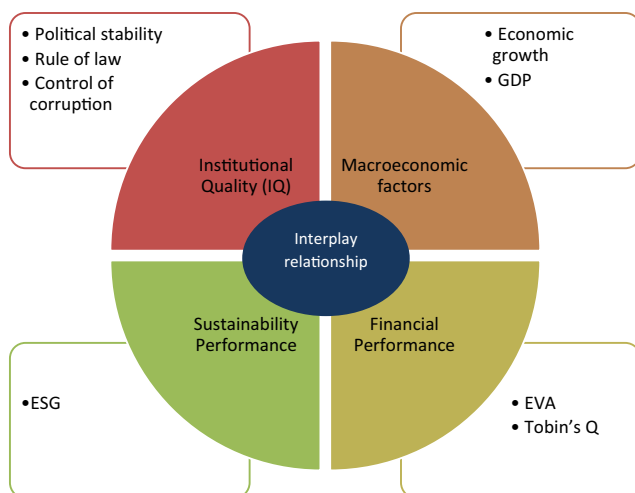
Source: Authors' own creation

Figure 3.
Conceptualization of hypotheses

3. Data and methodology

3.1 Sample selection and data extraction

For the data extraction process, we initially chose 30 European countries through a geographical approach. Later during the data cleaning process, we removed 9 countries because representative companies from the selected counties had missing data higher than the tolerated level. Table 1 summarizes the sample of data set for the continent of Europe,

Countries		Industries
Austria (11)	Luxembourg (7)	Basic Materials (77)
Belgium (16)	The Netherlands (32)	Consumer Cyclicals (137)
Czech Republic (3)	Norway (16)	Consumer Non-Cyclicals (63)
Denmark (20)	Poland (23)	Energy (49)
Finland (22)	Portugal (5)	Financials (120)
France (76)	Russia (28)	Health care (51)
Germany (69)	Spain (31)	Industrials (135)
Greece (11)	Sweden (48)	Real Estate (39)
Ireland (27)	Switzerland (63)	Technology (84)
Italy (33)	UK (250)	Utilities (40)
Hungary (4)	*Total 795 companies*	

Source: Authors' own creation

consisting of 21 countries. The primary justification for selecting a geographical approach is that countries in Europe are closely involved in trade, business and investment. On many occasions, non-EU but continental European countries follow EU regulations for trade and investment (Dupont and Sciarini, 2001; Samson, 2008; Emerson and Woolcock, 2002). Norway, for instance, is included in the European Economic Area (EEA) as a partner state of the EU (Emerson and Woolcock, 2002). The free trade agreement grants Switzerland a privileged status within the EU (Dupont and Sciarini, 2001). The Common European Economic Space confirms the EU's position of Russia as a strategic partner [1] (Samson, 2008). This phenomenon was described by Goldthau and Sitter (2015), as paying the price to get access to the EU market when neighboring states voluntarily choose to adopt EU rules and regulations as their own. There are also additional empirical studies pointing on the relevance of Europe as a study region. The earlier research by García Martín and Herrero (2020) and Sassen *et al.* (2016) included the UK, Turkey, Bermuda, Gibraltar, Isle of Man, Virgin Islands, Switzerland and Norway within the context of Europe, adopted a geographical approach based on homogeneous regulation. In light of these theoretical and empirical arguments as well as the extensive economic interdependence across European nations, we find strong support for our decision to focus on Europe as our chosen study region. The final data set includes 21 nations, 10 industries and 795 companies, totaling 4,770 firm-year observations. Details are available in Table 1. The time span from 2015 to 2020 was chosen since most of the variable information was available during that period, and it was the most recent period when this analysis was carried out. Other studies on the topic of sustainability have used similar time spans (Rahi *et al.*, 2022a; Velte, 2017). The purpose of choosing the above timespan is twofold. First, we would like to check how the institutional EU directive 2014/95/EU came into effect for CSP. The EU is recognized as being the first consortium focusing on CSP through directives. Another reason for selecting the time span was due to capture sustainability and FP in accordance with the Paris agreement after 2015. Our sample's missing values were replaced with linear interpolation to create a balanced panel data set (Hair *et al.*, 1998).

Firm-specific data were collected from the Eikon database. Here ESG score is used as a proxy for CSP. Economic value added (EVA) and Tobin's Q are used as a proxy for corporate FP. In addition, Beta, firm leverage and firm size are also taken as firm-specific control variables. Previous empirical evidence supports this proposition (Khaled *et al.*, 2021; Rahi *et al.*, 2022a; Velte, 2017). Here, EVA is a measure of profitability that indicates FP, whereas Tobin's Q is a market-based indicator. We took both measures to identify the impact on the relationship from the internal stakeholder as well as external (investor) perspectives. Beta represents market risk where the company operates. Firm leverage and firm size are also taken as control variables since earlier research has indicated that there is a linear relationship between firm size and leverage (Bhat *et al.*, 2020; Vithessonthi and Tongurai, 2015).

It is also believed that a strong financial position allows for greater focus on stakeholders' responsibilities, which eventually results in an improvement in long-term sustainable performance (Rahi *et al.*, 2022b). The World Bank's three major governance indicators, the WGI, were obtained from the World Bank repository and used as a proxy for IQ considering previous literature (Hayat, 2019; Kaufmann and Lafarre, 2021). IQ scores assess a country's governance performance in the matrices of PS, the ROL and corruption control, including a total of six matrices. Economic growth, GDP per capita and inflation are taken as macroeconomics-related control variables, and the information was obtained from the Global Economy database. In summary, data were collected in two levels, specifically, the firm level and the country level, because as discussed in an earlier section, we theoretically argued that sustainability and FP have an interplay relationship among interorganizational actors.

3.2 Variables and models specification

To conduct the analysis, we selected several variables that included national and firm-level data resulting in balanced panel data. In the theoretical discussion, we argued that there are several factors that moderate the relationship between sustainability and FP. Therefore, we used 20 econometric models to capture possible factors that might affect the relationship. To ensure that variables were homogeneous throughout the models, we included several firm and country-level control variables. The details of the variables are shown in Table 2. To test the hypotheses, we employed LMMR, dynamic two-step system GMM and quantile regression models. The LMMR and GMM help to handle two levels of data issues (Goldstein,1987; Kim and Frees, 2007). In addition, among the econometric models, the two-step system GMM is preferable because our IQ data are moderately correlated with each other as well as with the macroeconomic variables. GMM is more effective when there is large number of firms (795) and a small temporal dimension (six years). Moreover, two-step system GMM account for multilevel factors, endogeneity issues and controls for unobserved confounders and for reverse causality in the relationship (Ke *et al.*, 2020; Kim and Frees, 2007; Krug and Eberl, 2018; Ullah *et al.*, 2018). In short, GMM is considered to be a valid estimator for dynamic panel data to capture cause-and-effect relationships between underlying phenomena that are dynamic over time, enabling dealing with time series and

Variables	Type	Description
EVA	Financial performance related variables	NOPAT – (WACC* Invested capital)
Tobin's Q		Total Market value of firm/ Total Asset value of firm
ESG score	Sustainability related variables	ESG performance score on firm's environmental. social and governance activities
Beta (systematic risk)	Firm-specific control variable	Beta factor firm's systematic risk
Firm leverage		Total debt/equity in ratio represents firm's leverage (unsystematic) risk
Firm's size		Natural logarithm of total assets
Institutional Quality (IQ)_Overall	IQ specific variable	Average value of three chosen IQ indicators
Political stability		Likelihood of political instability and/or politically motivated violence. including terrorism
Rule of Law		Extent to which agents have confidence in and abide by society's rules. especially the quality of contract enforcement. property rights. the police. the courts. and the likelihood of crime and violence
Control of corruption		Implies a reduction in the use of public resources for private gain
Economic growth	Macroeconomic specific control variable	Rate of change of real GDP
GDP per capita		Gross domestic product divided by midyear population (in Euro)
Inflation		Percent change in the Consumer Price Index
***IQ overall*Economic Growth	Interactional variable	**Moderating between IQ and Economic growth

Notes: **Moderator is the interaction of the variable's standardized values; NOPAT = Net operating profit after taxes; *WACC = Weighted average cost of capital; GDP = Gross domestic product
Source: Authors' own creation

Table 2.
Explanation of the variables

random walk (Blundell and Bond, 1998; Rahi *et al.*, 2022a). Therefore, these econometric models are considered to be appropriate to reveal the relationships considering our data. To identify and observe changes in the relationship, we further employed quantile regression to better explain the first hypothesis. To sum up, this study applied LMMR, two-step system GMM and quantile regression to test hypotheses by changing dependent and independent variables due to the necessity to prove hypotheses (followed by level 2 variables, and it is only applicable for the LMMR). Below, we only express equations in generic terms corresponding to model numbers to avoid redundancy.

The equation for the linear mixed-effects multilevel regression is as follows.

$$Y_{ij} = \beta_{oj} + \beta 1 X_{ij} + \beta 2 Z_{ij} + \varepsilon_{ij} \qquad \text{(Level1)}$$

$$= \beta_{oj} = r_{oj} + r1 W_{ij} + \varepsilon_{ij} \qquad \text{(Level2) (1,2,6,7,8)}$$

Where,

Y_{ij} = Dependent variable
β_{oj} = Intercept
X_{ij} = Level 1 independent variable
Z_{ij} = Level 1 control variable
W_{ij} = Level 2 variables
ε_{ij} = Error term
For $i = 1, \ldots, n; J = 1, \ldots T$

The following equation was applied for the dynamic two-step system GMM models:

$$\mathbf{Y}_{ij} = \alpha + \gamma \vartheta_{i,t-1} + \beta 1 \text{ Indepedent variable}_{it} + \beta 2 \text{ Control variable}_{it} + \varepsilon_{it} \qquad \text{(3-4,9-20)}$$

Where,

$\gamma \vartheta_{i,t-1}$ represents the lag value of dependent variables
Z_{it} represents the independent variables and control variables
ε_{it} is the error term.
For $i = 1, \ldots, n; t = 1, \ldots T$

The equation applied for the quantile regression is as follows

$$y_{it} = x'_{it}\beta_0 + \varepsilon_{it} \text{ with } Quant_\theta(y_{it}|x_{it}) = x'_{it}\beta_0$$

where $i = 1, \ldots, n; t = 1, \ldots T$. y_{it} indicates dependent variable x_{it} indicates the vector of regressors, β indicates the vector of parameters to be calculated and ε denotes the error term. $Quant_\theta(y_{it}|x_{it})$ denotes the θth conditional quantile of y_{it} given x_{it}. θth regression quantile, $0 < \theta < 1$, which resolves the following problem. Source: Rahi *et al.*, 2022b:

$$\min_{\beta} \frac{1}{n} \left\{ \sum\nolimits_{y_{it} > x'_{it}\beta} \theta |y_{it} - x'_{it}\beta| + \sum\nolimits_{y_{it} < x'_{it}\beta} (1 - \theta)|y_{it} - x'_{it}\beta| \right\} = \min_{\beta} \frac{1}{n} \sum\nolimits_{i=1}^{n} \rho_\theta \varepsilon_{\theta it}$$

(5)

Table 2 defines the variables in detail. Based on the hypotheses, we used ESG both as dependent and independent variables. FP-related variables and IQ-related variables are always used as dependent and independent variables, respectively.

4. Results and discussion

4.1 Summary statistics

Summary statistics of the variables are reported in Table 3 below for a six-year period during 2015–2020. From the summary statistics, a wide disparity exists among selected variables regarding minimum and maximum value. This is supported further by the mean and standard deviation. For example, there is a wide disparity between the minimum and maximum value for ESG, EVA, Tobin's Q and IQ-specific variables. The median value of ESG is 62.49, and the 50-percentile value indicates that at least 50% of the companies in the sample scored 62 and above. In comparison to earlier studies on the subject, the values are reasonable and within the range (cf. Karmani and Boussaada, 2021; Rahi *et al.*, 2022a; Velte, 2017).

In addition, the 75 percentile of EVA and Tobin's Q indicates that only 25% of higher (P75) percentile companies ensure good performance in terms of EVA and Tobin's Q. For this percentile, beta and leverage indicate that risk – both systematic and unsystematic risk – is highly associated in this percentile following the economic risk-return tradeoff mechanism, and company size implies that this might be true for the large firm. Moreover, PS has a median score of 63 out of the three IQ variables, such as PS, ROL and CC, while the median score for the other two IQ variables is over 90. It demonstrates political instability in a few European countries. This argument is further supported by scores in the 25th and 75th percentiles. Inflation and economic growth are shown as percentages, and GDP per capita is given in terms of its value in euros. Details of the calculation of variables are available in Table 2. All continuous variables are winsorized, so extreme outliers should not exist in the sample.

4.2 Correlation result

Table 4 presents the correlation result for the selected variables. The result indicates that the high correlation exists among the IQ variables (i.e. above 0.80); therefore, we never brought them in a single econometric model. However, the findings of both univariate and correlation analyses provide some preliminary signals that an interactional relationship exists among the interorganizational actors determining the relationship between sustainability and FP. Nonetheless, multivariate analyses have also been performed with others control variables to strengthen the result as well as to prove hypotheses. The correlation table shows the results of 1% and 5% levels of significance, respectively.

4.3 Regression result

4.3.1 Relationship between sustainability and financial performance. To reveal the relationship between sustainability and FP, Models 1–5 were executed (Tables 5 and 6). In these models, we found that sustainability performance is positively associated with corporate FP in the European context. Both, linear mixed-effect multilevel regression and GMM confirm our proposition. Thus, we successfully accepted *H1*. In the linear multilevel regressions, Likelihood Ratio (LR) test versus linear regression is significant, indicating the goodness of model fit. In the GMM models, Sargan test *p*-values and AR2 values are insignificant. The GMM result demonstrates that the instruments such as moment condition, instrumental variable and estimation used in the GMM are valid. As a result, our instruments satisfy the condition for exogeneity (Hansen, 1982). In the result (Model 5), we further observed that the relationship is positively significant when the systematic market risk (Beta) is negative. It is believed that businesses engage in sustainable performance when they can handle their risk elements (Landi *et al.*, 2022; Rammel and van den Bergh, 2003). Systematic risk cannot be eliminated, but it can be effectively absorbed, as it aims to

Variables	Mean	Median	SD	Minimum	Maximum	Percentiles		
						25	50	75
EVA	-9.49	1.86	100.32	-1379.88	799.63	-5.83	1.86	10.29
Tobin's Q	1.21	0.71	2.51	0.01	78.17	0.35	0.71	1.38
ESG	60.85	62.49	17.84	2.11	94.47	49.22	62.49	74.86
Beta	0.99	0.94	0.49	-0.67	4.60	0.68	0.94	1.26
Firm leverage	1.17	0.63	10.67	-251.31	582.46	0.28	0.63	1.24
Firm's size	22.81	22.67	1.77	17.83	28.54	21.57	22.67	23.89
3(three) Institutional Qualities (IQ)	80.79	82.93	14.64	18.06	97.29	78.48	82.93	89.65
Political stability	66.46	63.00	16.29	13.81	98.10	58.57	63.00	80.19
Rule of Law	87.84	91.83	15.33	21.63	100.00	88.94	91.83	95.67
Control of corruption	88.06	94.23	16.39	15.38	100.00	88.94	94.23	95.19
Economic growth	0.81	1.72	4.03	-10.82	25.18	1.10	1.72	2.29
GDP per capita	38843.19	36001.25	15604.34	7399.17	99107.71	34241.94	36001.25	43735.18
Inflation	1.21	1.00	1.55	-1.70	15.50	0.40	1.00	1.80

Source: Authors' own creation

Table 3.
Summary statistics

Correlations

Variables	EVA	Tobin's Q	ESG	Beta	Firm leverage	Firm's size	Three Institutional Qualities (IQ)	Political stability	Rule of Law	Control of corruption	Economic growth	GDP per capita	Inflation
EVA	1												
Tobin's Q	0.112**	1											
ESG	−0.077**	−0.070**	1										
Beta	−0.185**	−0.088**	0.105**	1									
Firm leverage	−0.029*	−0.026	0.007	0.050**	1								
Firm's size	−0.319**	−0.290**	0.478**	0.151**	0.012	1							
3 Institutional Qualities (IQ)	0.070**	0.092**	0.098**	−0.004	−0.005	−0.150**	1						
Political stability	0.057**	0.058**	0.074**	0.021	0.008	−0.060**	0.838**	1					
Rule of Law	0.066**	0.096**	0.062**	−0.014	−0.011	−0.190**	0.933**	0.634**	1				
Control of corruption	0.069**	0.098**	0.088**	−0.012	−0.013	−0.185**	0.947**	0.626**	0.970**	1			
Economic growth	0.012	0.029*	−0.143**	−0.122**	−0.005	−0.018	0.102**	0.167**	0.105**	0.036*	1		
GDP per capita	0.042**	0.089**	0.047**	0.002	0.015	−0.071**	0.743**	0.786**	0.598**	0.613**	0.163**	1	
Inflation	−0.017	−0.029*	−0.110**	−0.034*	0.009	−0.010	−0.495**	−0.461**	−0.445**	−0.442**	−0.014	−0.323**	1

Notes: **Correlation is significant at 0.01 level (two-tailed); *Correlation is significant at 0.05 level (two-tailed)
Source: Authors' own creation

Table 4.
Correlation matrix

	Linear mixed-effects multilevel regression				Two-step system GMM			
	Model 1		Model 2		Model 3		Model 4	
	EVA		Tobin's Q		EVA		Tobin's Q	
Variables	Coeff	SE	Coeff	SE	Coeff	SE	Coeff	SE
ESG	0.552***	(0.090)	0.013***	(0.002)	0.499*	(0.302)	0.008*	(0.005)
Beta	−29.01***	(2.857)	−0.227***	(0.073)	−73.425**	(33.291)	−2.230**	(1.048)
Leverage	−0.192	(0.127)	−0.004	(0.003)	−5.866	(10.421)	0.054	(0.266)
Firm size	−20.90***	(0.918)	−0.454***	(0.023)	−17.456***	(3.828)	−0.306***	(0.096)
Eco growth	−0.431	(0.367)	0.015	(0.010)	1.484	(4.024)	−0.128	(0.097)
GDP per capita	0.000	(0.000)	0.000	(0.000)	−0.001	(0.002)	0.000	(0.000)
Inflation	0.580	(1.050)	−0.0299	(0.029)	−22.648	(32.064)	0.682	(0.825)
Variance of random intercept	1.90***		2.28***		N/A			
LR test versus linear regression	$\chi^2(1) = 32.95$		$\chi^2(1) = 26.55$					
	p-value < 0.01		p-value < 0.01					
Arellano–Bond: AR2		N/A			0.190		0.558	
Sargan test p value					0.789		0.536	

Notes: Standard errors in parentheses. ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$; N/A= Not applicable for the model; N = 4770; Level 2: Country data; Constant is included (not reported for brevity)
Source: Authors' own creation

Table 5.
Linear mixed-effects multilevel analysis and two-step GMM for sustainability and financial performance

enhance resilience and reduce vulnerability to systemic shocks (Pescaroli *et al.*, 2023). Systematic risk absorption is related to the concept of adaptive management (Walters, 1986; Montgomery and Singh, 1984; Wintle and Lindenmayer, 2008) and large firms are adroit in handling it (Bhardwaj and Brooks, 1993; Kim and Burnie, 2002). The result across models is robust and consistent with previous literature (cf. Liu, 2020; Martínez-Ferrero and Frías-Aceituno, 2015; Qi *et al.*, 2014). In short, the relationship between sustainability and FP exists in the European context. In accordance with previous literature, firm size is negatively associated across models 1 to 4 (cf. Martínez-Ferrero and Frías-Aceituno, 2015; Rahi *et al.*, 2022a; Velte, 2017). However, we believe, in line with stakeholders' theory, that large firms are capable and socially bound to perform sustainability practices compared to their smaller counterparts. The results in Table 5, as well as in the earlier studies only showed an average relationship concerning firm size and do not segregate the impact of large or small firms' issues. To depart from the traditional circle of analysis, we further deployed quantile regression suggested by Koenker and Bassett (1978). This analysis will help us to check for further robustness and to identify changes in different quantiles.

Table 6 above presents panel OLS regression followed by quantile regression at the 25th, 50th, 75th and 90th quantiles. In these models, we only estimate the relationship between ESG and EVA to avoid repeating tasks already done in Table 5. The quantile regression results suggest some significant differences across different quantiles in the conditional distribution of ESG changes. First, we further prove that in any quantiles the relationship between sustainability and FP is positive and significant in the European context. The effect of ESG on EVA varies with quantiles. At the higher quantile (from Q50 and above), the marginal effect of ESG on EVA is rising. The ESG performance considerably increases FP (EVA) at 1% level across Q50 and above. This implies that at 1% improvement of ESG increases 13.3%–28.3% of FP (EVA). Based on this outcome, this study concludes that sustainability performance increases FP. Second, the interquartile coefficient indicates that in lower quantiles (Q50 and below) the firm size is negative and significant, but the situation is completely opposite in higher quantiles (Q75 and above), indicating a positive and significant relationship. The marginal effect of firm size on FP (EVA) is higher in higher quantiles. Based on this evidence, it can be inferred that large firms ensure better FP (EVA).

	OLS		Q25		Model 5 EVA Q50		Q75		Q90	
Variables	Coeff	SE	Coeff	SE	Coeff	SE	Coeff	SE	Coeff	SE
ESG	0.571***	(0.089)	0.179***	(0.0197)	0.133***	(0.0114)	0.143***	(0.0109)	0.283***	(0.0355)
Beta	−29.40***	(2.838)	−11.01***	(0.802)	−8.647***	(0.557)	−7.227***	(0.664)	−6.633***	(1.500)
Leverage	−0.175	(0.127)	−0.0454	(0.119)	−0.0151	(0.0837)	−0.0278	(0.0756)	−0.0231	(0.0423)
Firm Size	−19.50***	(0.885)	−7.503***	(0.517)	−1.272***	(0.309)	3.286***	(0.250)	8.794***	(0.447)
Eco Growth	0.0322	(0.349)	0.296***	(0.0795)	0.110**	(0.0553)	0.101*	(0.0574)	−0.00848	(0.139)
GDP per capita	0.000	(0.000)	0.000	(0.000)	0.000	(0.000)	0.000	(0.000)	0.000	(0.000)
Inflation	−0.718	(0.927)	−0.788*	(0.471)	−0.0570	(0.173)	0.607*	(0.321)	0.690*	(0.359)
R^2	0.13									

Notes: Standard errors in parentheses; ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$; N = 4,770; Constant is included (not reported for brevity)
Source: Authors' own creation

Table 6.
Quantile regression

On the other hand, the Beta coefficient indicates large firms are more adroit in handling risk volatility than their counterparts, small firms (Bhardwaj and Brooks, 1993; Kim and Burnie, 2002).

4.3.2 Relationship between institutional quality with corporate sustainability and financial performance. In this section, we tested *H2* to identify whether IQ as another actor in the relationship has any impact on corporate sustainability and FP or not. To reveal the relationship, Models 6–17 have been executed (Tables 7 to 9). First, in Models 6–11 (Tables 7 and 8), we captured whether the major three matrices of IQ have any effect on sustainability performance. The linear mixed-effects multilevel regression's result indicates all the IQ matrices have a positive and significant impact on CSP, but the GMM's result indicates that only ROL and CC have a significant positive impact on ensuring sustainability performance in the European context. We place a greater emphasis on dynamic GMM's results than on linear mixed-effect multilevel regression's results. The result is consistent with the previous literature (Azam *et al.*, 2021; Baumöhl *et al.*, 2019; Rahi *et al.*, 2022b). Under GMM, we did not find any association for PS, which might be attributed to political instability, particularly in CEE countries (Blagojević and Damijan, 2013; Brammer *et al.*, 2006; Gherghina *et al.*, 2019). The LR test versus linear regression is significant in LMMR, indicating the goodness of model fit. Further, from Models 12–17 (Table 9), we examined IQ effect on FP. In these models, we only applied a two-step system GMM, taking GMM's power into account by adopting a conservative approach. The impact on FP of IQ is similar as CSP. ROL and CC have a positive impact on ensuring FP, and like the prior GMM models, we did not find any significant relationship with PS. We observed that the PS coefficient is negative (though nonsignificant), in addition, from the univariate analysis, we observed issues concerning PS in the European context. In this way, we partially proved our *H2*. In all the GMM models, Sargan test *p*-values and AR2 values are insignificant. The GMM results demonstrated that the instruments used in the GMM such as moment condition, instrumental variable and estimation are valid. As a result, our instruments satisfy the condition for exogeneity (Hansen, 1982).

To articulate the moderating effect of IQs on sustainability and thus FP, we further conduct moderating analyses (Appendix). The results are consistent with previous findings and identified a moderating impact.

4.3.3 The interaction effect of institutional quality and economic growth on sustainability and financial performance. To test *H3*, we created an interactional variable. In the interaction, we took an overall score of three chosen IQ matrices. In these Models 18–20 (Table 10), we examined the impact of interaction – IQ and economic growth – on companies' sustainability and FP in the European context. Previous literature has demonstrated that these two interactional variables play an important role on the macro interorganizational environment when they interact (Butkiewicz and Yanikkaya, 2006; Salman *et al.*, 2019).

In this analysis, we only performed the two-step system GMM considering the robustness of the findings. The result suggests that such interaction only helps to ensure companies' market value or Tobin's Q. The result is significant at the 1% level. This might be a reason that such interaction increases investor confidence which raises companies' market value (Garcia-Sánchez *et al.*, 2020; Gupta *et al.*, 2017). We did not find an interactional effect on ESG and EVA. Thus, we partially proved our *H3*. In short, the interaction of IQ and economic growth moderates the link and increases company's market value (Tobin's Q). The GMM results demonstrated that the instruments used in the GMM are valid as Sargan test *p*-values and AR2 values are insignificant.

| Relationship between IQ and CSP. | Linear mixed-effects multilevel regression | | | | | |
| | Model 6 | | Model 7 ESG | | Model 8 | |
	Coeff	SE	Coeff	SE	Coeff	SE
Political stability	0.151***	(0.0223)				
Rule of law			0.252***	(0.0191)		
Control of corruption					0.202***	(0.0176)
Beta	0.826*	(0.454)	0.945**	(0.448)	0.887**	(0.450)
Leverage	0.0122	(0.0194)	0.0151	(0.019)	0.0153	(0.0192)
Firm size	6.331***	(0.133)	6.497***	(0.132)	6.513***	(0.133)
Eco growth	−0.670***	(0.053)	−0.624***	(0.052)	−0.596***	(0.052)
GDP per capita	−0.000***	(0.000)	−0.000***	(0.000)	−0.000***	(1.72e-05)
Inflation	−0.669***	(0.153)	−0.385***	(0.149)	−0.501***	(0.149)
Variance of random intercept	2.20***		2.20***		2.20***	
LR test versus linear regression	$\chi^2(1) = 614.52$		$\chi^2(1) = 591.22$		$\chi^2(1) = 596.47$	
	p-value<0.01		p-value<0.01		p-value<0.01	
Observations	4,770		4,770		4,770	

Notes: Standard errors in parentheses; ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$; Constant is included (not reported for brevity); Level 2: company data
Source: Authors' own creation

Table 7.
Linear mixed-effects
multilevel regression
for IQ and CSP

| Relationship between IQ and CSP. | Two-step system GMM | | | | | |
| | Model 9 | | Model 10 ESG | | Model 11 | |
	Coeff	SE	Coeff	SE	Coeff	SE
Political stability	1.829	(29.667)				
Rule of Law			7.857**	(3.399)		
Control of corruption					8.456*	(4.814)
Beta	−23.619	(158.912)	−147.385	(108.304)	−170.980	(149.545)
Leverage	0.627	(2.515)	4.504	(13.234)	6.423	(15.509)
Firm size	6.291	(9.591)	24.180	(15.402)	28.770	(22.208)
Eco growth	10.882	(23.948)	−16.342	(20.092)	−17.550	(26.177)
GDP per capita	0.001	(0.024)	−0.001	(0.004)	−0.001	(0.005)
Inflation	−117.996	(221.722)	112.286	(179.572)	127.962	(233.000)
Arellano–Bond: AR2	0.367		0.354		0.416	
Sargan test p value	0.732		0.343		0.280	
Observations	4770		3975		3975	

Notes: Standard errors in parentheses; ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$; Constant is included (not reported for brevity)
Source: Authors' own creation

Table 8.
Two-step system
GMM for IQ and CSP

5. Conclusion

The relationship between corporate sustainability and FP has become a point of interest for the researcher since the beginning of 1980 and received metaphorical wind in the sails after the publication of the Brundtland report in in the same decade (Brundtland, 1987). Over the past few decades, an increasing amount of corporate sustainability investments was expected to promote risk management and facilitate access to financial markets with

Table 9.
Two-step system GMM for IQ and FP

| | Two-step system GMM | | | | | | | | | | | |
| | Model 12 | | Model 13 EVA | | Model 14 | | Model 15 | | Model 16 Tobin's Q | | Model 17 | |
Variables	Coeff	SE	Coeff	SE	Coeff	SE	Coeff	SE	Coeff	SE	Coeff	SE
Political stability	−4.749	(10.665)										
Rule of law			3.706**	(1.550)			−0.021	(0.036)				
Control of corruption					4.012**	(1.813)			0.095*	(0.050)	0.102*	(0.057)
Beta	−77.374	(111.123)	−149.187***	(54.474)	−166.144***	(61.720)	−2.743**	(1.133)	−4.699**	(1.984)	−5.072**	(2.137)
Leverage	−7.666	(22.325)	−5.427	(8.963)	−6.886	(9.709)	−0.113	(0.200)	−0.107	(0.346)	−0.154	(0.348)
Firm size	−20.012	(17.718)	−4.786	(5.673)	−2.684	(6.638)	−0.310***	(0.102)	−0.003	(0.141)	0.049	(0.169)
Eco growth	13.871	(32.806)	−6.657*	(3.885)	−6.140	(3.888)	0.072	(0.072)	−0.279**	(0.132)	−0.263**	(0.127)
GDP per capita	−0.000	(0.001)	−0.001*	(0.000)	−0.001*	(0.001)	−0.000	(0.000)	0.000	(0.000)	0.000	(0.000)
Inflation	−152.712	(307.169)	33.734	(28.169)	31.625	(28.908)	−1.293**	(0.524)	1.646*	(0.944)	1.580*	(0.944)
Arellano–Bond: AR2	0.521		0.129		0.133		0.220		0.400		0.408	
Sargan test p value	0.241		0.559		0.597		0.454		0.676		0.670	
Observations			3,975				3,180		3,975		3,975	

Notes: Standard errors in parentheses; ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$; Constant is included (not reported for brevity)
Source: Authors' own creation

| | Two-step system GMM | | | | | |
| | Model 18 ESG | | Model 19 EVA | | Model 20 Tobin's Q | |
Variables	Coeff	SE	Coeff	SE	Coeff	SE
IQ_INT_Economic Growth	1.651	(1.144)	−1.033	(5.180)	0.010***	(0.004)
Beta	17.115	(69.586)	−152.493	(509.927)	−1.880**	(0.775)
Leverage	−0.346	(12.156)	3.054	(31.441)	−0.001	(0.011)
Firm size	12.312*	(7.139)	−12.592	(11.708)	−0.303***	(0.083)
Eco growth	−134.084	(90.257)	81.801	(412.242)	−0.825***	(0.310)
GDP per capita	0.011*	(0.006)	−0.000	(0.002)	0.000	(0.000)
Inflation	19.124*	(11.544)	−42.334	(173.786)	−0.031	(0.064)
Arellano–Bond: AR2	0.178		0.671		0.183	
Sargan test p value	0.394		0.184		0.461	
Observations	4,762		3,975		4,770	

Notes: Standard errors in parentheses; ***p < 0.01; **p < 0.05; *p < 0.1; Constant is included (not reported for brevity)
Source: Authors' own creation

Table 10.
Two-step system
GMM for moderation
effect on ESG and FP

sustainability performance producing an intangible capital that would work as insurance for future value creation (Jona and Soderstrom, 2022; Yu and Zhao, 2015). In this context, governments and institutions are dedicated to creating the framework that levers the relationship between sustainability performance and FP. Considering that corporations are embedded in an interorganizational network of actors, our study has examined whether the IQ and macroeconomic factors moderate the link between sustainability performance and FP in Europe.

Theoretically, there is a consensus that power distance and hierarchy always hamper the relationship among different actors; therefore, the notion of institutional pressure might not always be effective, and the recent Sri Lankan crisis proved the theoretical notion. However, to ensure a long-lasting, sustainable development, an interplay relationship among different actors is the precondition, which we captured in this research with the help of NGT. By using NGT, we theoretically established a relationship among interorganizational actors and then the concept was empirically tested. To this aim, we analyzed 2015–2020 data from 795 listed European companies in 21 countries. For the baseline result, we used linear mixed-effects multilevel regression considering two levels of data. The robustness of findings is confirmed by the dynamic two steps system GMM. The result confirmed that an interplay relationship exists among interorganizational actors, which moderates corporate sustainability and FP in the European context. Thus, our analyses fully support the first hypothesis and partially support two other hypotheses. In addition, quantile regression analysis was further employed to observe changes in the relationship in different quantiles. The findings are consistent with earlier econometric models. Further, with the help of moderation analyses (see Appendix) we confirm that IQs help to create a macro-business environment framework toward sustainability. The results are also consistent with previous literature (cf. Liu, 2020; Martínez-Ferrero and Frías-Aceituno, 2015; Qi et al., 2014; Azam et al., 2021; Baumöhl et al., 2019; Rahi et al., 2022b) and support our theoretical proposition in a sense that under a favorable macro business environment, in this case, European context, the relationship between corporate sustainability and FP is transformed, modified and

shaped through an interaction of the trajectories of multiple actors, which we captured through the notion of NGT.

However, the novelty of this paper is that we broke the circle of applying traditional domain theories. We also broke the circle of applying traditional measurement tools to examine the relationship; that is not thinking of firms as isolated entities and adhering to the idea that sustainability and FP is solely caused by that single firm's actions. Indeed, rather than "reinventing the wheel," the research has been improved upon. Practitioners and as well as policymakers will benefit from the findings because policymakers will recognize the significance of maintaining an effective (good) governance framework for sustainability in the macro environment, which is considered an essential atmosphere of the interorganizational relationship spectrum. Within such a business atmosphere, practitioners would be able to formulate and implement sustainability-related strategies. Moreover, for the sake of enacting the EU taxonomy or the EU green deal, politicians at the EU level can take such interaction into consideration. In addition, from the results, it can be further argued that European firms started getting benefits from EU directive, Directive 2014/95/EU, as well as the Paris Agreement which engaged governmental institutions to facilitate an ecosystem for corporate sustainability practices. Though PS is still worrisome, especially in the CEE areas, EU central mechanisms help to reform CEE member states to improve their condition (Batory, 2012; Andonova, 2003; Albu *et al.*, 2016). In this vein, investors are becoming more confident in sustainability projects, and this phenomenon was observed by capturing a rising firm's market value (Tobin's Q). Despite all of that, there are still several issues unanswered in this study and that need to be resolved in further research. First, although the results are in line with existing literature, additional research using IQ data from a different database other than WGI (e. g. the IQ data set created by Kuncic, 2014; Database of Political Institutions, V-Dem) is needed because WGI data has been criticized due to subjectively biased (Kaufmann and Kraay, 2007). Future research may also consider ESG controversy score to measure CSP as it compensates current debate surrounding ESG measures. The authors also advise future research to look at the impact using worldwide data. It would be interesting to compare various geographic locations of developed and developing nations. In addition, this study did not focus on heterogeneity by separating the nature of the firm and its development status, focusing on sustainability and FP. It would be interesting to investigate how the nature of the firm changes at various stages of development. In this study, we did not bring the issue of executive compensation and CEO duality issues to determine the relationship. We believe those issues might have an impact and which might be an option to incorporate into further research. This study only employed linear mixed-effects multilevel regression, two steps system GMM and quantile regression to estimate the relationship. However, it would be interesting to use the Difference-in-Differences analysis to identify the casualty reflecting EU policy implementation. We can finally conclude that the role of actors that are long-term oriented is crucial for improving sustainability practices as a balanced approach aimed at ensuring not only corporate FP but also sustainability performance.

Note

1. This argument is based on the source article. This argument was made before the Russia-Ukraine war, as were the data collection and design of this study. The authors are fully aware of the war's repercussions and EU sanctions against Russia.

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Appendix

| Model | | Coefficients[a] Unstandardized coefficients | | Standardized coefficients | | |
		B	Std. Error	Beta	t	Sig.
1	(Constant)	16.869	5.148		3.277	0.001
	ESG	−0.433	0.081	−0.077	−5.335	0.000
2	(Constant)	18.192	5.145		3.536	0.000
	ESG	−0.912	0.131	−0.162	−6.981	0.000
	Moderator_ESG × PS	0.007	0.001	0.109	4.672	0.000
a. Dependent variable: EVA						
1	(Constant)	16.869	5.148		3.277	0.001
	ESG	−0.433	0.081	−0.077	−5.335	0.000
2	(Constant)	18.936	5.152		3.676	0.000
	ESG	−1.221	0.176	−0.217	−6.937	0.000
	Moderator_ESG × ROL	0.009	0.002	0.158	5.042	0.000
a. Dependent Variable: EVA						
1	(Constant)	16.869	5.148		3.277	0.001
	ESG	−0.433	0.081	−0.077	−5.335	0.000
2	(Constant)	18.517	5.145		3.599	0.000
	ESG	−1.173	0.166	−0.209	−7.065	0.000
	Moderator_ESG × CC	0.008	0.002	0.151	5.104	0.000
a. Dependent variable: EVA						
1	(Constant)	1.815	0.129		14.061	0.000
	ESG	−0.010	0.002	−0.070	−4.862	0.000
2	(Constant)	1.848	0.129		14.329	0.000
	ESG	−0.022	0.003	−0.156	−6.706	0.000
	Moderator_ESG × PS	0.000	0.000	0.109	4.697	0.000
a. Dependent variable: Tobins'Q						
1	(Constant)	1.815	0.129		14.061	0.000
	ESG	−0.010	0.002	−0.070	−4.862	0.000
2	(Constant)	1.887	0.129		14.642	0.000
	ESG	−0.037	0.004	−0.264	−8.447	0.000
	Moderator_ESG × ROL	0.000	0.000	0.218	6.982	0.000
a. Dependent variable: Tobins'Q						
1	(Constant)	1.815	0.129		14.061	0.000
	ESG	−0.010	0.002	−0.070	−4.862	0.000
2	(Constant)	1.872	0.129		14.546	0.000
	ESG	−0.035	0.004	−0.251	−8.532	0.000
	Moderator_ESG × CC	0.000	0.000	0.207	7.043	0.000
a. Dependent variable: Tobins'Q						

Table A1.
Moderation analyses

Source: Authors' own creation

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