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Financial performance of emerging market companies during the COVID-19 pandemic: moderating role of sustainability performance

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Abstract

Purpose – This study aims to investigate whether sustainability performance (SP) served as a safeguard for firm profitability (FP) and enhanced corporate resilience in emerging markets during the COVID-19 pandemic.

Design/methodology/approach – Using a sample of 1,091 firms in 25 emerging markets from 2017 to 2021, this study analyses the moderating role of SP on the relationship between FP and COVID-19 by using hierarchical linear modelling at three levels: (a) time-level; (b) firm-level; (c) country-level.

Findings – The results indicate that during the years 2020–2021, emerging market firms with robust SP showed better FP in the midst of the COVID-19 pandemic. The findings also indicate that all dimensions of sustainability, i.e. environmental, social and governance (ESG), have significantly affected the FP in the post-COVID period. Hence, adhering to ESG principles aids in alleviating adverse financial repercussions during times of crises.

Practical implications – This study provides valuable insights for companies and policymakers for finding solutions that may assist them in improving SP globally and enduring crises resiliently. The findings are also relevant to institutional investors that consider SP as an investment criteria. Although the COVID-19 pandemic was temporary, the lessons learned could protect firms from future similar global crises.

Originality/value – This study enhances the understanding of the contingency relationship between sustainability and financial performance by offering up-to-date empirical insights within the context of emerging markets during the pandemic. It demonstrates how different institutional frameworks influenced the SP–FP association during the crisis. Thus, this paper expands the understanding of crisis management literature and bridges the research void concerning the impact of SP on FP in an emerging market context.

Keywords COVID-19, Emerging markets, Firm profitability, Sustainability performance

Paper type Research paper

1. Introduction

The world has witnessed the detrimental effects of the coronavirus disease (COVID-19), which spread from the city of Wuhan in China in late 2019, affecting 210 countries and triggering social and economic disruptions due to its rapid expansion around the world (Baker *et al.*, 2020). According to the World Health Organization (2023), as of 2 August 2023, there were 768,983,095 confirmed cases and 6,953,743 deaths in the world. COVID-19 has caused significant social, environmental and economic impacts, directly affecting production, supply chain, consumer demand and marketing processes as well as job markets. The unfavourable circumstances of the pandemic have also severely undermined the pursuit of the Sustainable

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Development Goals (SDGs) and raised serious concerns about their achievement by 2030, with unprecedented economic and social recovery efforts that have been insufficiently geared towards sustainable development (Jackie Hsu *et al.*, 2024; Zhao *et al.*, 2022).

Although many countries have experienced these effects, the pandemic affected emerging markets more severely due to vaccine shortages, high exposure to commodity prices and lack of financial support (Alberola *et al.*, 2021). The pandemic has severely undermined the pursuit of the SDGs. Uneven advancement in SDGs has increased development disparities between developed and emerging markets. Progress towards the SDGs has declined significantly in most low-income and lower-middle-income countries, suggesting that the health system, infrastructure, market and regulatory framework of these markets are less resilient to emergencies like COVID-19. These countries often lack the fiscal capacity to mount an adequate response to such crises (Barbier and Burgess, 2020). Thus, emerging market firms have faced more devastating trade-offs than developed markets during this crisis.

Despite its detrimental effects, COVID-19 provided an occasion to focus on the moderating effect of sustainability performance (SP) on firm profitability (FP), particularly in emerging markets, to ensure the protective power of sustainability practices on social and economic downturns. Emerging markets differ from developed markets in institutional features and managerial perceptions due to their unique nature. Many of these countries exhibit frail public health systems, insufficient social safety-nets, restricted financial and fiscal policy flexibility and significant susceptibility to global trade fluctuations (Ahmed *et al.*, 2020). Emerging market firms also often face challenges related to poor information, weak investor protection and immature environmental, social and governance (ESG) regulations, making it more difficult for them to prioritize sustainability. Thus, they were more concerned about economic sustainability as they were constrained due to the pressure of COVID-19 on consumption, supply chain and productive activities and received less governmental financial support to manage the distruptive effects of the pandemic, leading to a trade-off for the allocation of resources between sustainability and profitable activities (Hope *et al.*, 2022; Lu and Khan, 2023).

Although there are numerous studies on the effects of SP on FP for developed countries (Bose *et al.*, 2022; Lu *et al.*, 2022; Lu and Khan, 2023), there are relatively few similar studies on emerging markets. This is an important gap to be filled since SP and FP can contribute to the benefit of the SDGs amid pandemics in emerging markets. In this context, this study enriches the literature by exploring the moderating effect of SP on FP during the COVID-19 by using data from 1,091 firms in 25 emerging markets. In our data set, the years 2017–2019 represent the pre-pandemic period, while the years 2020–2021 show the pandemic period. We use ESG scores of the firms obtained from Thomson Reuters DataStream as SP indicators. The findings indicate that sustainable companies exhibit a significant negative relationship with the FP. Interestingly, the SP plays a positive and significant moderating role on the FP during the COVID-19 in emerging markets, indicating that sustainability practices protected firms during the pandemic.

The contributions of the study are threefold. First, it examines the significancy of SP on FP by using multiperiod data during the pre- and post-pandemic periods in emerging market settings by considering the influence of time-, firm- and country-level determinants of FP. It provides cross-country evidence of the moderating role of the firm-level SP in mitigating FP decline in the aftermath of COVID-19 and expands the stakeholder perspective in managing an infectious crisis. This is important as a pandemic is a global health drama, being completely exogenous to the behaviour of firms, and is expected to have long-lasting impact on global business. Companies play an important role in society by innovating, investing and

generating employment and income for economic growth. Thus, they should achieve sustainability by ensuring they are both financially viable and profitable to succeed in the long run. It is also crucial to have efficient management that aligns business goals with the SDGs, such as reducing poverty (SDG 1), improving good health and well-being (SDG 3), advancing gender equality (SDG 5), promoting decent work and economic growth (SDG 8) and encouraging responsible consumption and production (SDG 12) through enhancing environmental and social conditions within the business environment.

Second, unlike previous studies, this study uses hierarchical linear modelling (HLM) – also called multilevel analysis – due to the multilevel nature of the determinants. While numerous studies empirically investigate the impact of SP on FP, they often do so in an isolated way. This research represents an attempt to conduct an analysis that simultaneously encompasses time, firm and country-level factors, using a method that effectively accounts for the interrelated effects among these various levels.

Finally, this research depicts how SP in a global health crisis could positively contribute to the economic welfare of firms. In this regard, it provides valuable insights for regulators that look for global-level solutions to improving corporate SP and managing detrimental crises resiliently. The findings of this study are also relevant to institutional investors that consider SP as an investment criterion in portfolio management.

The rest of the study is organized as follows: the subsequent section examines pertinent literature and formulates the hypotheses. Section 3 provides the data and methodology, and Section 4 presents the results. The paper then discusses the findings and concludes by highlighting potential avenues of future research.

2. Literature review and hypotheses development

The value of sustainability and its alignment with business strategy is important. According to Hahn and Figge (2011), a firm should strive to balance economic, social and environmental goals to reap long-term benefits, enabling it to contribute to the SDGs through these pillars. This becomes particularly important when firms face crises such as the impact of emergencies like COVID-19. This leads to a wake-up call to care more for environmental and social matters.

Corporate sustainability (CS) refers to the initiatives and actions of a firm taken to address ESG issues that positively contribute to society. In this context, firms often commit to conducting their business in a way that not only generates profit but also considers the interests of stakeholders. Thus, they focus on long-term viability and resilience by integrating economic, social and environmental parameters into corporate strategy. This approach may include efforts to reduce carbon emissions, optimize resource usage, promote fair labour practices and develop sustainable supply chain policies, among many others. Within this framework, ESG scores are used to evaluate how well a firm manages its impacts on environment, its relationships with employees, communities and other stakeholders and the quality of its corporate governance practices. It also provides investors and other stakeholders with a standardized way to evaluate firms based on responsible business practices. This viewpoint shows the belief that a firm's strong SP in the pre-crisis period protects its financial performance during the crisis, suggesting that firms should engage in sustainability to diminish the negative effects of future risks by being good corporate citizens (Crossley *et al.*, 2021).

This study aims to explore the impact of the COVID-19 pandemic on FP in emerging markets and investigate the moderating role of SP, specifically examining ESG dimensions. The research also considers the influence of time-, firm-, country-level determinants of FP. In the following part, we develop the hypotheses discussing the aforementioned relationships.

2.1 *Sustainability and firm profitability*

Although there are many studies that investigate the relationship between SP and the FP of firms, they revealed mix results (Grewatsch and Kleindienst, 2017). Some studies argue for a negative relationship between SP and FP (Aksoy *et al.*, 2020; Di Giuli and Kostovetsky, 2014; Duque-Grisales and Aguilera-Caracuel, 2019; Lee *et al.*, 2009; Rahi *et al.*, 2022), claiming that sustainability investment, i.e. improving working conditions, using environmentally friendly practices and taking socially responsible actions, creates opportunity cost for firms. The second group of works (Jha and Rangarajan, 2022; Santis *et al.*, 2016; Ullmann, 1985) suggest that there is no direct relationship between SP and FP. They argue that this relationship is complex and influenced by many factors. Finally, the third view asserts that SP is positively associated with FP (Ameer and Othman, 2012; Friede *et al.*, 2015; Kabir and Thai, 2017; Orlitzky *et al.*, 2003), indicating that a strong relationship with stakeholders through SP yields financial benefits for firms. The mixed results are due to the different characteristics of countries, implying that SP has a long-term impact on economic, environmental and social conditions. The impacts of SP on FP diverge across countries as the approaches to enhancing sustainability practices differ.

Stakeholder theory and resource-based theory are prominent in helping to explain the relationship between SP and FP. Stakeholder theory states that the policies of firms should aim to satisfy not only shareholders but also other stakeholders (Freeman, 1984). The stronger the relationship firms build with stakeholders, the easier it will be for stakeholders to achieve common goals. In this regard, stakeholder theory provides a competitive edge for firms by embracing the expectations of stakeholders for sustainability through three components: social welfare and management competence; environmental competence; and economic competence (Garcia, 2022; Wong and Ngai, 2021). In this context, sustainability practices of firms act as a strong means to harmonize the divergent interests of stakeholders through a shared commitment to and business vision of sustainability-conscious policies.

Resource-based theory, on the other hand, suggests that executing sustainability activities by using internal and external resources produces sustainable advantages for a firm, and enhances its reputation (Barney, 1991). It intuitively explains that SP as a resource can improve a firm's output and lead to better financial results, as well as reduce the probability of environmental accidents. Thus, firms should be responsible for exploiting resources. However, improvement in social and environmental performance can take longer and require more specific resources. Lu and Khan (2023) suggested that environmentally and socially responsible firms in emerging markets may have a competitive edge during crises due to their efficient use of resources. According to De Carvalho *et al.* (2019), CS involves integrating the SDGs into a firm's operational and managerial processes by setting up goals to achieve social, economic and environmental targets. Building on this approach, firms may increase profitability by allocating more resources to ESG practices.

Emerging markets constitute an interesting setting for exploring the relationship between SP and FP due to their less strong institutional framework compared to developed markets. Political instability and turbulent market conditions increase firm risk in these countries (Garcia and Orsato, 2020; Schaltegger and Wagner, 2011). There are relatively few studies held in emerging markets for exploring the relationship between SP and FP. Corporate social responsibility practices in China and Pakistan lead to better FP (Waheed and Zhang, 2022). Sustainable firms in Brazil experience better financial performance (Lourenço and Branco, 2013). Many cross-country studies also find a positive relationship between SP and FP (Ameer and Othman, 2012; Lu *et al.*, 2022; Xiao *et al.*, 2018). Thus, we propose the following hypothesis:

H1. SP has a positive effect on FP.

2.2 Sustainability and firm profitability during the COVID-19 pandemic

The COVID-19 pandemic had a global nature and affected institutional bodies more seriously in all countries due to shutdowns and restrictions on mobility and social contact compared to previous pandemics. Companies experienced a massive decline in demand and, thus, sales revenue. On the other hand, their debt and other fixed expenses were not stopped, leading to financial difficulties and liquidity problems in terms of payments to their suppliers, employees and lenders. The combined effect appears in financial statements as a decrease in FP. Prior studies show that the COVID-19 outbreak directly and negatively affected companies in developed and emerging markets (Aifuwa *et al.*, 2020; Alsamhi *et al.*, 2022; Shen *et al.*, 2020). Building on these arguments, we propose the following hypothesis:

H2. The COVID-19 pandemic had a negative effect on FP.

Recent studies show that firms that implement sustainability activities reduce financial risks during crises, enhance market value and improve financial performance. Demers *et al.* (2021) suggest that SP may offer a downside risk protection for firms. According to Hoang *et al.* (2023), the quality and quantity of ESG data disclosed by firms can play a vital role in reducing the negative impact of pandemic crises on financial performance. In a recent study held on publicly listed Nordic firms, Yahya (2023) identified that good SP provided resilience for firms during COVID-19, as their environment and social performances are positively related to FP. This contingency view asserts that the relationship between FP and crises is moderated by SP.

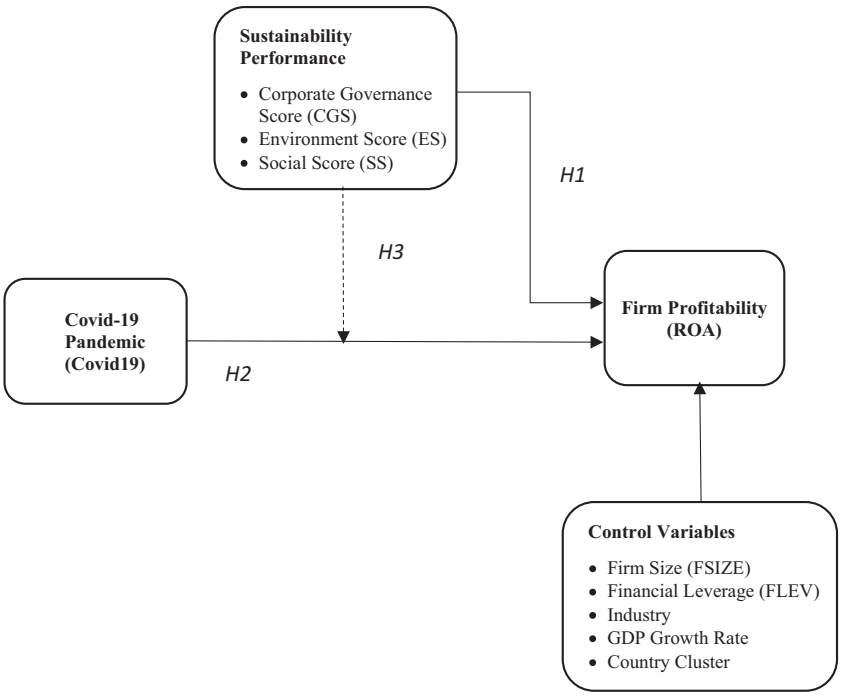
The two theories mentioned above, i.e. stakeholder theory and resource-based theory, endorse sustainable practices as essential prerequisites for firms to thrive in difficult circumstances. Stakeholder theory asserts that investment in ESG activities can boost the relationship between companies and their stakeholders (Ahmad *et al.*, 2021). Thus, firms execute sustainable practices to show a better performance to stakeholders, leading to enhanced confidence. Stakeholder theory also suggests that ESG practices can enhance firm value in two ways. First, an increase in reputation due to SP could boost sales, and second, the benefits of shareholders may increase due to holding shares of a sustainable firm (Gillan *et al.*, 2021). Moreover, the literature has recently shifted from the concept of sustainability to its subdimensions, particularly environment performance, due to climate change that has attracted increased concerns from stakeholders (Li *et al.*, 2017). Resource-based theory, on the other hand, treats sustainability initiatives as investments in a firm's reputation that increase FP in the long run. In the context of COVID-19, resource-based theory indicates that sustainability initiatives could be a catalyst for a competitive edge to the extent that it differentiates a firm from others (Karman *et al.*, 2024; Wu *et al.*, 2022). Firms engaged in ESG initiatives use their resources effectively, leading to increased economic gains while strengthening their relationships with stakeholders. COVID-19 makes it possible to empirically examine whether firm-level stakeholder-value orientation through sound sustainability practices contributes to preserving FP.

Most of the recent studies conducted on COVID-19 indicate that stakeholders rewarded companies that pursue responsible practices on social and environmental matters, and higher SP reduced financial risks triggered by the pandemic (Garel and Petit-Romec, 2021; Lu *et al.*, 2022). This is particularly true in emerging markets that are exposed to vulnerable conditions due to limited resources (Bodhanwala and Bodhanwala, 2023; Broadstock *et al.*, 2021; Selmi *et al.*, 2021). Compared to developed countries, governments in emerging markets offered lower levels of financial support and assistance (Alberola *et al.*, 2021). Zhang *et al.* (2023) and Huang *et al.* (2020) noted the importance of ESG performance in easing the financial impact of the pandemic for Chinese firms. Similarly, Kaakeh and Gokmenoglu (2022) showed that

during the COVID-19 crisis, an environmentally friendly business model positively affected the financial performance of firms. Using 1645 firm-observations of Korean listed firms, Hwang *et al.* (2021) argued that better SP reduced the decline in FP during the pandemic. Firms with better SP tended to have better access to resources, making them more resilient during the crisis.

Amosh and Khatib (2023a) examined the impact of the COVID-19 on the financial performance of firms and the moderating role of ESG performance on this relationship across nine countries from the G20 group for the years 2016–2021 and pointed out that the pandemic had an adverse impact on FP, but ESG performance mitigates its severity. Rahim (2021) argued that firms that have better environmental performance in Pakistan were more profitable than their counterparts during COVID-19. Amosh and Khatib (2023b) pointed out that the environmental performance of firms in emerging markets had a positive effect in protecting them from the pandemic. On the other hand, using the ESG scores of 225 Indian firms from 2018 to 2020, Narula *et al.* (2024) identified a negatively significant relationship between the environment score and firm performance, no significant relationship between the SS and firm performance and a positively significant governance score with firm performance during COVID-19. Building on these arguments, we suggest the following hypothesis (Figure 1):

H3. SP positively moderated the relationship between the COVID-19 pandemic and FP.



Source: Created by author

Figure 1. The conceptual framework

3. Research methodology

3.1 Data sample

The present study is based on a cross-country sample. Our sample consists of non-financial firms that are publicly traded in 25 emerging nations. We selected these countries based on the categorization of the International Monetary Fund (2023). The sample encompasses panel data spanning from 2017 to 2021. We extracted the data from Thomson Reuters EIKON database (2023). We conducted separate tests on each dimension of sustainability during the pandemic. Our sample contains 5,455 observations from 1,091 firms. Table 1 shows the countries and number of firms.

3.2 Variable definitions and measurement

FP (ROA) is used as a dependent variable in accordance with prior studies (Lu *et al.*, 2022; Radu and Smaili, 2021). We calculated ROA as the ratio of net income to total assets.

COVID-19 pandemic (Covid19) is used as an independent variable. We measured COVID-19 by using a dummy variable that assumes "1" for the years 2020 and 2021 and "0" otherwise.

Environment score (ES), social score (SS) and corporate governance score (CGS) are used as moderating variables. We measured these variables as follows.

The Environment Score (ES) assesses a firm's influence on living and non-living natural systems. It reflects the extent to which a company uses optimal management practices to

Table 1. The sample

Countries	No. of companies	Country clusters
Brazil	62	LA
Chile	30	LA
China	152	CA
Colombia	10	LA
Czech Republic	3	EE
Egypt	3	ME
Greece	11	EE
Hungary	9	EE
India	72	SA
Indonesia	63	SA
Kuwait	5	ME
Malaysia	61	SA
Mexico	69	LA
Peru	22	LA
Philippines	24	SA
Poland	28	EE
Qatar	6	ME
Russia	15	EE
Saudi Arabia	7	ME
South Africa	142	A
South Korea	85	CA
Taiwan	113	CA
Thailand	78	SA
Turkey	20	ME
United Arab Emirates	1	ME
Total	*1,091*	

Source: Thomson Reuters (2023)

mitigate environmental risks and leverage environmental opportunities, ultimately contributing to long-term shareholder value.

The Social Score (SS) assesses a firm's ability to cultivate trust and loyalty among its employees, customers and the broader society by implementing optimal management practices. It serves as an indicator of the company's reputation and the sustainability of its permission to operate, both of which are pivotal factors influencing its capacity to create lasting shareholder value.

The Corporate Governance Score (CGS) evaluates a firm's mechanisms and procedures designed to ensure that its board members and executives consistently prioritize the well-being of its shareholders. It mirrors the firm's ability to manage its rights and obligations by establishing incentives, oversight and safeguards at fostering enduring shareholder value.

Following prior studies (Lee *et al.*, 2016; Lu *et al.*, 2022), we used three firm-specific control variables, i.e. firm size, financial leverage and industry.

Firm size (FSIZE) is the natural log of total assets.

Financial leverage (FLEV) is computed as the proportion of short-term and long-term debt to total assets.

Industry is used because companies operating in industries with heightened environmental sensitivity face greater pressure from stakeholders and the community to enhance their SP.

At the country level, we included one control variable, i.e. GDP growth rate, and one categorical variable, i.e. country cluster, following the prior studies (Bose *et al.*, 2022; Lu and Khan, 2023).

GDP growth rate (GDP) is the annual percentage growth rate of GDP at market prices based on constant local currency retrieved from the World Bank.

Country Cluster (ClusterID) is a categorical variable that indicates the groupings of countries in our sample based on their cultural similarities. We classified the firms into six clusters: Anglo (A); Latin America (LA); Eastern Europe (EE); Middle East (ME); Confucian Asia (CA); and Southern Asia (SA).

3.3 Methodology and data analysis

To examine the dynamic relationship between SP and FP, we use HLM – also called multilevel analysis – via Stata. The financial performance data consist of yearly observations organized within the firms and countries, exhibiting a hierarchical structure characterized by varying levels of aggregation. In addition to the hierarchical structure, the data also possess a longitudinal nature, involving repeated measurements where the dependent variable is observed for the same firm across multiple years. Since the number of firms belonging to the countries in our sample varies, we grouped countries based on the country clusters of the "Global Leadership and Organizational Behaviour Effectiveness" (GLOBE) project (House *et al.*, 2004; Kabasakal *et al.*, 2012). The model's highest level (level 3) includes country clusters, while level 2 includes firms and level 1 includes years.

The main advantage of HLM over the ordinary least squares (OLS) is that HLM enables us to identify and analyse individual heterogeneities between the groups to which these individuals belong, making it possible to specify random components in each analysis level. HLM addresses the issue of non-independence among observations within the same group, resulting in standard error estimates that are unbiased when compared to OLS models (Hair and Fávero, 2019). Moreover, when researchers aim to examine whether group-level covariates moderate individual-level effects, multilevel models could be the most suitable approach (Arceneaux and Nickerson, 2009; Hair and Fávero, 2019; Steenbergen and Jones, 2002). HLM takes into account the attributes of various levels and can help mitigate biased errors in traditional fixed effects estimates. It simultaneously addresses residuals at

various levels, assessing the influence of variables at levels 1, 2 and 3 on dependent variables and quantifying the explanatory variances of cross-level effects on these dependent variables (Hofmann, 1997).

We verified our hypotheses by estimating the models depicted in equations (1)–(3):

$$ROA_{i,t} = \alpha + X_1 CGS_{i,t} + X_2 Covid19_{i,t} + X_3 CGS_{i,t} * Covid19_{i,t} + X_4 FSIZE_{i,t} + X_5 FLEV_{i,t} + X_6 Industry_{i,t} + X_7 GDP_{i,t} + X_8 ClusterID_{i,t} + e_{i,t} \quad (1)$$

$$ROA_{i,t} = \alpha + X_1 ES_{i,t} + X_2 Covid19_{i,t} + X_3 ES_{i,t} * Covid19_{i,t} + X_4 FSIZE_{i,t} + X_5 FLEV_{i,t} + X_6 Industry_{i,t} + X_7 GDP_{i,t} + X_8 ClusterID_{i,t} + e_{i,t} \quad (2)$$

$$ROA_{i,t} = \alpha + X_1 SS_{i,t} + X_2 Covid19_{i,t} + X_3 SS_{i,t} * Covid19_{i,t} + X_4 FSIZE_{i,t} + X_5 FLEV_{i,t} + X_6 Industry_{i,t} + X_7 GDP_{i,t} + X_8 ClusterID_{i,t} + e_{i,t} \quad (3)$$

4. Empirical findings

4.1 Descriptive statistics

Table 2 presents the summary of the descriptive statistics and correlation matrix. The mean value for FP is 6.48. The mean values for the ESG pillars are close to each other, ranging from 51.13 to 56.18, indicating that there is less variation in environment, social and governance performance among the firms. Table 2 shows that the correlation between FP and COVID-19 is negative and insignificant, while the correlations between the ESG scores and COVID-19 are positive and significant. Furthermore, the firm size is positively and significantly correlated with the ESG performance. We also carried out the variance inflation factor (VIF) test to confirm non-existence of multicollinearity. Table A1 in Appendix shows the results. The VIF scores are below the critical threshold of 10, showing that there is no significant multicollinearity problem.

4.2 Regression results

Table 3 provides the results of the multivariate HLM analyses. The findings show that there is a negative and significant relationship between CGS (−0.014, $p < 0.05$), ES (−0.015, $p < 0.01$) and ROA. Although it is insignificant, there is also a negative relationship between SS (−0.007, $p > 0.10$) and ROA. These results do not support our first hypothesis (*H1*) for the emerging markets. Firms with better SP have lower ROA. A potential explanation for the inverse relationship is that sustainability practices involve long-term vision that may have a negative impact on short-term. Firms that prioritize sustainability are willing to accept lower short-term profits in exchange for long-term benefits, such as reduced environmental impact and enhanced brand reputation. This focus may temporarily affect ROA but can have positive effects over time. This result confirms the findings of some prior studies (Duque-Grisales and Aguilera-Caracuel, 2019; Rahi *et al.*, 2022; Velte, 2017), while it contradicts the findings of some others (Ameer and Othman, 2012; Friede *et al.*, 2015; Lu and Khan, 2023).

The results for the effect of COVID-19 on FP show that the pandemic had a negative and insignificant effect on ROA in all models, partially supporting our second hypothesis (*H2*). Although it is insignificant, the negative relationship shows that companies domiciled in emerging markets where the effects of the pandemic were more heavily felt experienced a

Table 2. Descriptive statistics and correlation matrix

Variables		Mean	S.D.	1	2	3	4	5	6	7	8	9
1.ROA	Firm profitability	6.48	8.04	1.00								
2.CGS	Corporate governance score	54.64	21.01	0.02	1.00							
3.ES	Environment score	51.13	24.43	0.02	0.32*	1.00						
4.SS	Social score	56.18	23.74	0.09*	0.37*	0.69*	1.00					
5.Covid19	COVID-19 pandemic	0.40	0.49	−0.01	0.08*	0.17*	0.15*	1.00				
6.FSIZE	Firm size	15.17	1.44	0.26*	0.14*	0.30*	0.21*	−0.01	1.00			
7.FLEV	Financial leverage	0.54	0.20	−0.24*	0.09*	0.07*	0.02	0.05*	−0.11*	1.00		
8.Industry	Industry	5.69	2.76	−0.01	0.04*	0.05*	0.00	0.00	−0.06*	−0.17*	1	
9.GDP	GDP growth rate	2.70	4.11	0.11*	−0.01	−0.02	−0.12*	−0.25*	0.15*	−0.03*	0.02	1.00

Notes: *$p < 0.05$; $n = 5{,}455$
Source: Created by authors

Table 3. Panel regression results (hierarchical linear modelling)

Variables	Variable name	Model 1	Model 2	Model 3
Corporate governance score	CGS	−0.014 (0.006)*		
Environment score	ES		−0.015 (0.006)**	
Social score	SS			−0.007 (0.006)
COVID-19 pandemic	Covid19	−0.230 (0.502)	−0.229 (0.466)	−0.151 (0.501)
Interaction term	Covid19* CGS	0.017 (0.007)*		
Interaction term	Covid19* ES		0.017 (0.007)**	
Interaction term	Covid19* SS			0.015 (0.007)*
Firm size	FSIZE	2.264 (0.114)**	2.283 (0.116)**	2.258 (0.115)**
Financial leverage	FLEV	−13.862 (0.736)**	−13.771 (0.738)**	−13.899 (0.735)**
Industry Dummies		*Included*	*Included*	*Included*
GDP growth rate	GDP	0.298 (0.022)**	0.294 (0.022)**	0.297 (0.022) **
Constant		−21.868 (3.081)**	−22.768 (3.161)**	
Observations		5,421	5,421	
Number of firms		1,086	1,086	1,086
Number of clusters		6	6	6
Wald chi2		1,177.78**	1,181.05**	1,174.50**
ICC (Level 3, cluster)	$rho_{cluster}$	0.420 (0.185)	0.440 (0.184)	0.430 (0.184)
ICC (Level 2, firm within cluster)	rho_{firm}	0.511 (0.157)	0.520 (0.159)	0.518 (0.157)
AIC		35,375.21	35,372.15	35,377.73
BIC		35,460.99	35,457.93	35,463.5

Notes: REML, linear trend model with random intercepts and slopes. Standard errors are in parentheses. *$p < 0.05$; **$p < 0.01$
Source: Created by authors

decline in FP. This may stem from the significant damage caused to firms by the crisis, restricting their ability to carry out normal operations and generate profit.

We further tested whether SP moderates the relationship between COVID-19 and FP during the pandemic. The interaction terms Covid19*CGS (0.017, $p < 0.05$), Covid19*ES (0.017, $p < 0.01$) and Covid19*SS (0.015, $p < 0.05$) have a significant and positive effect on ROA. These results support our third hypothesis (*H3*). The findings indicate that the marginal effect of each sustainability pillar, i.e. environment, social and governance, positively moderated the relationship between COVID-19 and FP, implying that sustainable firms experienced a lower decline in profitability and SP provided an insurance-like protection in emerging markets. The results also suggest that firms that pursued socially and environmentally responsible activities generated better financial benefits, and there is not a strong trade-off of resources between SP and FP. Thus, ESG practices have the potential to ameliorate the negative financial effects of the crisis. These findings are in line with the results of the prior studies (Amosh and Khatib, 2023a; Bose *et al.*, 2022; Gregory, 2022; Kaakeh and Gokmenoglu, 2022; Lu *et al.*, 2022).

With regard to the control variables, FSIZE has a positive and significant effect, while FLEV has a negative and significant effect on ROA in all models. This is not surprising, as large firms have more funding resources to engage in ESG activities, and higher capital, a larger customer base and a stronger commercial relationship allow them to deal with global crises such as COVID-19. This result conforms to the findings of the prior studies (Amosh and Khatib, 2023a; Drempetic *et al.*, 2020; Kaakeh and Gokmenoglu, 2022; Lu *et al.*, 2022; Panagiotopoulos, 2021). Small firms need to get external support to carry out ESG activities to facilitate the economic recovery following the pandemic. On the other hand, firms that have high financial leverage experienced lower FP during the pandemic. In other words, high leverage threatened the payment ability of firms during the pandemic. Finally, the country-level

control variable GDP has a statistically significant and positive effect on ROA in all models. High GDP growth rate indicates a more prosperous consumer base that can positively impact the revenues of firms, potentially leading to higher ROA. This result is in line with the findings of Diaye *et al.* (2022).

Table 3 also presents the intraclass correlation (ICC) values. These values quantify the proportion of unexplained variation in the model that is associated with the grouping variable, as opposed to the total unexplained variance, encompassing both within-group and between-group variances. In Model 1, the ICC for the FP within the same cluster amounts to 42% (rho cluster). Conversely, the ICC for the FP within the same firm of a specific cluster is 51% (rho firm|cluster). In Model 2, the ICC for the FP within the same cluster amounts to 44%. Conversely, the ICC for the FP within the same firm of a specific cluster is 52%. In Model 3, the ICC for the FP within the same cluster amounts to 43%. Conversely, the ICC for the FP within the same firm of a specific cluster is 51.8%. These high ICC values for all models indicate high similarity between values from the same group.

Following the multivariate HLM analyses, we implemented the marginal effects approach that depicts the nature of a main effect in the presence of a moderator. Busenbark *et al.* (2022) indicate that parameter estimates from the model in isolation are incomprehensive, but whether the relationship between the independent and dependent variable is substantively different at high and low values of the moderator provides appropriate and consistent insight as to the moderating effect. Figure 2 presents the marginal effects that provide an indication of the relationship between the independent (Covid19) and dependent variable (ROA) over different values of the moderator (SP). As depicted in Figure 2, during COVID-19, companies with high SP have shown higher profitability.

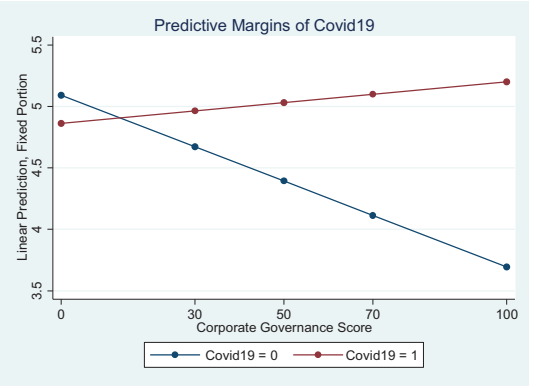
Table 4 reports the results of the OLS regression analysis for the effects of COVID-19 on FP and the moderating effect of SP. There is a positive and significant association between COVID-19 and FP, contradicting the results of the HLM model given in Table 3. Similarly, the interaction terms, Covid19*CGS, Covid19*ES and Covid19*SS, have a positive but statistically insignificant effect on ROA. These findings also contradict the results of the HLM model in Table 3 for the interaction terms.

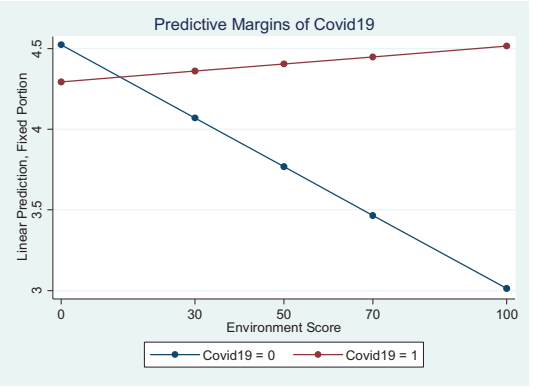
These inconsistent results can be explained as follows. The OLS assumes a uniform relationship between COVID-19 and FP across all countries, whereas HLM considers that this relationship can differ. The HLM analysis provides a more comprehensive and precise estimation of the influence of COVID-19 on the FP. Countries differ on a wide range of attributes that may influence corporate performance. The use of HLM provides an additional contribution to the prior studies. The HLM estimates more precisely and reliably the relative relevance of the country effects. Many prior studies that discuss the relationship between the COVID-19 pandemic and FP have ignored multilevel issues. The results indicate that country effect is an important component in understanding firm performance in an international setting.

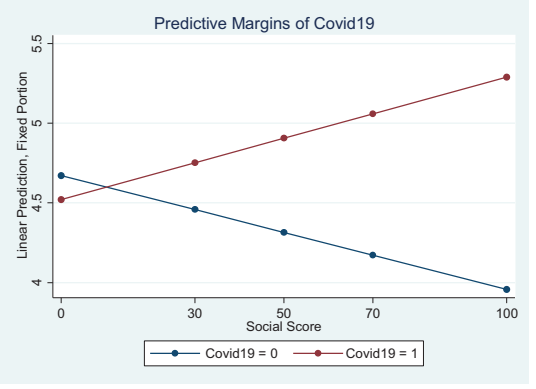
Asian countries that are the neighbours of China, such as Taiwan and South Korea, effectively managed the COVID-19 pandemic by implementing strong measures (Tabish, 2020). In the aftermath of the SARS outbreak in Taiwan and the MERS outbreak in South Korea, these countries upgraded their public health system to become better prepared for a future pandemic (Lee, 2021). From those experiences, these countries learned lessons and were quick to adopt measures during the COVID-19 pandemic. Contrarily, many European countries did not treat the pandemic seriously and refrained from implementing significant actions (Baniamin *et al.*, 2020).

5. Discussion

Prior to presenting the conclusions, implications and limitations, it is prudent to conduct a comprehensive evaluation of the findings. This research provides additional evidence that







Source: Created by author

Figure 2. Marginal effects: predictive margins of COVID-19

Table 4. Panel regression results (OLS)

Variables	Variable name	Model 1	Model 2	Model 3
Corporate governance score	CGS	−0.020 (0.008)**		
Environment score	ES		−0.002 (0.009)	
Social score	SS			0.000 (0.012)
COVID-19 pandemic	Covid19	1.035 (0.478)*	1.437 (0.451)**	0.926 (0.512)
Interaction term	Covid19* CGS	0.014 (0.007)		
Interaction term	Covid19* ES		0.005 (0.007)	
Interaction term	Covid19* SS			0.012 (0.007)
Firm size	FSIZE	4.101 (0.205)**	4.092 (0.207)**	4.103 (0.450)**
Financial leverage	FLEV	−19.745 (1.229)**	−19.688 (1.231)**	−19.696 (2.650)**
Industry dummies				
GDP growth rate	GDP	0.155 (0.037)**	0.156 (0.037)**	0.161 (0.047)**
Constant		−45.121 (3.383)**	−45.996 (3.399)**	−46.239 (7.380)**
Observations		5,421	5,421	5,421
Number of firms		1,086	1,086	1,086
R-squared		0.132	0.132	0.132
F-test (*p value*)		0.000	0.000	0.000
AIC		32,168.22	32,176.57	32,172.94
BIC		32,234.2	32,242.55	32,238.92

Notes: Standard errors are in parentheses. *$p < 0.05$; **$p < 0.01$
Source: Created by authors

the SP of companies in emerging markets presents an opportunity for firms that seek to improve their financial performance, particularly during emergencies like COVID-19. In this sense, firms should validate their actions for stakeholders that have diverse expectations in a society that is conscious of social and environmental matters by going beyond short-term profitability towards environmental and social sustainability. This sentiment leads emerging market firms to closely monitor their achievement in meeting the SDGs through the shared value and the employment of a more inclusive approach as a source of competition.

This progress is particularly important in emerging markets where the pandemic more severely disrupted the economic stability, the lives of people and the performance of firms. This challenging situation has pushed emerging market firms to make a real commitment to include sustainability practices and SDGs in all spheres of actions, incorporating them into their strategies. In this respect, as suggested by Cosenz *et al.* (2020), firms should structure a business model to achieve both sustainability and viability by considering the expectations and the changing needs of stakeholders, effectively managing strategic resources and providing dynamic value propositions for the economic, social and environmental well-being of society. In this context, emerging market firms that harmonize the divergent interests of stakeholders with a high level of ESG orientation contribute to boosting financial performance and the long-term prosperity of the entities.

The findings also suggest that companies implementing sustainability strategies should cultivate distinct capabilities to enhance their readiness in addressing upcoming sustainability challenges. Beside stakeholder-value orientation, environmental and social performance of a firm is a valuable resource that may be conducive to expanding financial performance and realizing environmental protection, social welfare and firm competitiveness. Building on this fact, SP supported by stakeholder theory and resource-based theory and aligned with the SDGs would pave the way to have a positive impact on financial performance. This

endeavour necessitates the development of a resilient planning approach to address the vulnerabilities posed by emergencies, coupled with learning systems that generate the capacity to mitigate such challenges. It is also necessary for stakeholders to financially reward firms that follow sustainability practices to further motivate their efforts during crises.

Building on these discussions, this study lends support to both the outside-in stakeholder perspective and the inside-out resource-based view. The outside-in perspective suggests that financial performance is enhanced by a firm's ability to respond to the external environment by exceeding stakeholder expectations, while the inside-out perspective posits that companies can develop strategic resources and capabilities around social and environmental initiatives, thereby enjoying increased efficiency and strengthening their competitive advantages.

Finally, SP can serve to the benefit of the SDGs amid a pandemic by integrating social and environmental strategies into sustainable development planning. In this respect, cooperation between policymakers and companies can build meaningful partnerships and construct disaster-resistant and sustainable settlements, overcoming challenges for emerging market firms. Thus, our results hold significance for policymakers responsible for overseeing ESG disclosure and practices, investors seeking to bolster sustainable investment approaches and firms dedicated to enhancing their ESG commitments.

6. Conclusions and implications

This study offers new evidence for the impact of the COVID-19 pandemic on FP and examines the moderating role of SP during the pandemic using a sample of 1,091 firms from 25 emerging markets. The findings show that the COVID-19 pandemic negatively affected FP and restricted the ability of firms to achieve strong financial performance. On the other hand, the results indicate that firms with strong ESG performance and embedded sustainability strategies core to their business model are more resilient and achieved better financial performance in emerging markets during the pandemic. This result does not differentiate when we split sustainability into its dimensions, i.e. environment, social and governance. Hence, the SP of emerging market firms attenuates the severe negative impact of COVID-19 on deviations in FP.

These findings confirm that financial performance became more responsive to SP during the pandemic, implying that ESG practices should continue in times of crises as they are financially rewarding and create an encouragement on the path to recovery for firms. In this sense, it is reasonable to anticipate that over time, the cost of ESG efforts would progressively decline and their benefits will persist, as this is the case in developed markets. By enhancing SP, companies can better manage the impacts of the crisis, gain a competitive advantage, foster stronger stakeholder relationships and instil greater confidence in the business. Thus, sustainable firms in emerging markets are expected to be more likely to overcome pandemic-induced obstacles and will be supported by the stakeholders.

The results suggest that increased investment in SP could stimulate the FP of firms in emerging markets, revealing a robust relationship between SP and FP during periods of global upheaval and its importance for the SDGs. The models examined in this study show that enhanced ESG practices could bolster financial performance during times of economic distress and strengthen the relationship between firms and stakeholders. We believe that better signalling on SP could reduce information asymmetries and change the perception of stakeholders with regard to the financial viability of firms as an additive value. Finally, large companies with greater resources tend to exhibit higher profitability than small ones.

6.1 Implications of the study

This study carries various ramifications for companies, policymakers and academia. The results encourage firms in emerging markets to allocate more resources to sustainability

investment to experience the favourable marginal benefits of ESG practices on FP in the long run. A well-crafted and executed sustainability strategy can help a firm enhance its legitimacy, reduce financial cost sensitivity among stakeholders and gain a competitive advantage over other companies. Since the perceptions of stakeholders influence their behaviour and trust, firms that pursue an effective sustainability strategy will improve their relationship with stakeholders, and this will be financially beneficial for these entities. As the frequency of pandemic crises like COVID-19 increases, there will be more external pressures on companies from social and environment angles in the future. Thus, firms should be proactive, devote more resources to sustainability matters to be resilient during the inevitable future crises and increase their ESG disclosures. The results also confirm the assertions of prior studies (Albuquerque *et al.*, 2019; Yahya, 2023) that the ESG practices of firms are a product differentiation strategy capable of delivering improved financial performance.

The findings also have implications for policymakers. The regulators should seriously focus on structuring special policies that encourage firms to enhance SP and the quality of sustainability reporting. They may work towards standardization and unification of sustainability disclosure formats to enable reliable comparisons to significantly enhance the SP of firms. They should also provide large-size stimulus packages to boost economies and offset the effects of the crisis during the post-pandemic period. Moreover, the cost of implementing and monitoring environmental laws should be reduced to motivate firms to adapt sustainability practices. This approach would also enhance the confidence of stakeholders in the policies of the ESG-conscious firms.

Finally, this study advances the existing literature in this field by providing empirical evidence demonstrating the remedial function of SP during the global pandemic conditions and its importance for the SDGs. Crisis resilience is highly relevant post-COVID-19 and amid all challenging circumstances facing firms, both in emerging and developed markets. In this regard, the study provides valuable insights for academicians on the relationship of SP and FP, offering a practical example for teaching purposes.

6.2 Limitations and future research

We ought to bring attention to limitations and underscore potential directions for future research. First, many countries are still suffering the side effects of the pandemic. Thus, a more complete picture could emerge with data over a more extended period to validate our findings. Second, ESG scores that we use in this study may not be homogeneous since inconsistencies may exist across the firms that report SP on a dimensional basis. Ultimately, different industries may exhibit distinct levels of susceptibility to pandemic crises. Future research could delve into industry-specific exploration to yield more nuanced findings.

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Appendix

Table A1. VIF scores

Variable	VIF	1/VIF	Variable	VIF	1/VIF	Variable	VIF	1/VIF
GDP	1.10	0.91	FSIZE	1.17	0.85	GDP	1.12	0.90
Covid19	1.08	0.93	ES	1.17	0.86	FSIZE	1.11	0.90
FSIZE	1.08	0.93	Covid19	1.10	0.91	SS	1.10	0.91
FLEV	1.07	0.94	GDP	1.10	0.91	Covid19	1.09	0.92
Industry	1.05	0.95	FLEV	1.07	0.93	FLEV	1.06	0.95
CGS	1.05	0.96	Industry	1.05	0.95	Industry	1.04	0.96
Mean VIF	1.07		Mean VIF	1.11		Mean VIF	1.09	

Source: Created by authors

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