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RESEARCH PAPER

Social Innovation and the Financial Risk of EMNCs - The Contingent Role of Institutional Legitimacy

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Abstract

This paper examines the influence of social innovation on financial risk of emerging economy multinational corporations (EMNCs). Traditionally, research has focussed on Western MNCs' and their financial performance implications. However, the growing involvement of EMNCs in social innovation—albeit in environments characterized by institutional voids—and its effects on financial risk necessitate an in-depth examination. Drawing on *stakeholder theory*, we explored how EMNCs balance their social innovation initiatives with financial risks. To this end, we first examine how social innovation reduces the financial risk of EMNCs. Second, we examine the association between *excessive social innovation* and EMNCs' financial risk. In addition, borrowing insights from institutional theory, we assess the role played by institutional legitimacy in this process, acknowledging institutional legitimacy's potential to mitigate the financial risks associated with social innovation in emerging economies. We test our hypotheses based on data drawn from 90 EMNCs in 14 emerging economies, applying a panel regression model with robust standard errors and a rigorous robustness propensity score matching test. Our findings show that social innovation reduces EMNC financial risk, and challenge the assertions made regarding the potential negative implications of excessive social innovation on financial risk. Our results also demonstrate the intricate moderating effects of institutional legitimacy in balancing social innovation, excessive social innovation, and EMNC financial risk. Finally, we proffer critical implications for managers and policymakers in emerging economies.

Keywords Social innovation · Financial risk · Institutional legitimacy · EMNCs

Extended author information available on the last page of the article

1 Introduction

Over the last decade, social innovation—which is defined as a "*novel solution to a social problem that is more effective, efficient, sustainable, or just than existing solutions and for which the value created accrues primarily to society as a whole rather than private individuals*" (Phills et al. 2008, p. 39)—has gained momentum, mainly spurred by the increasing interest in social issues that has emerged in the management, entrepreneurship, and public management literatures (Adomako & Tran, 2022). While, traditionally, multi-national companies (MNCs) have been primarily driven by profit (Lind et al., 2022), increasing attention has been directed towards their potential for meaningful global social impact. This potential is realized through social innovation—i.e., the development and implementation of novel strategies, concepts, ideas, and organizations aimed at meeting social needs and creating new social relationships or collaborations (Lee et al., 2019). This line of research stems from the belief that MNCs—with their global presence, considerable resources, and extensive influence—are uniquely positioned to foster social innovation (Cacciolatti et al., 2020) and to contribute to the solution of complex social problems such as poverty, climate change, health inequalities, and inadequate education systems, among others (Steinfield & Holt, 2019).

Due to their historical precedence and prominence, Western MNCs have had a longer history of fostering social innovation, which has resulted in more research being conducted into their practices and impacts (Sinkovics et al., 2014). This has caused research on the social innovation stemming from emerging economies MNCs (hereafter EMNCs[1]) to remain in its infancy stage (Agostini et al., 2017; Dionisio & de Vargas, 2020; Rao-Nicholson et al., 2017). Western MNCs are known globally for their footprints in social innovation (Mortazavi et al., 2021) resulting from favourable institutional policies. Conversely, EMNCs operate in environments characterized by institutional voids—including weaker regulatory systems, less-developed infrastructure, and limited access to resources (Li & Oh, 2016). However, EMNCs can foster the socio-economic development of their host nations by devising and implementing innovative solutions aligned with local needs and constraints (George et al., 2012). For instance, Adomako et al. (2023) found evidence that EMNCs invest in frugal product innovation[2] to address grand challenges—thus having global impacts. Despite the considerable barriers they face, EMNCs are exhibiting a growing propensity to engage in and manifest social innovation (Morais-da-Silva et al., 2020; Rao-Nicholson et al., 2017). Yet, the literature remains silent, underscoring the multifaceted implications of social innovation, particularly in the context of emerging markets, in elucidating its consequences to EMNCs.

EMNCs invest in social innovation projects aimed at addressing poverty, lack of access to education or healthcare, or environmental degradation; this, in turn, can lead to increased social and political stability and more favourable business environments (George et al., 2012); this would enable EMNCs to address local challenges and to

[1] EMNCs refer to the firms originated and headquartered in emerging economies.

[2] Frugal innovation refers to the creation of products that, in response to significant resource limitations, offer substantial cost benefits over current alternatives. (Adomako et al., 2023).

differentiate themselves in the global market by offering solutions tailored to local contexts (Kolk & Lenfant, 2010). For instance, when making purchasing decisions, customers may consider a company's social and environmental impacts and will often be willing to pay a premium for the products and services of socially responsible companies (Chatzopoulou & de Kiewiet, 2021). This positioning can enhance the reputation and brand equity of EMNCs; this is essential, given that consumers are increasingly prioritizing companies that are aligned with their social and environmental values (Karnani, 2007). As social innovation is beneficial for the achievement of cost-leadership and operational efficiency (Wittmayer et al., 2022), navigating risks—such as regulatory or reputational ones (Dionisio & de Vargas, 2020)—and for the enhancement of financial performance (Waddock & Graves, 1997). Understanding and maintaining proximity with local markets bestows an inherent advantage in driving social innovation—which makes it a strategic imperative for EMNC growth and global competitiveness (Ramamurti, 2012). By leveraging social innovation, EMNCs contribute to societal betterment and carve a competitive niche, ensuring their own long-term global resilience and success.

However, investing in social innovation requires substantial allocations of resources (Rajagopal, 2002; Massetti, 2012; Larsson & Brandsen, 2016). This poses a dilemma for EMNCs, as any commitment to social innovation can sometimes strain their limited resources, potentially compromising their financial stability and rendering them vulnerable in volatile markets (Sanchez & Ricart, 2010). While some scholarly work underscores the merits of the social innovation in which EMNCs engage to create economic value (Karnani, 2007; George et al., 2012), a tangible gap persists regarding the delineation of the relationship between social innovation and its associated financial risk. While scholarly contributions have ventured into discussions pertaining to the financial performance of MNCs, and mapping the notable differences between EMNCs and their developed counterparts (Dionisio & de Vargas, 2020; Coelho et al., 2023); a pronounced gap remains in understanding the nuanced relationship between investing in social innovation and the associated financial risk, especially in the emerging market context. Scholars have generally ignored that financial performance and risk are multifaceted and mutually distinct (Ayton et al., 2022). Hence, we acknowledged these limitations and addressed the following pressing research question: *to what extent does social innovation influence EMNC financial risk?*[3]

Prior studies on innovation and its outcomes have also indicated non-linear relationships. For example, Belderbos et al. (2010) found an inverted U-shaped relationship between open innovation and financial performance, whereas Chen et al. (2018) reported a U-shaped relationship between CSR (a form of social innovation) and financial performance, thus indicating the possibility that a U-shaped relationship may arise between social innovation and EMNC financial risk. This is due to the fact that, while social innovation is generally beneficial (Lind et al., 2022), the allocation of excessive resources to social innovation may divert critical funds away from essential business operations, potentially leading to negative impacts on EMNC financial performance. There is a potential risk of misalignment between a firm's

[3] Financial risk encompasses default, portfolio, and leverage risk (Bekaert et al., 2007).

social innovation initiatives and its business objectives. This may lead to inefficiencies, confusion, and a potential loss of focus on the company's primary commercial goals (Fougère & Meriläinen, 2021). For example, socially innovative products may not generate the expected return on investment if the consumers are price-sensitive and unwilling to pay a premium (Erixon, 2011). Hence, the interplay between excessive social innovation and financial risk may not be linear, and the consequences of excessive social innovation may put EMNCs at severe financial risk and cause fatal outcomes, potentially indicating a U-shaped relationship. However, there is a dearth of knowledge in regard to such a complex relationship; therefore, to fill this critical research gap, we addressed a second research question: *to what extent does excessive social innovation influence EMNC financial risk?*

Although EMNCs need to commit to social innovation, a pivotal consideration must be given to the institutional context, which plays an integral role in shaping MNC activities (Boso et al., 2023). This logic is because, should institutional infrastructures not support social innovation, EMNCs are more likely to struggle to effectively implement and sustain the related initiatives (Peng et al., 2009). Institutional legitimacy emerges as a paramount factor in this equation, serving as a conduit to instil trust and augment the credibility of MNCs amid diverse stakeholders, including the general public and government entities (Adams, 2018; Wright et al., 2005). Within a legitimate institution, MNCs are more likely to operate effectively and garner support (Meyer et al., 2009). This can include being seen as compliant with laws and regulations, transparent and accountable, and to be engaging in meaningful stakeholder consultation (Hough et al., 2010). When EMNCs are endowed with high levels of institutional legitimacy, they can establish themselves as socially responsible actors in their local communities; this, in turn, can help them to mitigate the associated risks found in emerging economies (Kostova & Marano, 2019). Conversely, at low levels of institutional legitimacy, the struggle faced by EMNCs in fostering social innovation may increase significantly due to the liabilities linked to doing business in those economies (Kotabe & Kothari, 2016; Kothari et al., 2013).

This is particularly relevant in contexts with institutional environments characterized by volatility and a lack of established norms and standards, which amplify the susceptibility of EMNCs to institutional pressures (Xu & Shenkar, 2002). Unfortunately, the exploration of the interaction between institutional legitimacy and social innovation within emerging economies has hitherto only been sporadically addressed in the literature, elucidating a conspicuous research gap (Onsongo, 2019; Turker & Vural, 2017; Cuervo-Cazurra & Genc, 2008). Our study was thus aimed at addressing this gap by delving into the intricate dynamics that characterise the relationship between institutional legitimacy and its multifaceted financial risks. A concerted exploration into such dynamics is paramount in regard to formulating coherent insights into the variances found in the trajectories of the social innovations deployed by EMNCs and the subsequent implications on their financial sustainability and risk mitigation strategies (Marano et al., 2017). Therefore, we also sought to answer a third research question: *how does institutional legitimacy influence the relationship between social innovation and EMNC financial risk*?

By combining stakeholder and institutional theories, we proposed the trio of social innovation, institutional legitimacy, and financial risk. The rationale underpin-

ning the use of both theories lies in their complementary nature: while stakeholder theory underscores the importance of considering and addressing the needs and expectations of various stakeholders—including employees, customers, and society at large—by fostering social innovation and responsibility (de Souza João-Roland & Granados, 2023; Phills et al., 2008), institutional theory provides a framework suited to understand how organizations are shaped by the broader socio-political and economic contexts in which they operate (Kostova & Marano, 2019; Scott, 2008). This dual perspective was vital to proposing the aforementioned trio because, while stakeholder theory elucidates the 'who' and 'why' pertaining to social innovation initiatives—focussing on the interactions and expectations of various stakeholder groups—institutional theory addresses the 'how', explaining how the broader institutional context shapes and constrains the actions and choices of EMNCs (Scott, 2008). For instance, recent research focussed on the social innovation (i.e., CSR) in which MNEs engage has demonstrated the complementarity between stakeholder and institutional theories as they concentrate on the pressures and influence exerted by each stakeholder on MNE operations and activities (Figueira et al., 2023). As institutional theory holds, MNEs need to conform to the rules and requirements of their social environments to be perceived as legitimate organizations (Rosenzweig & Singh, 1991; Westney, 1993). Together, these theories provide a comprehensive framework suited to understand micro-level stakeholder dynamics and macro-level institutional influences on EMNCs.

Our study makes three key contributions to the literature. First, it draws on stakeholder theory (Friedman & Miles, 2002; Parmar et al., 2010), which defines the obligations held by MNCs towards multiple stakeholders—including shareholders, customers, employees, and the wider community (Lind et al., 2022). Following this logic, our study advances the body of knowledge by articulating that fostering and exhibiting social innovation reduces EMNC financial risk. As such, it contributes to the social innovation literature in the emerging economy context. Second, the literature based on stakeholder theory highlights a conflict of interests between MNC owners (i.e., the principals) and managers (i.e., the actors) and how the latter's actions can sometimes be motivated by their own self-interest, rather than by those of the MNC owners (Mudambi & Pedersen, 2007). In this logic, MNC top management may be motivated to pursue excessive social innovation in order to gain recognition, rewards, or other personal benefits, rather than to maximize the value of the organisation (Larsson & Brandsen, 2016). However, we did not find support for such behaviours, closing the gap by highlighting that higher levels of social innovation further minimise EMNC financial risk. These relationships are moderated by institutional legitimacy, which is linked to our study's third contribution to institutional theory (Kostova & Marano, 2019). We noted that, in the presence of high levels of institutional legitimacy, social innovation enables EMNCs to minimise their financial risk. Legitimate emerging economy institutions can help to balance the interests of different stakeholders and promote sustainable and socially responsible business practices (Chen et al., 2016), therefore reducing the financial risks associated with social innovation for EMNCs. Our theorisation enables an understanding of the intersection of stakeholder expectations and institutional norms. It can reveal how EMNCs balance local stakeholder demands with institutional pressures, providing insights into the complexi-

ties involved in managing social innovation in diverse contexts (Jamali, 2010). This integrated approach also enables a nuanced understanding of how EMNCs navigate the institutional voids found in emerging markets while simultaneously addressing the needs and expectations of various stakeholders, thus contributing to theories of international business in emerging markets, both in innovation and institution (Larsson & Brandsen, 2016; Peng et al., 2009; Jamali & Mirshak, 2007).

The rest of the paper is structured as follows. First, it provides our study's theoretical background and articulates our hypotheses. Subsequently, it presents an overview of our data and our findings. Finally, it engages in a thorough discussion of our results, highlighting the contributions and limitations of our study and proposing valuable directions for future research.

2 Theory and Hypotheses Development

2.1 Stakeholder Theory and Social Innovation

MNCs answer to a broad array of stakeholders that goes beyond just shareholders (Andriof et al., 2017) to include employees, customers, suppliers, society at large, and the environment, among others. This broad view of corporate responsibility has profound implications for how MNCs operate and make strategic decisions, including those pertaining to innovation (Ozdemir et al., 2023). For MNCs, innovation is a critical driver of competitive advantage and long-term success (Bocken & Geradts, 2020; Mostafiz et al., 2023a). Traditionally, the focus of innovation has primarily been on meeting the needs of customers and creating value for shareholders (Kiessling et al., 2021; Mostafiz et al., 2023b). However, in light of stakeholder theory, companies are increasingly recognizing that innovation can and should also address the needs and interests of other stakeholders (Dionisio & de Vargas, 2020). This perspective can lead to a broader, more inclusive approach to innovation by MNCs, one that is often referred to as 'responsible' or 'social' innovation. Hence, the expanded view of corporate responsibilities naturally extends to the innovation processes found within MNCs, encouraging them to engage in forms of innovation that transcend the mere creation of economic value and address wider societal and environmental challenges—the essence of social innovation.

Stemming from stakeholder theory, social innovation can be understood as a participatory and inclusive process that involves diverse sets of stakeholders (de Souza João-Roland & Granados, 2023; Phills et al., 2008). As such, it contributes unique perspectives, knowledge, and resources, fostering the development of innovative solutions that address social issues and, therefore, benefit a broader range of constituencies (Westley & Antadze, 2010). For instance, employees, as internal stakeholders, can be engaged in an MNC's social innovation initiatives, leveraging their insights, skills, and commitment to develop solutions that address social needs (Altuna et al., 2015). Similarly, customers—another vital stakeholder group—can offer valuable input based on their experiences and preferences, helping the firm to design products or services that meet societal needs and expectations (Voorberg et al., 2015). These multi-stakeholder perspectives naturally extend to the realm of social innovation,

pushing MNCs towards the development and implementation of novel solutions that serve wider societal and environmental purposes.

Among the environmental, social, and governance (ESG) dimensions, the social innovation of MNCs is underpinned by social pillars, product responsibility, and CSR strategies (Aevoae et al., 2022; Apergis et al., 2022; Lind et al., 2022). Duque-Grisales and Aguilera-Caracuel (2021) suggested that EMNCs can enhance their capacity to manage and respond to various social issues through stakeholder-oriented social innovation in order to become social pillars. For instance, the recognition of employees, communities, and society at large as critical stakeholders (Goodstein & Wicks, 2007) may propel EMNCs to innovate in ways that address social concerns. Such initiatives, which range from improved labour practices to community development programmes, all contribute to superior social pillar scores. Concerning product responsibility, an EMNC's commitment to the ethicality, quality, and safety of its products or services can be improved by leveraging stakeholder expectations (Singh et al., 2023). For instance, by recognizing customers as pivotal stakeholders and focussing on their needs and well-being, EMNCs can innovate in relation to enhancing product safety, quality, and ethical standards, thus boosting product responsibility (Harrison & Wicks, 2013). Regarding CSR strategies, stakeholder theory indicates that EMNCs should aim for a diverse array of objectives that go beyond just generating profits. This theory advocates for EMNCs to be driven to embed CSR within their strategic planning and innovation workflows (Waheed & Zhang, 2022). This integration can manifest itself in terms of eco-friendly product development, the implementation of sustainable business practices, or investments in social initiatives, thereby elevating the CSR strategies of EMNCs (Samy et al., 2010).

In essence, stakeholder theory presents a comprehensive framework suited to drive the social innovation of EMNCs, prompting corporations to consider the well-being of all stakeholders and to address broader societal and environmental challenges (Lind et al., 2022). This approach, in turn, can lead to improved social pillar, product responsibility, and CSR strategy scores, indicating more socially responsible and innovative corporate entities.

2.2 The Relationship Between Social Innovation and EMNC Financial Risk

Financial risk encompasses default, portfolio, and leverage aspects. Default risk pertains to an MNC's ability to repay its debt obligations; as such, it can be particularly heightened for EMNCs, due to potentially unstable cash flows and unpredictable market conditions (Bekaert et al., 2007). Portfolio risk is linked to the diversity and allocation of a company's investments, which may be difficult for EMNCs to manage due to their resource constraints and potential exposure to volatile markets (Elton et al., 1995). Finally, leverage risk, which arises from the degree of debt found within an MNC's capital structure, can compound the threat of financial distress; this is especially the case for EMNCs, which lack the financial resilience of their more established developed world counterparts (Modigliani & Miller, 1958). Hence, the management of these risk aspects is crucial for the financial sustainability of EMNCs.

Prior studies have suggested that social innovation enhances an EMNC's market positioning and competitiveness (Rao-Nicholson et al., 2017). As emerging econ-

omy markets are often hampered by unique social and economic challenges—such as poverty, inequality, and lack of access to essential services—EMNCs can use social innovation to develop products or services that address these issues (London & Hart, 2004). For example, Unilever's 'Shakti' initiative in India—a project that trains rural women to distribute its products in their communities—not only expands the company's distribution network but also empowers women and promotes social development (Prahalad, 2005). Similarly, Nestlé's 'popularly positioned products' strategy, which involves offering nutritious, affordable food products to low-income consumers, has helped the company penetrate new markets and build a strong brand image in various emerging economies (Barki & Parente, 2006). Hence, the idea that, by engaging in social innovation, EMNCs minimise financial risk is not theoretically ambiguous.

Social innovation may represent a unique strategic tool that enables EMNCs to mitigate their financial risks by fostering stable cash flows, providing opportunities for investment diversification, and improving access to capital. By engaging in social innovation, EMNCs can enhance their market positioning and revenue streams, stabilize their cash flows, and reduce their default risk (Sun & Cui, 2014). For instance, EMNCs can innovate by developing products or services that address local social challenges and satisfy unmet market needs (London & Hart, 2004). This approach cannot only enhance competitive advantages of EMNCs but also expand their customer bases and revenue streams, providing them with more predictable and stable cash flows that enable them to meet their debt obligations (Tanrısever et al., 2012). By fostering social innovation, EMNCs can also potentially mitigate their portfolio risk by opening up new investment opportunities that are more resilient to market volatility (White III, Rajwani, & Lawton, 2021). For example, investments in sustainable or socially beneficial projects may be less sensitive to regulatory changes, consumer backlash, or other market risks, thus reducing the overall volatility of a company's investment portfolio (Schramade, 2016). Moreover, by aligning their investment strategies with societal needs and sustainable development goals, EMNCs can attract socially conscious investors, improve their access to capital, and diversify their investor bases, further mitigating their portfolio risk (Clark et al., 2015). Finally, concerning leverage risk, an EMNC's emphasis on social innovation may enhance its reputation and social legitimacy, improving its access to capital and maintaining a more balanced and sustainable capital structure (Manos et al., 2007). For example, those EMNCs that demonstrate a strong commitment to social innovation can build trust and goodwill with various stakeholders—including investors, customers, and governments—thus potentially enhancing their own borrowing capacity, lowering their capital costs, and reducing their reliance on debt financing (Cheng et al., 2014). It is therefore crucial for EMNCs to integrate social innovation into their strategic planning, as this will not only enhance their societal impact but may also contribute to their financial stability and resilience. Hence, we proposed the following baseline hypothesis:

H1. Social innovation will reduce the financial risk of EMNCs.

However, while social innovation initiatives present substantial opportunities for EMNCs, an excessive focus on them can potentially lead to unintended negative consequences, trapping EMNCs in a cycle of diminishing returns and increasing risk (Potter & Watts, 2011). Thus, EMNCs need to strike a balance between their financial objectives and social goals (Maruffi et al., 2013). Excessive social innovation occurs when firms invest too heavily in new and untested business models, products, and services (Larsson & Brandsen, 2016), which may lead to increased uncertainty and financial instability. An overemphasis on social innovation may result in neglecting other crucial aspects of business, such as profitability, efficiency, and risk management (Fougère & Meriläinen, 2021). This may occur due to conflict between principals and agents (Batt, 2018; Maak et al., 2016). Jensen and Meckling (1976) described the relationship between stakeholders and managers concerning corporate decision-making in relation to differing interests and priorities. EMNCs may not always act in their stakeholders' best interests. These problems typically arise when stakeholders seek to maximize their wealth. In contrast, managers may have different objectives, such as reputation enhancement, career advancement, or personal satisfaction in the pursuit of social innovation (Lind et al., 2022). Therefore, an overemphasis on social innovation may lead to resource misallocation, diverting funds from core business activities to social innovation projects (Kolk et al., 2014). Moreover, the pressure to conform to global standards and norms can further drive EMNCs to overemphasise social innovation. Those top managers who potentially perceive social innovation as a means to legitimize their operations and gain acceptance from global stakeholders—such as international investors, customers, or non-governmental organizations (Marquis & Raynard, 2015)—may eventually cause a disconnect between a firm's social innovation efforts and the local context, leading to ineffective or inappropriate initiatives (Campbell, 1970).

Concerning portfolio risk, excessive social innovation may force EMNCs to discontinue some investment opportunities—such as marketing or operational efficiency improvements. Consequently, the overall diversification and allocation of their investments may become suboptimal, increasing the exposure of EMNCs to market volatility and heightening their portfolio risk (Elton et al., 1995). Likewise, when EMNCs overly focus on social innovation, they may allocate a significant portion of their capital to related initiatives, potentially at the expense of other essential corporate functions (Kolk et al., 2014). This may result in reduced profitability and unstable cash flows, making it harder for such firms to meet their debt obligations and increasing their default risk (Bekaert et al., 2007). An overemphasis on social innovation may also lead EMNCs to take on additional debt to finance related projects, which could increase their leverage risk (Gilje, 2016). High levels of such risk can compound the threat of financial distress; this is particularly the case for EMNCs, which may lack the financial resilience of their more established counterparts. By placing too much emphasis on social innovation, EMNCs may inadvertently raise stakeholder expectations in regard to the outcomes of the related initiatives (Crane et al., 2019). If EMNCs fail to deliver on their promises, they may face stakeholder backlash, leading to reputational damage, declining customer trust, and financial losses. Based on these arguments, we posited:

H2. Excessive social innovation will increase the financial risk of EMNCs, therefore indicating a U-shaped relationship between social innovation and EMNC financial risk.

2.3 Institutional Theory and Institutional Legitimacy

Institutional legitimacy—which is a critical concept within the institutional theory framework—is central to the study of EMNCs and of their relationships with various stakeholders (Kostova & Marano, 2019). As defined by Suchman (1995), institutional legitimacy is "*a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions*" (p. 574). This theory posits that organizations are influenced not only by market forces but also by a broad set of institutional pressures originating from their environment (Scott, 2008). In the context of emerging economies, institutional theory can help elucidate how EMNCs seek and maintain institutional legitimacy, which is often measured through metrics such as the state legitimacy score (Riccucci & Saidel, 1997).

Institutional legitimacy pertains to the representativeness and openness of a government and its relationship with its citizenry (Landemore, 2020). As such, it captures the extent to which a government is perceived as legitimate by its citizens in relation to aspects that include its capacity to enforce laws, maintain order, deliver public services, and act in the best interest of society (Gilley, 2006). This has a significant bearing on the overall context within which EMNCs function (Malesky & Taussig, 2017). EMNCs often face significant uncertainty due to factors such as political instability, weak rule of law, and corruption. High degrees of institutional legitimacy, which identify governments that are representative and enjoy the trust of their citizens, often signal more stable and predictable business environments. This stability reduces the risks associated with doing business in these markets, making them more attractive for EMNCs (Meyer et al., 2009). Additionally, when governments are perceived as legitimate, their policies and actions are more likely to be accepted by their citizens. This acceptance extends to EMNCs, which are seen as aligned with government policies or partnering with government institutions (Ahlstrom et al., 2008). In emerging economies with high degrees of institutional legitimacy, government regulations are more likely to be consistently enforced, reducing the ambiguity that EMNCs need to navigate; conversely, in the presence of low degrees of institutional legitimacy, EMNCs may need to invest more resources in understanding the local contexts and managing relationships with various stakeholders in order to operate successfully (Cuervo-Cazurra et al., 2014; Rodriguez et al., 2006).

2.4 The Moderating Role of Institutional Legitimacy

In countries with high degrees of institutional legitimacy, the regulatory environment tends to be more stable, predictable, and supportive of social innovation. Governments that enjoy the trust of their citizens are more likely to enact policies that promote social and environmental sustainability, encourage corporate social respon-

sibility, and provide incentives for EMNCs to innovate in ways that benefit society (Aguilera et al., 2007). As a result, EMNCs may be more inclined to pursue social innovation due to the reduced regulatory risks and the potential for attaining competitive advantage by complying with local norms and standards (Ioannou & Serafeim, 2012). In countries with high degrees of institutional legitimacy, stakeholders—e.g., local communities, employees, customers, and investors—may expect EMNCs to contribute more to social innovation (Marano et al., 2017). This increased stakeholder pressure compels EMNCs to adopt more socially innovative practices in order to enhance their legitimacy and reputation in local markets and maintain and strengthen their relationships with key stakeholders (Brammer et al., 2012). Further, representative and open governments tend to foster vibrant civil societies, including social enterprises and other actors focussed on addressing social challenges (Kourula & Laasonen, 2010). EMNCs can leverage these partnerships to access local knowledge, resources, and networks, enhancing social innovation and ensuring its successful implementation (Dahan et al., 2010; Gatignon, 2022).

EMNCs endowed with high institutional legitimacy often find more predictable and supportive regulatory environments (Boso et al., 2023) that can reduce their default risk. Governments characterised by high institutional legitimacy are more likely to establish policies that promote social and environmental sustainability (Aguilera et al., 2007; Bai et al., 2019); this reduces the risk of sudden regulatory changes that could affect EMNCs' ability to repay their debt obligations. By engaging in social innovation, EMNCs can align their operations with these policies, reducing their default risk and enhancing their reputations and market positions (Ioannou & Serafeim, 2012; Saeed et al., 2022). In addition, EMNCs sometimes struggle to manage their portfolio risk due to volatile market conditions (Kafouros et al., 2023). However, the representative and open nature of governments in countries with high degrees of institutional legitimacy can foster economic stability, making it easier for EMNCs to diversify and manage their investments. Additionally, by engaging in social innovation, EMNCs can demonstrate their commitment to social and environmental sustainability, potentially attracting more stable long-term investment and further reducing portfolio risk (Crifo et al., 2016). Finally, EMNCs may rely heavily on debt both locally and globally (De Beule et al., 2014; Rugman & Nguyen, 2014), thus increasing their vulnerability to fluctuations in interest rates or economic conditions (Demirbag et al., 2010; Luiz & Barnard, 2022). However, in emerging economies endowed with high institutional legitimacy, government policies often promote financial stability and sustainable business practices, reducing leverage risk. Moreover, by engaging in social innovation, EMNCs can enhance their financial resilience by developing new revenue streams, improving operational efficiency, and fostering stakeholder trust (Eccles et al., 2014). By operating in predictable regulatory environments, attracting stable investments, and managing their leverage risk, EMNCs can balance their social innovation efforts and financial objectives, ensuring that they create value for society and shareholders, and thus mitigate their financial risks. Based on these arguments, we proposed a baseline moderating hypothesis:

H3. Institutional legitimacy positively moderates the relationship between EMNC social innovation and financial risk.

In addition, following the same logic of institutional legitimacy, as balancing social innovation efforts and corporate objectives is critical for EMNCs (Fougère & Meriläinen, 2021), high degrees of institutional legitimacy can protect such firms from potential pitfalls. They can serve as a buffer against the potential of excessive social innovation to inadvertently increase financial risk. In the presence of high degrees of institutional legitimacy, EMNCs can navigate context-specific challenges, adapt to political, economic, and social contexts, and leverage institutional arbitrage (Chidlow et al., 2021). For instance, EMNCs can strategically exploit institutional weaknesses as opportunities to create legitimacy and serve social needs, thus reducing the need for excessive social innovation (Koch, 2022). This strategic response to institutional voids may help to mitigate the financial risk associated with the high cost of overcommitment to social innovation (Brook & Pagnanelli, 2014; Cooper & Uzun, 2022).

Faced with high degrees of institutional legitimacy, EMNCs can understand the acceptable boundaries of social innovation, which may prevent them from overextending their resources or straying from their core competencies. In contrast, in environments characterized by low degrees of institutional legitimacy, EMNCs may face significant uncertainty and ambiguity in relation to the acceptability of social innovation practices (Huybrechts & Nicholls, 2013; Mason et al., 2007), which may lead them to overcommit resources to social innovation in an attempt to navigate uncertain regulatory expectations, potentially increasing their default, portfolio, and leverage risks (Bekaert et al., 2007). Low institutional legitimacy can deter stable long-term investors, making it harder for EMNCs to diversify and manage their portfolios, thus potentially leading to higher financial risk. Based on this argument, we proposed:

H4. Institutional legitimacy positively moderates the U-shaped relationship; thus, the relationship between excessive EMNC social innovation and financial risk is weakened when institutional legitimacy is higher.

3 Methodology

3.1 Data Collection and Sample

We procured the data for this research from a variety of sources. Specifically, we leveraged Refinitiv Eikon to obtain information on social innovation and employed S&P Capital IQ to gather firm-level data suited to provide a comprehensive overview of the financial characteristics of EMNCs. To gauge institutional legitimacy, we turned to the Fragile States Index, published by Foreign Policy magazine in collaboration with the Fund for Peace (FFP)[4]. We obtained macroeconomic and institutional quality data from the World Bank's World Development Indicators (WDI) and World Governance Indicators (WGI), respectively.

[4] The data are available at https://fragilestatesindex.org/global-data/.

An initial challenge we encountered pertained to identifying the number of multinational corporations (MNCs) originated from and headquartered in emerging economies. To do so, we commenced with a manual search, which led us to 15 emerging economies: Brazil, China, Chile, Colombia, Hungary, India, Malaysia, Mexico, Pakistan, Philippines, Poland, Russia, South Africa, Thailand, and Turkey. We then narrowed our focus to countries with a minimum of two firms; this caused the exclusion of Thailand, which had only one firm. Subsequently, we compiled a list of MNCs headquartered in 14 countries and searched for their financial firm-level data in S&P Capital IQ, resulting in the identification of 151 firms. Following this, we sought their social innovation data within the Refinitiv Eikon database, which we found to be only available for 101 firms. Furthermore, we also excluded from the sample 11 firms for which at least three consecutive years of financial data were unavailable.

Our final sample, therefore, comprised 90 EMNCs from 14 countries. These corporations represented diverse industries such as communication services, consumer goods, energy, financials, health care, industrials, information technology, materials, real estate, and utilities. In accordance with the available data, we considered the 2010–2021 period for all the measures. A breakdown of our sample is presented in Table 1, showing that China (25.56%), India (16.67%), and Brazil, along with Malaysia (both with 11.11%), contributed the top four largest samples of MNCs for our study.

3.2 Measures

In our study, the primary dependent variable was the financial risk of MNCs. As per the approach outlined by Banna et al. (2021), we used three proxies to represent EMNC financial risk: (i) Default, (ii) Leverage, and (iii) Portfolio Risk. As a measure of default risk, we utilized the z-score[5], which is a commonly cited indicator of financial risk or financial stability (Banna et al., 2021). For simplicity, we defined financial risk as the inverse of stability: the higher an EMNC's financial risk, the lower its stability, and vice versa. To streamline the analysis, we multiplied the log of the z-score by -1. The newly formed variable took a higher value in the presence of greater EMNC financial risk (lower EMNC financial stability). We designated this as Default Risk (DRISK). Moreover, we decomposed the z-score to determine leverage and portfolio risks. We proxied leverage risk (LRISK) and portfolio risk (PRISK) in line with Banna et al. (2021).

The key independent variable of our study was social innovation (SI). Identifying a variable suited to represent the social innovation of MNCs posed a significant challenge. After a thorough scrutiny of the existing literature, we opted to use the social pillar of Environmental, Social, and Governance (ESG) as a proxy. This decision was driven by the notion that the ESG social pillar encapsulates many of

[5] $Z - score_{it} = \frac{ROAA_{it}+EQT_{it}}{\sigma(ROAA)_{it}}$, here, $ROAA_{it}$, EQT_{it} and $\sigma(ROAA)_{it}$ are the return on average assets, the equity to assets ratio, and the standard deviation (σ) of ROAA of bank *'i'* in year '*t*' respectively. To calculate the $\sigma\,(ROAA)$, we considered three-year rolling period windows to allow for the variation in the *z*-score. As the *z*-score was found to be highly skewed, we used its natural logarithm to reduce the skewness. We proxied the leverage and portfolio risks by (-1* (EQT/$\sigma\,(ROAA)$) and (-1* (ROAA/$\sigma\,(ROAA)$), respectively, based on Banna et al. (2021).

Table 1 Sample breakdown

Country	Number of firms	Number of observations	Percentage
Brazil	10	120	11.11%
Chile	3	36	3.33%
China	23	276	25.56%
Colombia	3	36	3.33%
Hungary	2	24	2.22%
India	15	180	16.67%
Malaysia	10	120	11.11%
Mexico	4	48	4.44%
Pakistan	3	36	3.33%
Philippines	3	36	3.33%
Poland	4	48	4.44%
Russia	3	36	3.33%
South Africa	4	48	4.44%
Turkey	3	36	3.33%
Total	90	1080	100%

the defining principles and actions that are synonymous with social innovation. For instance, social innovation entails the conception and execution of novel strategies or products geared towards addressing societal needs and challenges (Bansal et al., 2015). Similarly, the ESG social component encompasses those actions intended to enhance labour standards, foster diversity and inclusion, contribute to community development, and generate positive social impacts (Wettstein et al., 2019). MNCs can showcase their commitment to social innovation by conscientiously tracking and reporting these ESG elements. Therefore, the ESG social pillar was suited to serve as an effective proxy for this crucial aspect of social innovation.

As per Zhou et al. (2020), we quantified institutional legitimacy (IL) by means of the state legitimacy score. Beginning in 2006, Foreign Policy magazine, in partnership with the Fund for Peace, initiated the production of the Fragile States Index (FSI), which is known as a state legitimacy index. This comprehensive index provides data on 12 distinct indicators for 179 countries globally. Furthermore, it furnishes a systematic ranking, illustrating each country's relative vulnerability.

In line with previous studies (e.g., Apergis et al., 2022; Banna et al., 2021; Xiao et al., 2019), we included a range of firm-specific and macroeconomic control variables. To account for potential scale differences, we used firm size (SIZE), as represented by the logarithm of total assets (Xiao et al., 2019). We measured EMNC financial leverage by means of the ratio of total debt to total equity (DE). In addition, we accounted for EMNC solvency using the ratio of total liabilities to total assets (LA). We also incorporated the EMNC current ratio (CR) as a control. Regarding macroeconomic factors, we took into consideration the annual GDP growth (GDPG) and inflation (INF). We implemented the standardised approach involving governance indicators to control for institutional quality (IQ), as detailed in Kaufmann et al. (2010). The World Governance Indicators (WGI) encompass six components: control of corruption, government effectiveness, political stability and absence of violence/terrorism, regulatory quality, rule of law, and voice and accountability. Besides, we also controlled for firm-, industry-, and year-fixed effects.

To test our four hypotheses, we employed a panel regression model with robust standard errors. This approach was intended to address any unobserved heterogeneity and potential correlation between the independent variables and the error term (Xiao et al., 2019). To test the moderating effect of institutional legitimacy on the relationship between social innovation (and excessive social innovation) and EMNC financial risk (H3 and H4), we introduced the interaction terms of social innovation and institutional legitimacy, as well as excessive social innovation and institutional legitimacy, to the model. It is worth noting that 'excessive innovation' refers to the quadratic relationship (social innovation x social innovation) between EMNC financial risk and social innovation. Alternatively, it could be argued that it would assess the presence of a U-shaped relationship between EMNC financial risk and social innovation. We verified the robustness of our results by utilizing an alternative proxy for social innovation and by dividing the sample based on firm size (large vs. small/medium firms). Finally, to mitigate any self-selection bias, we implemented propensity score matching (PSM). This robust methodology enabled our study to yield reliable results regarding the intricate relationships between social innovation, institutional legitimacy, and EMNC financial risk.

4 Results

4.1 Descriptive Statistics and Baseline Regression Results

Table 2 summarises the descriptive statistics and correlation matrices for the variables utilized in our study. To investigate whether multicollinearity could pose a problem in analysing the relationship between social innovation and EMNC financial risk, we performed variance inflation factor (VIF) tests. The correlation matrices for the variables and a VIF value of 2.36 suggested that multicollinearity was unlikely to be a serious issue in our model.

Table 3 presents the baseline results for the relationship between social innovation (and excessive social innovation) and EMNC financial risk. In Models 1, 4, and 7, we included only firm-specific controls, while in Models 2, 3, 5, 6, 8, and 9, we incorporated both firm-specific and macroeconomic controls. In Models 1–3, 4–6, and 7–9, we utilized DRISK, LRISK, and PRISK, respectively, as our dependent variables. Across all models, we found a significant and negative relationship between social innovation (SI) and EMNC financial risk (DRISK and PRISK), indicating that social innovation reduces financial risk, thereby providing support for our first hypothesis (H1). However, while the relationship between LRISK and SI was found to be negative, it was also found to be not statistically significant. For excessive social innovation (SIxSI), we found a negative relationship, implying that even excessive social innovation reduces financial risk, which contradicted our initial expectation of a positive relationship. This quadratic relationship suggests that the relationship between EMNC financial risk and social innovation is not U-shaped. Consequently, our second hypothesis (H2) was found not to be supported.

Table 4 provides the results pertaining to the impact of institutional legitimacy (IL) on the nexus between social innovation (including excessive social innovation) and

Table 2 Descriptive statistics

Variable	Obs	Mean	Std.Dev.	Min	Max
Default Risk (DRISK)	904	-1.808	1.298	-8.098	5.235
Leverage Risk (LRISK)	929	0.733	1.196	-5.143	7.907
Portfolio Risk (PRISK)	895	-1.741	1.292	-8.044	3.205
Social Pillar Score (Social Innovation) (SI)	901	51.917	25.566	0.374	97.713
Institutional Legitimacy (State Legitimacy Score) (IL)	1080	-6.551	1.565	-8.9	-1.8
Log of Total Assets (SIZE)	1043	23.164	1.549	17.803	27.219
Total Debt/Total Equity (DE)	1023	0.709	1.94	-53.704	15.404
Current Ratio (CR)	944	1.652	0.975	0.214	7.848
Total Liabilities/Total Assets (LA)	944	55.922	24.68	10.047	321.374
GDP Growth (GDPG)	1080	4.544	3.777	-9.518	11.668
Inflation (INF)	1080	4.307	3.002	-1.139	19.596
Institutional Quality (IQ)	1080	0	0.818	-1.954	2.492

Variables	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*	*(10)*
(1) DRISK	1.000									
(2) SI	-0.040	1.000								
(3) IL	-0.154*	0.254*	1.000							
(4) SIZE	0.037	0.249*	-0.227*	1.000						
(5) DE	0.000	-0.023	0.005	0.103*	1.000					
(6) CR	-0.045	-0.015	0.033	-0.206*	-0.070*	1.000				
(7) LA	0.194*	0.033	-0.066*	0.098*	0.032	-0.482*	1.000			
(8) GDPG	-0.017	-0.210*	-0.253*	-0.040	-0.077*	0.048	-0.035	1.000		
(9) INF	-0.104*	0.166*	0.146*	-0.130*	0.029	-0.015	-0.002	-0.075*	1.000	
(10) IQ	-0.056	0.086*	0.576*	-0.072*	0.007	0.094*	-0.096*	-0.163*	-0.372*	1.000

Note DRISK, LRISK, PRISK, SI, IL, SIZE, DE, CR, LA, GDPG, INF and IQ refer to default risk, leverage risk, portfolio risk, social innovation, institutional legitimacy, firm size (ln (total assets)), total debt over total equity, current ratio, total liability over total assets, GDP per capita growth, inflation, and institutional quality, respectively. Source: Refinitiv Eikon, S&P Capital IQ, World Development Indicators (WDI), and World Governance Indicators (WGI). * Shows significance at the 0.05 level

financial risk. In models 10, 12, and 14, we introduced an interaction term between IL and social innovation, whereas in models 11, 13, and 15, we interacted IL with excessive social innovation. The results were found to demonstrate that IL strengthens the negative relationship between social innovation and financial risk (DRISK and PRISK), suggesting that high levels of institutional legitimacy coupled with social innovation further decrease EMNC financial risk. Thus, our third hypothesis (H3) was found to be supported.

As for excessive social innovation (quadratic relationship), although we initially expected a positive relationship with financial risk, our findings suggest otherwise. Nonetheless, institutional legitimacy was found to weaken this relationship, as indicated by the relative reduction in the coefficient value. Therefore, our fourth hypothesis (H4) was found to be supported. Additionally, it is worth noting that our findings for hypotheses H1 and H2 were found to remain unchanged after introducing the interaction with IL.

To validate and visualize the relationship between SI and EMNC financial risk, as well as the role of IL, we employed a partial regression plot. The plot provides a graphical representation of the statistical analysis we conducted in our study. Figure 1 depicts the relationship between SI and financial risk, considering the moderating effect of IL. The plot shows the regression line and the dispersion of data points, enabling a visual assessment of the strength and direction of the relationship. The results presented in Fig. 1 provide empirical evidence that supports and confirms the hypothesised relationship between SI and financial risk, with the influence of IL considered. The plot aids in enhancing the comprehensibility and interpretation of the findings, reinforcing the robustness of our research conclusions.

4.2 Additional Analysis and Robustness Tests

We performed an additional analysis to examine the differences between large and small/medium-sized firms, as defined based on total assets. Table 5 presents the findings related to the relationship between social innovation (and excessive social innovation) and financial risk (DRISK) and the impact of institutional legitimacy on these relationships, segregated by firm size. We divided the sample based on the median value of the EMNCs' total assets. Firms we categorised firms with total assets higher than the median value as large, and considered those with total assets lower than the median as small/medium-sized. Interestingly, we found the results for small-to-medium-sized firms to be consistent with our main findings. However, for large firms, no significant relationships were identified between social innovation (and excessive social innovation) and financial risk.

To validate our findings, we conducted a series of robustness tests. First, we used an alternative proxy for social innovation and, finally, we applied Propensity Score Matching (PSM) to mitigate the issue of self-selection bias. Table 6 presents the outcomes of the correlation between social innovation (and excessive social innovation) and financial risk (DRISK), as well as the impact of institutional legitimacy on these correlations, using alternative proxies for social innovation. For this purpose, we utilized product responsibility and CSR strategy as alternative proxies for social

Table 3 Social innovation and financial risk

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	DRISK			LRISK			PRISK		
SI	-0.006***	-0.006***		-0.003	-0.003		-0.006***	-0.006***	
	(0.002)	(0.002)		(0.002)	(0.002)		(0.002)	(0.002)	
SI^2			-0.001***			-0.001			-0.001***
			(0.000)			(0.000)			(0.000)
SIZE	0.038	0.053	0.059	-0.061	-0.066*	-0.065	0.068*	0.088**	0.094***
	(0.036)	(0.038)	(0.038)	(0.037)	(0.040)	(0.040)	(0.035)	(0.036)	(0.036)
DE	-0.197***	-0.200***	-0.207***	0.014	0.009	0.008	-0.255***	-0.253***	-0.259***
	(0.053)	(0.055)	(0.055)	(0.123)	(0.125)	(0.125)	(0.070)	(0.073)	(0.072)
CR	0.269***	0.276***	0.281***	0.300***	0.297***	0.298***	0.304***	0.314***	0.318***
	(0.059)	(0.057)	(0.058)	(0.058)	(0.058)	(0.058)	(0.064)	(0.063)	(0.063)
LA	0.023***	0.023***	0.024***	0.027***	0.027***	0.027***	0.023***	0.024***	0.024***
	(0.003)	(0.003)	(0.003)	(0.005)	(0.005)	(0.005)	(0.003)	(0.004)	(0.004)
GDPG		-0.016	-0.016		0.000	0.001		-0.013	-0.013
		(0.018)	(0.018)		(0.017)	(0.017)		(0.018)	(0.018)
INF		-0.008	-0.005		0.004	0.004		-0.010	-0.007
		(0.017)	(0.017)		(0.016)	(0.016)		(0.016)	(0.016)
IQ		0.159**	0.161**		-0.067	-0.070		0.232***	0.232***
		(0.076)	(0.076)		(0.068)	(0.068)		(0.076)	(0.077)
Constant	-4.531***	-4.800***	-5.089***	0.168	0.285	0.205	-5.172***	-5.617***	-5.878***
	(0.898)	(0.965)	(0.968)	(0.874)	(0.964)	(0.979)	(0.875)	(0.923)	(0.930)
Observations	708	708	708	728	728	728	701	701	701
Adjusted R-squared	0.136	0.142	0.145	0.174	0.173	0.173	0.157	0.171	0.173
F statistics	6.600***	6.181***	6.253***	6.698***	5.897***	5.926***	5.650***	5.370***	5.423***
Year fixed effect	yes	yes	yes	yes	yes	yes	yes	yes	yes
Firm fixed effect	yes	yes	yes	yes	yes	yes	yes	yes	yes

Table 3 (continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	DRISK			LRISK			PRISK		
Industry fixed effect	yes	yes	yes	yes	yes	yes	yes	yes	yes
Cluster SE	yes	yes	yes	yes	yes	yes	yes	yes	yes

Note DRISK, LRISK, PRISK, SI, SIZE, DE, CR, LA, GDPG, INF and refer to default risk, leverage risk, portfolio risk, social innovation, firm size (ln (total assets)), total debt over total equity, current ratio, total liability over total assets, GDP per capita growth, inflation, and institutional quality, respectively. Robust standard errors are in parenthesis. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively. Source: Refinitiv Eikon, S&P Capital IQ, WDI, and WGI.

Table 4 Social innovation, institutional legitimacy, and financial risk

	(10)	(11)	(12)	(13)	(14)	(15)
	DRISK		LRISK		PRISK	
SI	-0.025***		-0.008*		-0.023***	
	(0.004)		(0.004)		(0.004)	
SI^2		-0.00029***		-0.001		-0.00267***
		(0.000)		(0.000)		(0.000)
SI x IL	-0.003***		-0.001		-0.003***	
	(0.001)		(0.001)		(0.001)	
SI^2 x IL		-0.00004***		-0.001		-0.00003***
		(0.000)		(0.000)		(0.000)
SIZE	-0.000	0.021	-0.078*	-0.073*	0.039	0.058
	(0.040)	(0.039)	(0.041)	(0.041)	(0.038)	(0.037)
DE	-0.190***	-0.189***	0.017	0.015	-0.245***	-0.244***
	(0.053)	(0.053)	(0.123)	(0.123)	(0.071)	(0.071)
CR	0.252***	0.272***	0.288***	0.294***	0.292***	0.310***
	(0.057)	(0.057)	(0.059)	(0.059)	(0.062)	(0.062)
LA	0.024***	0.024***	0.027***	0.027***	0.025***	0.025***
	(0.003)	(0.003)	(0.005)	(0.005)	(0.003)	(0.003)
GDPG	-0.025	-0.024	-0.002	-0.001	-0.021	-0.020
	(0.018)	(0.018)	(0.017)	(0.017)	(0.018)	(0.018)
INF	0.007	0.002	0.008	0.006	0.004	-0.000
	(0.017)	(0.017)	(0.016)	(0.016)	(0.016)	(0.016)
IQ	0.346***	0.296***	-0.021	-0.040	0.399***	0.352***
	(0.082)	(0.080)	(0.075)	(0.073)	(0.084)	(0.082)
Constant	-3.662***	-4.270***	0.563	0.387	-4.567***	-5.128***
	(1.002)	(0.991)	(0.995)	(0.999)	(0.945)	(0.940)
Observations	708	708	728	728	701	701
Adjusted R-squared	0.174	0.173	0.174	0.173	0.198	0.196
F statistics	6.973***	6.928***	5.698***	5.725***	6.066***	5.978***
Year fixed effect	yes	yes	yes	yes	yes	yes
Firm fixed effect	yes	yes	yes	yes	yes	yes
Industry fixed effect	yes	yes	yes	yes	yes	yes
Cluster SE	yes	yes	yes	yes	yes	yes

Note DRISK, LRISK, PRISK, SI, IL, SIZE, DE, CR, LA, GDPG, INF and IQ refer to default risk, leverage risk, portfolio risk, social innovation, institutional legitimacy, firm size (ln (total assets)), total debt over total equity, current ratio, total liability over total assets, GDP per capita growth, inflation, and institutional quality, respectively. Robust standard errors are in parenthesis. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively. Source: Refinitiv Eikon, S&P Capital IQ, WDI, and WGI.

innovation. Importantly, all our results were found to remain consistent with our primary findings, lending further credibility to our conclusions.

Our final consideration pertained to the potential issue of selection bias, which could affect the relationship between social innovation and the financial risk of EMNCs, contingent on the selection of EMNCs included in our study sample. This issue would have arisen if our chosen sample of EMNCs had not been a statistically accurate representation of the entire EMNC population. For example, had EMNCs with specific degrees of social innovation been disproportionately represented in

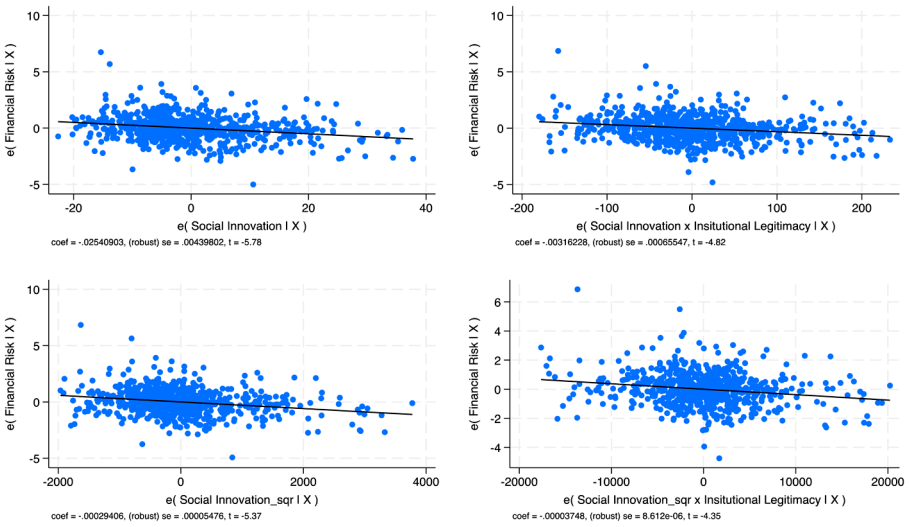

Fig. 1 Partial regression plot

our sample, this could have distorted our results, potentially leading to inaccurate conclusions about the relationship between social innovation and financial risk. Additionally, had the EMNCs opting to engage in social innovation practices been intrinsically different from those that did not (they might, for instance, have been more risk-averse, possessed more resources, or operated in different sectors), this could also have induced selection bias. To mitigate this possible self-selection bias, we employed the Propensity Score Matching (PSM) technique.

Table 7 illustrates the results of the PSM test. Utilising PSM, we match sample firms with control firms that exhibit similar characteristics based on covariates to mitigate self-selection (Rosenbaum & Rubin, 1983). Firstly, we divide the sample into two groups: Treatment and Control groups, based on social innovation (SI dummy). 'Treatment' is defined as 1 for firms whose value exceeds the median of social innovation, whereas 'Control' is defined as 0 for firms whose value is below this median.

Following this, we matched firms on a one-to-one basis without replacement, considering all control variables such as SIZE, DE, CR, LA, GDPG, INF, and IQ. We then re-ran the baseline regression (as per Table 4) to examine the relationship using the matched sample. Following this additional test, our baseline results were found to remain consistent.

5 Discussion and Implications

We addressed three critical questions that have hitherto remained unexplored in the social innovation and EMNC literatures. Our theoretical foundation was built upon the logic deriving from stakeholder theory, integrated with institutional theory, to explain the boundary condition of institutional legitimacy. Our findings yielded several important insights pertaining to the interplay between social innovation and

Table 5 Social innovation, legitimacy, and financial risk (by size)

Dep: DRISK	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
	Big firms				Small and medium firms			
SI	0.005	0.007			-0.010***	-0.027***		
	(0.006)	(0.017)			(0.003)	(0.005)		
SI^2			0.001	0.001			-0.001***	-0.00030***
			(0.000)	(0.000)			(0.000)	(0.000)
SI x IL		0.001				-0.003***		
		(0.002)				(0.001)		
SI^2 x IL				-0.001				-0.00003***
				(0.000)				(0.000)
DE	0.012	0.005	0.034	0.041	-0.155**	-0.164***	-0.160**	-0.152**
	(0.228)	(0.246)	(0.219)	(0.228)	(0.066)	(0.060)	(0.065)	(0.060)
CR	0.260	0.266	0.233	0.231	0.258***	0.247***	0.259***	0.258***
	(0.185)	(0.179)	(0.187)	(0.186)	(0.058)	(0.058)	(0.058)	(0.058)
LA	0.004	0.004	0.003	0.003	0.026***	0.026***	0.026***	0.026***
	(0.014)	(0.014)	(0.013)	(0.013)	(0.003)	(0.003)	(0.003)	(0.003)
GDPG	-0.032	-0.032	-0.028	-0.029	-0.013	-0.020	-0.011	-0.017
	(0.041)	(0.040)	(0.042)	(0.041)	(0.022)	(0.022)	(0.022)	(0.021)
INF	-0.052	-0.054	-0.048	-0.044	0.004	0.016	0.011	0.012
	(0.045)	(0.049)	(0.045)	(0.048)	(0.019)	(0.019)	(0.019)	(0.019)
IQ	-0.075	-0.111	-0.148	-0.077	0.262***	0.419***	0.269***	0.365***
	(0.375)	(0.553)	(0.367)	(0.548)	(0.083)	(0.088)	(0.082)	(0.086)
Constant	-3.435***	-3.450***	-3.392***	-3.382***	-3.542***	-3.605***	-3.764***	-3.776***
	(1.172)	(1.170)	(1.088)	(1.090)	(0.370)	(0.366)	(0.359)	(0.354)
Observations	149	149	149	149	559	559	559	559
Adjusted R-squared	0.159	0.152	0.167	0.160	0.146	0.171	0.156	0.174
F statistics	4.160***	5.450***	4.260***	5.550***	5.302***	6.320***	5.542***	6.395***
Year fixed effect	yes	yes	yes	yes	yes	yes	yes	yes
Firm fixed effect	yes	yes	yes	yes	yes	yes	yes	yes

Table 5 (continued)

Dep: DRISK	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
Industry fixed effect	yes	yes	yes	yes	yes	yes	yes	yes
Cluster SE	yes	yes	yes	yes	yes	yes	yes	yes

Note DRISK, SI, IL, DE, CR, LA, GDPG, INF and refer to default risk, social innovation, institutional legitimacy, total debt over total equity, current ratio, total liability over total assets, GDP per capita growth, inflation, and institutional quality, respectively. Robust standard errors are in parenthesis. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively. Source: Refinitiv Eikon, S&P Capital IQ, WDI, and WGI.

Table 6 Social innovation, legitimacy, and financial risk (Alternative social innovation index)

Dep: DRISK	(24)	(25)	(26)	(27)
	Product responsibility		CSR strategy	
SI	-0.022***		-0.019***	
	(0.004)		(0.004)	
SI^2		-0.00025***		-0.00021***
		(0.000)		(0.000)
SI x IL	-0.003***		-0.002***	
	(0.001)		(0.001)	
SI^2 x IL		-0.00003***		-0.00003***
		(0.000)		(0.000)
SIZE	-0.006	-0.001	0.008	0.012
	(0.040)	(0.039)	(0.039)	(0.039)
DE	-0.203***	-0.214***	-0.162***	-0.153***
	(0.052)	(0.053)	(0.056)	(0.055)
CR	0.258***	0.266***	0.241***	0.254***
	(0.058)	(0.058)	(0.059)	(0.059)
LA	0.025***	0.025***	0.022***	0.022***
	(0.003)	(0.003)	(0.003)	(0.003)
GDPG	-0.018	-0.016	-0.013	-0.013
	(0.018)	(0.018)	(0.017)	(0.017)
INF	0.000	-0.003	-0.002	-0.006
	(0.016)	(0.016)	(0.016)	(0.016)
IQ	0.353***	0.327***	0.274***	0.244***
	(0.081)	(0.080)	(0.079)	(0.076)
Constant	-3.642***	-3.868***	-3.757***	-3.919***
	(1.013)	(1.000)	(0.979)	(0.977)
Observations	708	708	708	708
Adjusted R-squared	0.170	0.170	0.163	0.161
F statistics	6.751***	6.673***	6.276***	6.352***
Year fixed effect	yes	yes	yes	yes
Firm fixed effect	yes	yes	yes	yes
Industry fixed effect	yes	yes	yes	yes
Cluster SE	yes	yes	yes	yes

Note DRISK, SI, IL, SIZE, DE, CR, LA, GDPG, INF and refer to default risk, social innovation, institutional legitimacy, firm size (ln (total assets)), total debt over total equity, current ratio, total liability over total assets, GDP per capita growth, inflation, and institutional quality, respectively. Robust standard errors are in parenthesis. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively. Source: Refinitiv Eikon, S&P Capital IQ, WDI, and WGI.

financial risk. First, in line with our H1, we found that EMNCs benefit from the reduction in financial risk brought about by social innovation, which suggests that, by responding to social expectations, EMNCs significantly reduce specific risks (Deckop et al., 2006)—e.g., by reducing costs and avoiding penalties and negative reactions from the public and their consumers (Aguilera-Caracuel et al., 2017). This finding provides support to Sun & Cui's (2014) assertion that a firm's social activities are important determinants of its financial health; particularly, social activities play a critical role in reducing the firm's capital constraints.

Table 7 Propensity score matching (PSM)

	(28)
	DRISK
SI_dummy	-1.622***
	(0.352)
SI_dummy x IL	-0.260***
	(0.054)
SIZE	-0.089**
	(0.039)
DE	-0.261***
	(0.088)
CR	0.275***
	(0.064)
LA	0.030***
	(0.006)
GDPG	-0.018
	(0.019)
INF	-0.022
	(0.021)
IQ	0.277***
	(0.086)
Constant	-1.745*
	(0.994)
Observations	696
Adjusted R-squared	0.150
F statistics	5.793***
Year fixed effect	yes
Firm fixed effect	yes
Industry fixed effect	yes
Cluster SE	yes

Note DRISK, SI, IL, SIZE, DE, CR, LA, GDPG, INF and refer to default risk, social innovation, institutional legitimacy, firm size (ln (total assets)), total debt over total equity, current ratio, total liability over total assets, GDP per capita growth, inflation, and institutional quality, respectively. SI_dummy-'Treatment' is defined as 1 for firms whose value exceeds the median of social innovation, whereas 'Control' is defined as 0 for firms whose value is below this median. We have not presented the results of the square of SI_dummy as it yields identical values to the original SI_dummy variable. Robust standard errors are in parenthesis. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively. Source: Refinitiv Eikon, S&P Capital IQ, WDI, and WGI.

Second, contrary to our theorisation that excessive social innovation will increase the financial risk of EMNCs—indicating a U-shaped relationship between social innovation and EMNC financial risk (H2)—our results established the beneficial impact of excessive social innovation in mitigating EMNC financial risk. Thus, our Hypothesis 2 was rejected. These findings corroborate and extend the literature stream, highlighting the importance of any MNC activities directed towards social innovation—such as corporate social innovation, the creation of shared value, and corporate social responsibility (Lind et al., 2022). For example, past research has sought to comprehend two issues: why MNCs incorporate CSR in their activity systems and how they benefit from the related activities (see, e.g., Abugre & Anlesinya, 2020; Aguilera-Caracuel et al., 2017; Petrović-Ranđelović, et al., 2015). These studies established a range of immediate and direct business benefits linked to the incorporation of social innovation activities in MNC operating systems. The rejection of our hypothetical assumption (H2) is not surprising, given the fact that companies with better CSR performance may face significantly lower capital constraints (Beiting et al., 2015) and enjoy enhanced stock performance (Blasi et al., 2018). However, our result diverges from a research tradition. For example, Leyva-De la Hiz

and Bolívar-Ramos (2022) showed that excessive involvement in green innovation activities exerts a negative effect on the performance of firms, eventually putting them at financial risk (Adeusi et al., 2014).

Third, the results of our study notably underscore the critical role played by high levels of institutional legitimacy in amplifying the positive impacts of social innovation on financial risk mitigation for EMNCs. This finding substantiates our Hypothesis 3 and is in line with the literature, highlighting the significance of a supportive institutional environment in facilitating effective social innovation (Rao-Nicholson et al., 2017). Moreover, our results also corroborated Hypothesis 4, revealing a robust interaction between high institutional legitimacy and social innovation. This interaction suggests that, in contexts with strong institutional legitimacy, the potential negative effects of excessive social innovation on EMNC financial risks are significantly reduced.

This dynamic can be explained by the fact that, in environments with high institutional legitimacy, EMNCs are better equipped to navigate the complexities associated with social innovation. The supportive framework provided by such legitimacy often includes clearer regulatory guidelines, more predictable market conditions, and stronger stakeholder relationships (Doh et al., 2012). These factors are instrumental in guiding EMNCs in their social innovation efforts, ensuring that these initiatives are sustainable and aligned with broader strategic objectives. Emerging economies, with their unique challenges and opportunities, provide fertile ground for EMNCs to innovate in socially responsible ways (Cuervo-Cazurra & Dau, 2009). In a supportive institutional environment, EMNCs are more likely to successfully implement social innovation strategies that contribute to financial risk mitigation. This is because such environments provide the resources, knowledge, and networks necessary for EMNCs to leverage to their advantage (Meyer et al., 2009).

5.1 Theoretical Contributions

The contributions of our study to the existing body of knowledge are threefold. First, by framing our first theoretical reasoning based on insights drawn from stakeholder theory, we took an important step towards addressing the dearth of existing knowledge on the financial risk implications of social innovation in the context of EMNCs, a topic that remains largely an under-researched despite the growing appreciation of the value and contributions of social innovation activities (Rao-Nicholson et al., 2017; Sinkovics et al., 2014), particularly in the context of EMNCs. By having hitherto overlooked EMNC engagement in social innovation activities and their financial risk implications, research in MNCs had widely failed to develop knowledge on the interplay between social innovation and EMNC financial risk. Overall, the scholarship around MNC involvement in social innovation is still in an embryonic stage (Lind et al., 2022). Park and Ghauri (2015) also noted that social innovation research is still a very new area of inquiry and thus requires scholarly attention.

We add to the literature by responding to these calls and advancing the stakeholder theory logic into the social innovation and EMNCs literatures. Stakeholder theory underlines the paramount importance for business legitimacy of joint value creation to a range of stakeholders (Freeman, 2010; Freudenreich et al., 2020); among these,

society or community is one of the most influential actors. Likewise, Freudenreich et al. (2020) argued that any value creation that does not entail mutual benefits for all parties can easily cause a business to lose its legitimacy. Our findings evidence how social innovation activities lessen financial risks, thereby indicating that a salient feature of an MNC's involvement in social innovation entails a 'dual value approach', which implies efforts to simultaneously create social and economic value (Lind et al., 2022). The dual value approach implies shared value creation (CSV), which refers to addressing social needs and issues within the organization itself with a suitable business model while, at the same time, making a profit (Porter & Kramer, 2011). Our findings add to this stream of literature by demonstrating the beneficial impact of social innovation-led business models on financial risk mitigation.

In addition, financial risk, as an outcome variable of social innovation, remains understudied in the literature. The knowledge on firm social engagement hitherto developed prevails in understanding its financial performance outcomes—such as sales growth, return on assets, profit before tax, cash from operating activities (Ameer & Othman, 2012), stock returns (Brammer et al., 2006), and portfolio returns (Kempf & Osthoff, 2007). For details on how the literature pertaining to the performance outcomes of social activities of firms has hitherto developed, see the recent review conducted by Coelho et al. (2023). We explicitly addressed the knowledge gaps by examining the interplay between social innovation and financial risk in the context of EMNCs. In so doing, we proved that social innovation reduces EMNC financial risk.

Second, although we hypothesised a U-shaped relationship between social innovation and financial risk, our findings did not support it. Thus, if MNC top managers pursue excessive social innovation with the intention of gaining recognition, rewards, or other personal benefits (Larsson & Brandsen, 2016), resource commitment in excessive social innovation can outweigh such personal interests, as we found that it plays a beneficial role in further mitigating financial risk. This finding adds new insights into stakeholder theory. Our findings regarding H1 and H2 jointly extend the logic of stakeholder theory into the social innovation and EMNCs literatures and challenge the conventional wisdom that engaging in social activities diminishes shareholder wealth as it increases the operating costs of an organisation (Friedman, 1970). Also, with excessive social innovation activities, particularly green ones, complexity increases—as it involves coordination efforts between different departments and the need to explore uncertain technological areas; hence, the cost of such innovations outweighs these benefits (Hiz & Bolívar-Ramos, 2022).

Third, borrowing insights from institutional theory, we examined the boundary condition of institutional legitimacy in our model relationships. We found that high degrees of institutional legitimacy strengthen the relationship between social innovation and financial risk mitigation, suggesting that high institutional legitimacy coupled with social innovation further decreases EMNC financial risk. Subsequently, our analysis demonstrated that institutional legitimacy weakens the relationship between excessive social innovation and financial risk escalation. These findings point to the paramount importance of institutional legitimacy in influencing the association between social innovation and financial risk, thereby extending the logic of institutional theory into research on social innovation and EMNCs. We have shown that the interaction effect of institutional legitimacy and social innovation is robust, which

enables EMNCs to significantly minimise their financial risk. This supports the assertion made by Foroudi et al. (2021) that institutional and, in particular, governmental support can enhance the quality of social innovation. Legitimate institutions in emerging economies can help to balance the interests of different stakeholders and promote sustainable and socially responsible business practices (Chen et al., 2016), therefore reducing the financial risks associated with social innovation for EMNCs.

The synergy of stakeholder and institutional theories suggests that the involvement in social innovation activities is affected by the interaction of firms with their stakeholders—which enables the former to legitimize and sustain their relations/brand value with their stakeholders—and by the wider social and political context in which such firms operate (Gray et al., 1995; Deegan, 2002; Lanis & Richardson, 2012. According to Udayasankar (2008, p.168), "*the institutional or legitimacy-based view links the firm to its external context by suggesting that CSR involvement is fuelled by various stakeholder demands and is rewarded with legitimacy (Hooghiemstra, 2000)*". The bolstering effect of high degrees of institutional legitimacy on the relationship between social innovation and financial risk mitigation, as evidenced by our findings, points towards the paramount importance of theorising CRS activities and their outcomes from the stakeholder and institutional theories. Such scholarly endeavour can offer a holistic understanding of the issue under investigation and can address the issue of the weak theoretical grounding of SI research. According to Lind et al. (2022, p.215), "*the theoretical and conceptual grounding of social innovation in a corporate context is rather fragmented. Many articles do not refer to any specific theory, and in most articles, the theories are vaguely referenced as background to the study. These observations establish that the study of MNC involvement in social innovation lacks theoretical grounding*."

Finally, our post-hoc analyses provide important insights into the impact of firm size on financial risk. Our results suggest that, while social innovation has the potential to minimize financial risk for EMNCs, large firms are always immune to the financial risk associated with such innovate; in fact, the size and resources of a firm can increase that financial risk, as evidenced in our results. There are several possible explanations for this finding. First, large firms may exhibit stronger tendencies to pursue excessive CSR (Pfajfar et al., 2022) or social innovation activities, investing too heavily in untested and potentially unprofitable initiatives. This can lead to a build-up of financial risk, as large firms may have more resources to invest in these initiatives but also be more exposed to any potential losses. Second, large firms may find it more difficult to adapt to new and innovative business models because of their generally large and complex organizational structures (Aghina et al., 2014), which can hinder their ability to respond to challenges or change (Lozano, 2013). In addition, large firms may have stronger vested interests in maintaining the status quo and may thus be resistant to change. Finally, the presence of powerful stakeholders can also increase the financial risks associated with social innovation for large firms. Large firms—which face the risk associated with social and environmental responsibility in their community and global business operations (Tate et al., 2010)—may be more likely to face opposition from powerful interest groups, such as labour unions or environmental organizations, which can raise the costs and risks of implementing socially innovative initiatives.

5.2 Implications for Policy and Practice

MNCs are often accused of engaging in opportunistic behaviours by basing their operations in countries with questionable respect for human rights and exploiting the natural resources of disadvantaged nations and countries with laxer regulations (Aguilera-Caracuel et al., 2017). Consequently, one of the biggest challenges MNCs encounter when expanding abroad is legitimizing their operations before the host country's society (Bucheli & Kim, 2012). Thus, engaging in CRS activities is particularly important to legitimize MNC operations (Freudenreich et al., 2020), enhance their corporate reputation—through which they can effectuate their economic value (Abugre & Anlesinya, 2020)—and, in regard to our study's focus, mitigate their financial risks.

Our findings have several implications for the managers of EMNCs and policymakers in emerging economies. First, our study offers clear evidence for the criticality of social innovation as a means through which EMNCs can alleviate their financial risk. Second, the managers of EMNCs hesitate to invest in social innovation, even if this involves significant commitments of financial and non-financial resources. It should be noted that the benefits of social innovation retain a strong potential to outweigh its implementation costs. Our finding further supports this argument, demonstrating that excessive social innovation is even more effective in attenuating financial risk, although we expected the opposite. Therefore, investment in social innovation activities should be considered as strategic factor in maintaining and improving corporate reputation (Valenzuela-Fernández et al., 2015)—in our case, in relation to risk mitigation. Third, the above conditions become even more favourable in contexts characterised by highly legitimate institutions. This implies that managers of EMNCs should pay attention to the institutional features based on which they intend to pursue their social innovation strategies. They should be aware that their firms survival and performance largely depend on aligning such strategies with their its external—i.e., institutional—environment (Aharonson & Bort, 2015). The learning implications of our findings for policymakers in emerging economies should also be considered. CSR has a strong potential to make efficacious contributions in addressing the needs of disadvantaged communities (Ite, 2004) and in meeting several of the United Nations' sustainable development goals for developing countries. The idea of building shared value creation carries with it huge opportunities to change the business model for sustainable growth by integrating business practices and social issues, such as those the world has experienced during the COVID-19 pandemic. For example, Grameenphone Bangladesh (part of Telenor Group, a Norwegian multinational telecommunications company) collaborated with Google and other IT firms to enhance customer experience via advanced technological support during the pandemic (Grameenphone & Bangladesh, 2023). Unilever, in collaboration with UK AID, initiated a hand washing agenda by providing paddle-operating hand wash sinks to tackle the spread of COVID-19 in many countries (Unilever, 2020). In addition to existing social activities, value creation for communities and firms through additional CSR initiatives had been a fundamental agenda item for many MNCs during the lockdowns enacted in response to the COVID-19 pandemic. Those initiatives further enhanced MNC legitimacy and brand value to consumers. Therefore, good national macroeconomic

planning and management, backed by equitable resource allocation and a friendly environment, can have a significant bearing on overall performance (Ite, 2004).

5.3 Limitations and Future Research

Like any other empirical work, our study has some limitations. First, we could not determine the type of social innovation in which our sample EMNCs were engaged—i.e., whether it implied radical or transformative change. Therefore, future research could be directed consider the type of social innovation—i.e., incremental/radical or catalytic/sustaining—in which MNCs are involved (Lind et al., 2022) and its performance and financial risk implications. Second, our study was confined to providing insights into the financial risk implications of the social innovation activities of EMNCs; this provides future scholars with an opportunity to shed light on financial performance outcomes such as sales growth, return on assets, profit before taxation, cash flows (Ameer & Othman, 2012), idiosyncratic risk, stock returns, and future asset pricing (Coelho et al., 2023). Regarding model moderators, we only considered one aspect of institutions—i.e., their legitimacy. However, resources stemming from network ties (Murray et al., 2010) and governmental support (Mulgan, 2006) can also assist in enhancing social innovation quality (Foroudi et al., 2021). Future research could thus benefit from incorporating these moderators in their models.

Author Contribution All authors equally contributed to the paper.

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