Received 6 March 2023
Revised 1 May 2023
14 June 2023
Accepted 18 July 2023

Sustainable finance and business risk resilience: a conceptual perspective and suggestions for upcoming research

William Newlove Azadda
Nobel International Business School, South Legon, Ghana and Ghana Armed Forces, Accra, Ghana

Samuel Koomson
Department of Business Administration, University of Professional Studies, Accra, Ghana, and

Senanu Kwasi Klutse
Nobel International Business School, South Legon, Ghana

Abstract

Purpose – As public awareness of the concept of sustainable development has increased, a new investor market has appeared. These investors will only make investments in sustainable financial instruments. Yet, how corporate managers can effectively exploit this new financing concept to make their companies risk resilient remains unaddressed. This study, a conceptual research, aims to examine the impact of sustainable finance (SF) on business risk resilience (BR) and the impact of SF on risk management infrastructure (RI). It also addresses the impact of RI on BR and the mediating effect of the former between SF and BR in the corporate world. Finally, this research explores the moderating effect of managerial capability (MC) and firm technology-focused innovation capability (IC) between SF and RI.

Design/methodology/approach – This study incorporates both theoretical and empirical works in the sustainability, innovation, risk management and HRM fields. Afterwards, it constructs a conceptual model alongside suppositions that can be tested in further studies.

Findings – This study proposes that SF will enhance BR and RI. Moreover, RI will promote BR and positively intervene between SF and BR. Furthermore, MC and IC will reinforce the SF–RI impact such that the SF–RI impact will be strengthened for companies whose MCs and ICs are high than low.

Research limitations/implications – This research affords suggestions for researchers in multidisciplinary fields. It reinforces BR and RI by introducing SF, MC and IC as tactical devices. It also serves as a reference point for forthcoming academics to investigate this conceptual model, empirically, in diverse industries worldwide.

Practical implications – Practical lessons for finance, investment and risk managers, as well as corporate investors are discussed.

The authors wish to acknowledge the efforts of the Editor (Dr. Sarat Kumar Jena) and all the Anonymous Reviewers for their invaluable comments and feedback, which altogether has helped to improve the quality and quantity of this manuscript.

Vilakshan - XIMB Journal of Management
Vol. 21 No. 1, 2024
pp. 66-78
Emerald Publishing Limited
e-ISSN: 2633-9439
p-ISSN: 0973-1954
DOI 10.1108/XJM-02-2023-0034

Originality/value – This study provides a new research model that demonstrates how SF can be exploited to promote BR and build RI. It also shows how RI can bolster BR and how RI can connect SF to BR. This new model also exhibits how MC and IC moderate the impacts of SF and RI. Thus, it attempts to advance existing knowledge and theoretical frameworks.

Keywords Resources, Sustainability, Innovation, Risk resilience, Investment decisions, Risk management structure

Paper type Conceptual paper

1. Introduction

Changes in investor preferences have been a major factor in the emergence of SF. This is particularly so for the millennial generation. Because, this generation will eventually profit from the greatest transfer of inherited wealth in human history over the next two decades. This inherited wealth amounts to US$68tn (Forbes Media LLC, 2023). Of these millennials, 45% say that they want to invest their money to benefit others. They augment that social responsibility is an important consideration when choosing investments (JPMorgan Chase and Company, 2023). Additionally, 90% of female investors agree that having a positive social impact is crucial (JPMorgan Chase and Company, 2023). Company investors are also updating their long-term investment risk models to include governance, social and especially environmental considerations because it is crucial for their investment portfolios. Examples of these investors are pension funds and insurance companies (Institutional Asset Manager, 2023). Sustainable finance (SF) has, therefore, become an emerging topic in the financial sector, globally.

SF is the process of making investment decisions in a financial sector that take governance, social and environmental factors into account. Governance factors include executive compensation, employee relations and management structures of both private and public companies. These governance factors play a crucial role in ensuring that social and environmental factors are incorporated into the decision-making mechanism. Inclusion, human rights, investment in communities and human capital, inequality, labour relations and inclusiveness are examples of social factors. Environmental factors may include climate change adaptation and mitigation, such as pollution avoidance and biodiversity preservation (European Union, 2022).

SF leads to more long-term investments in activities and projects that are good for a firm and an economy. This aids in advancing sustainable development goal *one* (no poverty), *two* (zero hunger), *eight* (decent work and economic growth), *ten* (reduced inequalities), *12* (responsible consumption and production) and *13* (climate action). Developing an integrated SF market is one of the most important things that needs to happen to reach the sustainable development targets by 2030. This is because, there is an estimated US$3tn to US$4tn annual shortfall in available financing (UNA-UK, 2019). Integrated SF investment strategies focus on putting additional funds into high-impact businesses (Nicholls, 2021).

According to the European Union (2022), SF involves the disclosure of risks associated with governance, social and environmental factors. These risks may have an impact on a financial system. There is therefore a need to reduce such risks through the right governance of financial and company players. In this context, this study makes a supposition that SF could be a useful device for enhancing a company' business risk resilience (BR). Resilience is an organisational trait that a company must develop to handle the difficulties brought on by numerous environmental, social and governance risk factors. A company's ability to respond rapidly to and quickly bounce back from business disruption events is referred to as BR (Linnenluecke, 2017). A company that prioritises more comprehensive information processing can respond rapidly to these

disruption events. This assertion is supported by the tenets of the information processing theory (Tushman and Nadler, 1978).

The information processing theory (Tushman and Nadler, 1978) argues that, for a company to flexibly adapt and overcome uncertainty and SF risk factors that may impede BR, it requires enough information (that needs to be processed) to make proper financial decisions. In the literature, Chirambo (2017) demonstrates how microfinance promotes climate change resilience. Nguyen *et al.* (2022) find that finance strengthens risk resilience. Yuan and Li (2022) also disclose that finance encourages resilience by effectively utilising appropriate information from the external and internal environment. Yet, how SF improves risk resilience of companies remains underexplored in literature. This conceptual work attempts to address this knowledge gap and answer the research question:

RQ1. How does SF affect BR?

Another knowledge gap that is worth addressing is how SF reinforces a company's RI. A company can manage risk and avoid business disruption by putting in place a framework of resources called RI. Risk management resources include a risk management department, information systems and key performance indicators and metrics (Ambulkar *et al.*, 2015). This helps an organisation specialise tasks and improve information exchange (Bonner *et al.*, 2002). Thus, the use of SF may enable a company to build a robust RI. In other words, a company's ability to construct a strong risk management infrastructure (RI) that can withstand business disruptions may depend on its degree of sustainable financing (European Union, 2022). However, the effect of sustainable financing on RI has gone unnoticed. At this point, this conceptual work seeks to answer the research question:

RQ2. In what ways does SF impact on a company's RI?

This research does this via the lens of the information processing theory.

This research makes a third argument that a company that is able to organise and establish an effective resource structure would better ensure continual process improvements and avoid business collapse (Revilla and Saenz, 2017). This suggests that building a robust RI can potentially promote BR. The establishment of a RI helps a company to develop systems and processes. These systems and processes aid in detecting and formulating risk treatment prescriptions for the numerous hazards affecting the company (Samson and Gloet, 2018). To detect and manage business risks, such an infrastructure must comprise the implementation of formal security procedures, the existence of risk managers, the deployment and development of business continuity plans and the establishment of emergency operations centres (Sáenz and Revilla, 2014). The synergy that emerges when all organisational stakeholders collaborate plays a crucial role in helping businesses to design risk management strategies to mitigate the impact of external and internal risk occurrences.

This way, better teamwork, knowledge sharing and joint issue solving are more effective than individuals or isolated risk management measures in lowering organisational hazards (Cantor *et al.*, 2014). Although there are many ways a company can strengthen its ability to withstand the effects of adverse events, building up a number of competitive capabilities such as RI is deemed most fruitful (Ambulkar *et al.*, 2016). Under this circumstance, RI is regarded as an asset or resource capability (Barney, 1991) that can foster BR. Nonetheless, a hand full of academics have concentrated on the effect of RI on BR (Singh, 2020). Also, how RI mediates between SF and BR remains unanswered. It is said that research is not rigorous if it ignores the mediating factors (Ahinful *et al.*, 2023). Thus, this study attempts to answer these additional research questions:

RQ3. How does RI affect BR? In what ways does RI mediate between SF and BR?

Barney's (1991) resource-based theory of a firm is also helpful in illuminating the possible moderating roles of managerial capability (MC) and innovation capability (IC) in the connection between SF and RI. This theory regards MC and IC as assets or resource capabilities. The combined effect of each of these capabilities with sustainable financing can generate a robust RI. Companies that are endowed with rich MCs and ICs can easily turn their SF into a robust RI.

MC refers to the abilities and administrative knowledge that companies have acquired to be effective in a variety of management facets (Wu *et al.*, 2020). In essence, MC dictates why some businesses are better equipped than others to accomplish two distinct jobs equally well (Birkinshaw and Gupta, 2013). Moran and Ghoshal (1999) state that managers should be more than merely players in a game to efficiently distribute financial resources. MC essentially determines why some organisations are more proficient than others when performing tasks (Wu *et al.*, 2020). However, insufficient efforts have been made to investigate MC (i.e. how decisions are taken, who participates in decision-making, how decisions are executed, etc.). Also, it is unclear whether MC can possibly play a moderating effect on the connection between SF and RI. Accordingly, the fifth research question reads:

RQ4. What is the moderating effect of MC on the connection between SF and RI?

To stay ahead in an industry, a company must be able to adapt new software, integrated systems and technology and innovate using software and technology. This ability is referred to as IC. The capability concept presupposes the existence of a "capability differential" that enables a company to attain a sustainable competitive benefit. This can be done via a variety of distinguishing capabilities (Weerawardena and McColl-Kennedy, 2002). As firms are required to be innovative to survive in an unpredictable environment (Ahinful *et al.*, 2023; Johnson *et al.*, 1997), IC offers itself as a vital resource component for creating innovative finance tools (Nicholls, 2021). It also helps in building an RI to help firms manage and overcome any unpredictable situation in the future (Lawson and Samson, 2001).

However, it remains to be determined whether IC can combine with SF to create a strong RI for a firm. Thus, the sixth research question reads: *How does IC moderate between SF and RI?* To this end, exploring SF, RI, BR, MC and IC in a single model is original and provides understanding into their complexity. Therefore, the overarching goal of this conceptual work is to address six research questions:

(1) How does SF promote BR?
(2) In what ways does SF strengthen RI?
(3) How does RI embolden BR?
(4) In what ways does RI mediate between SF and BR?
(5) What is the moderating effect of MC in the connection between SF and RI?
(6) How does IC moderate between SF and RI?

2. Literature review

2.1 How does sustainable finance promote business risk resilience?

SF is the process of making investment decisions in a financial sector that take governance, social and environmental factors into account. Governance factors include executive compensation, employee relations and management structures of both private and public

companies. These governance factors play a crucial role in ensuring that social and environmental factors are incorporated into the decision-making mechanism. Inclusion, human rights, investment in communities and human capital, inequality, labour relations and inclusiveness are examples of social factors. Environmental factors may include climate change adaptation and mitigation, such as pollution avoidance and biodiversity preservation (European Union, 2022).

SF involves the disclosure of risks associated with governance, social and environmental factors that may have an impact on a financial system. There is therefore a need to reduce such risks via the right governance of financial and company players (European Union (2022). Resilience is an organisational trait that a company must develop to handle the difficulties brought on by numerous environmental, social and governance risk factors. A company's ability to respond rapidly to and quickly bounce back from these business difficulties that are disruptive in nature is called BR (Linnenluecke, 2017). SF tries to adapt to long-term changes in the environment, deal with market risk models and reduce financial stress by setting aside money for emergencies (Alshubiri and Alraja, 2022).

In this context, SF could be a useful device for enhancing a company' BR. A research by Chirambo (2017) showed how microfinance promoted climate change resilience in Africa. Nguyen *et al.* (2022) found that finance strengthened the risk resilience in Vietnam SMEs. Yuan and Li (2022) also disclosed that finance encouraged business resilience in Chinese firms. Based on these findings, this study proposes that SF will foster a company' BR.

2.2 In what ways does sustainable finance strengthen risk management infrastructure?

A company can manage risk and avoid business disruption difficulties by putting in place a framework of resources called RI. Risk management resources include a risk management department, information systems and key performance indicators and metrics (Ambulkar *et al.*, 2015). This helps an organisation specialise tasks and improve information exchange (Bonner *et al.*, 2002). A company's ability to construct a strong RI that can withstand business disruptions may depend on its degree of sustainable financing (European Union, 2022). Based on these ideas, this research expects that SF will aid in building a robust RI for companies.

2.3 How does risk management infrastructure embolden business risk resilience?

A company that is able to organise and establish an effective risk management structure would be able to ensure continual process improvements. This will avoid business collapse (Revilla and Saenz, 2017). The establishment of a RI helps a company to develop systems and processes that aid in detecting and formulating risk treatment prescriptions for the numerous hazards affecting it (Samson and Gloet, 2018). To detect and manage business risks, such an infrastructure should comprise the implementation of formal security procedures, the existence of risk managers, the deployment and development of business continuity plans and the establishment of emergency operations centres (Sáenz and Revilla, 2014). The synergy that emerges when all organisational stakeholders collaborate plays a crucial role in helping businesses to design risk management strategies. This will help mitigate the impact of external and internal risk occurrences. This way, better teamwork, knowledge sharing and joint issue solving are more effective than individuals or isolated risk management measures in lowering organisational hazards (Cantor *et al.*, 2014). Although there are many ways a company can strengthen its ability to withstand the effects of adverse events, building up a number of competitive capabilities such as RI is considered the most fruitful (Ambulkar *et al.*, 2016). Kumar and Anbanandam (2020) and Al Naimi *et al.* (2021) disclosed

that risk management culture enhanced business resilience. Therefore, this research proposes that building a robust RI will potentially promote BR.

2.4 In what ways does risk management infrastructure mediate between sustainable finance and business risk resilience?

On the one hand, RI presents risk management resources (Ambulkar *et al.*, 2015) that help companies to specialise tasks and improve information exchange (Bonner *et al.*, 2002). Companies' ability to construct a strong RI that can withstand business disruptions may depend on their degree of available sustainable funds (European Union, 2022). On the other hand, the establishment of an RI helps companies to develop systems and processes that aid in detecting and formulating risk treatment prescriptions for boosting BR (Samson and Gloet, 2018). Although there are many ways a company can strengthen its BR, building up a number of competitive capabilities such as a RI is deemed the most fruitful (Ambulkar *et al.*, 2016). For example, Kumar and Anbanandam (2020) and Al Naimi *et al.* (2021) found that risk management culture enhanced business resilience. Therefore, this research proposes that a robust RI can potentially and positively intervene between SF and BR. Such that, greater SF will aid in building a robust RI which will, in turn, foster BR.

2.5 What is the context-dependent effect of managerial capability in the connection between sustainable finance and risk management infrastructure?

MC refers to the abilities and administrative knowledge that companies have acquired to be effective in a variety of management facets (Wu *et al.*, 2020). In essence, MC dictates why some businesses are better equipped than others to accomplish jobs well (Birkinshaw and Gupta, 2013). Moran and Ghoshal (1999) state that managers should be more than merely players in a game to efficiently distribute financial resources. MC considers how decisions are taken, who participates in decision-making and how decisions are executed. It essentially determines why some organisations are more proficient than others when performing tasks (Wu *et al.*, 2020). Companies that are endowed with rich MCs can easily turn their SF into a robust RI. Hence, this research expects that MC will potentially and positively moderate between SF and RI. Such that, the SF–RI connection will be intensified when the MC of a company is high than low.

2.6 How does innovation capability moderate between sustainable finance and risk management infrastructure?

To stay ahead in an industry, a company must be able to adapt new software, integrated systems and technology and innovate using software and technology. This ability is referred to as IC. The capability concept presupposes the existence of a "capability differential". This enables a company to attain a sustainable competitive benefit via a variety of distinguishing capabilities (Weerawardena and McColl-Kennedy, 2002). Firms are required to be innovative to survive in an unpredictable environment (Ahinful *et al.*, 2023; Johnson *et al.*, 1997). In this context, IC offers itself as a vital resource component for creating innovative finance tools (Nicholls, 2021). It also aids in building a RI to help firms manage and overcome any unpredictable situation in the future (Lawson and Samson, 2001). For instance, Rajesh (2017) showed that innovative technological capabilities improved firms' resilience. Sabahi and Parast (2020) also disclosed that IC strengthened business resilience. Thus, companies that are endowed with rich ICs can effortlessly convert their SF into a robust RI. Based on these ideas, this study proposes that IC will potentially and positively moderate between SF and RI. Such that, the SF–RI connection will be strengthened if the IC of a company is high than low.

2.7 Theoretical foundations and hypothesis development

2.7.1 Information processing theory. An organisation is seen as an information processing system within the context of the information processing theory (Tushman and Nadler, 1978). This aids in the management of uncertainty. Uncertainty is defined as the gap between the level of information needed to carry out a task and the level of information currently available within the organisation (Galbraith, 1974). There are three main components to the central premise in information processing theory.

First, more information is needed for proper decision-making when an organisation is carrying out tasks with more uncertainty, as seen in the real world. Second, a greater information processing ability is needed as the volume of information that must be handled grows. Abilities in information acquisition, distribution and synthesis are all aspects of information processing. According to the third tenet of the philosophy of processing information, success in business (such as, building a robust RI or a risk resilient business) requires a harmony between information processing ability and requirements (Tushman and Nadler, 1978).

In this context, this study argues that sufficient information (that must be processed) is necessary for a company to adapt to and overcome uncertainties and SF risks factors. An organisation's ability to manage risk and recover quickly from business disruptions is directly correlated to the level of attention it pays to the processing of information. To support this assertion, Yuan and Li (2022) used the information processing theory to elucidate how a firm's finance encouraged business resilience in Chinese firms. They did this by effectively using suitable and timely information from the external and internal environment. Mngumi *et al.* (2022) also found that green finance emboldened renewal energy infrastructure, which helped to neutralise the adverse effect of climate inconsistency. Abubakar and Handayani (2020) showed that sustainable financing instruments can be a useful tool to bolster infrastructure development in Indonesia. Yet, how SF promotes RI and risk resilience at the firm-level are under-studied in the literature. Consequently, the following suppositions are put forward:

S1. SF will be favourably connected to a firm's BR.

S2. Greater SF will be associated with robust RI.

2.7.2 Resource-based theory of a firm. Penrose (1959) and Nelson and Winter (1982) laid the groundwork for the resource-based theory of the company. This was later expanded upon by authors, such as Barney (1986, 1991), Dierickx and Cool (1989), Mahoney and Pandian (1992), Peteraf (1993) and Wernerfelt (1984). From this point of view, organisations are seen as hoards of resources or skills that are hard to replicate (Teece *et al.*, 1997). Intangible resources include things like distinctive managerial and firm IC. Tangible resources include things like product designs, sustainable financial instruments, infrastructure and manufacturing techniques.

According to Wernerfelt (1984), a firm's assets (both tangible and intangible) that are permanently or nearly permanently associated with the business are referred to as its resources. It is suggested that having access to these assets is crucial for developing and maintaining a competitive edge. Moreover, the resource-based perspective states that a firm's resources can only provide a competitive advantage if they are valued, imitable and non-substitutable (Barney, 1991; Peteraf, 1993). To the extent that a resource is unique to the firm and requires substantial adjustment costs when used in different contexts, it can continue to create sustained rents.

In this conceptual paper, it is proposed that a company's ability to organise and develop an efficient resource framework determines whether or not it will experience a catastrophic

financial failure (Revilla and Saenz, 2017). This research considers the establishment of a RI as a resource framework that can help a company to develop systems and processes. These systems and processes aid in detecting and formulating risk treatment prescriptions for the numerous hazards affecting it (Samson and Gloet, 2018). To detect and manage business risks, such a framework comprises the implementation of formal security procedures, the existence of risk managers, the deployment and development of business continuity plans and the establishment of emergency operations centres (Sáenz and Revilla, 2014). The synergy that emerges when all organisational stakeholders collaborate plays a crucial role in helping businesses to design risk management strategies. It also helps to mitigate the impact of external and internal risk occurrences.

Under this perspective, better teamwork, knowledge sharing and joint issue solving are more effective than individuals or isolated risk management measures in lowering organisational hazards (Cantor *et al.*, 2014). Although there are numerous methods by which a firm can increase its resilience to bad occurrences, establishing a number of competitive skills (such as RI) is the most effective (Ambulkar *et al.*, 2016). In these conditions, RI is viewed as an asset or resource capability that can promote corporate risk resilience (Barney, 1991). Yet, only a small number of researchers have focused on the relationship between RI and BR (Singh, 2020). This is one reason why a deeper analysis of these two constructs is necessary. Also, how RI mediates between SF and BR remains unaddressed. Thus, this research puts forward the suppositions that:

S3. Strong RI in place will lead to greater BR.

S4. RI will positively intervene between SF and BR.

This research also draw on Barney's (1991) resource-based theory to shed light on the potential moderating impact of managerial and firm technology-focused innovation capacities. According to this theory, an SF system paired with MC and IC can produce a resilient RI. With the right managerial resources and a focus on innovation in management and technology, any company can transform its sustainable financing into a reliable RI. Yet, there have not been enough efforts to study MC, which is what ultimately decides why some organisations are better than others at performing tasks (Wu *et al.*, 2020). It is also not obvious whether MC can play a moderating effect between SF and RI.

Firms need to be innovative to thrive in an uncertain world (Johnson *et al.*, 1997). Their ability to innovate is a crucial resource for developing cutting-edge financial instruments (Nicholls, 2021). This will allow businesses to better prepare for and respond to future risks (Lawson and Samson, 2001). Nonetheless, it is still unclear whether or not IC can be paired with SF to produce a robust RI. At this gesture, this study offers the following suppositions:

S5. The SF–RI connection will be intensified when the MC of the firm is high than low.

S6. Firms with greater technology-focused IC will stimulate the SF–RI connection than those with lesser technology-focused IC.

3. Model development

The conceptual model resulting from the deliberations above is displayed in Figure 1. The suppositions are identified as *S*1, *S*2, *S*3, *S*4, *S*5 and *S*6. The suppositions explaining the potential favourable effect of SF on BR (*S*1), the possible favourable effects of SF on RI (*S*2), the probable favourable effect of RI on BR (*S*3) and the potentially mediating effect of RI between SF and BR (*S*4) are represented by solid appearances, whereas the dotted

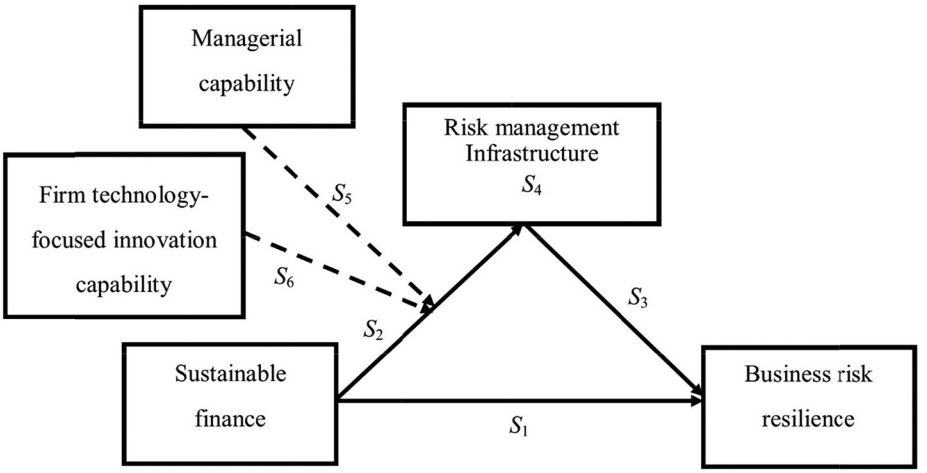

Figure 1.
Conceptual framework

Source: Figure by authors

appearances signify the potentially favourable context-contingent effects of MC (*S*5) and IC (*S*6) on the SF–RI nexus. This conceptual model, therefore, lengthens and integrates literature on five autonomous fields of learning: SF, RI, BR, MC and IC; the first being a *sustainability device*, the second being an *risk infrastructure device*, the third being a *risk resilience device*, the fourth being a *human resource device* and the fifth being an *innovation device*. Consequently, conceptual work exceeds one discipline, making it multi-disciplinary.

4. Research implications

Forthcoming studies may test this conceptual work and its suppositions, empirically, in diverse industries worldwide. In particular, they may examine how SF improves risk resilience of companies, empirically, as this relationship remain unexplored in literature. Secondly, upcoming studies could assess the way by which SF impacts on a company's RI empirically, as this impact has gone unnoticed. The level of a company's SF determines how well it can build a robust RI that can resist business disruptions caused by both internal and external risk factors (European Union, 2022). Thirdly, they may investigate how RI emboldens BR, empirically, because only a hand full of academics have concentrated on this relationship (Singh, 2020). Hence, there is the need for further investigation on this subject. Building an RI and other competitive qualities is the most effective approach for a company to survive unfavourable circumstances (Ambulkar *et al.*, 2016). Fourthly, they could examine the intervening effect of RI in the connection between SF and BR, empirically. This is because, according to Ahinful *et al.* (2023), research is not rigorous if it ignores mediating factors.

Fifthly, forthcoming studies may examine the moderating effect of MC between SF and RI empirically. Because, insufficient efforts have been made to investigate MC and its impacts. Also, MC determines why some organisations are more proficient than others when performing tasks (Wu *et al.*, 2020). Also, it is unclear whether MC can play a moderating effect in the connection between SF and RI. Businesses with strong managerial IC may be in a better position to transform their SF into a strong RI. Sixthly, they may ascertain how IC moderate the connection between SF and RI. Because, it is unclear whether or not IC can be

paired with SF to develop a robust RI. Firms need to be innovative to thrive in an uncertain world (Johnson *et al.*, 1997). Therefore, their ability to innovate is a crucial resource for developing cutting-edge financial instruments (Nicholls, 2021). This allows businesses to better prepare for and respond to future risks (Lawson and Samson, 2001).

5. Theoretical implications

Firstly, this conceptual work extends the concept of SF by demonstrating how SF can be a useful sustainability device for fostering a firm's RI and BR. Secondly, this conceptual work of art lengthens the concept of RI by showing how RI can be a suitable risk infrastructure device for promoting BR. Thirdly, this research shows how firm capabilities (MC concept, IC concept) can help firms to convert their SF into a robust RI.

Fourthly, this research elongates the information processing theory (Tushman and Nadler, 1978) by using this theory to explain how SF strengthens RI. It also explains how SF promotes BR by way of effectively using appropriate information from the external and internal environment. Fifthly, this conceptual work stretches Barney's (1991) resource-based theory by using this theory to illuminate four distinct relationships. Firstly, it illuminates how the RI can be a valuable asset or resource for promoting BR. Secondly, it expounds how RI can be a valuable asset or resource for connecting SF to BR. Thirdly, it explains how MC can be a useful asset or resource for transforming SF into a strong RI. Lastly, it explicates how IC can be a helpful asset or resource for turning SF into a solid RI for the good of the firm.

6. Practical implications

Firstly, this research provides practical lessons to finance and investment managers of companies on the need to create and offer more sustainable (green) financial options for their investors. Because, a new investor market has appeared. These investors will only make investments in "sustainable" investment instruments. The ability of the finance and investment managers to secure funding for their firms, for expansion and for curtailing business disruptions depends on how much sustainable financial instruments are made available to this new investor market.

Company investors, such as pension funds and insurance companies, should as a matter of priority update their long-term investment risk models to include governance, social and especially environmental considerations as material for their investment portfolios. Failure to do so may result in customers switching to other competitors who offer "greener" options.

Secondly, by updating long-term investment risk models to include governance, social and especially environmental considerations, corporate investors stand the chance of strengthening the risk resilience propensities of their firms. In seeking to invest in greener financial instruments, finance managers, investment managers and corporate investors should acquire, distribute and synthesise all aspects of information (that is finally processed) from the external and internal environment. This is necessary to make proper and sound financial decisions.

Thirdly, this conceptual work advises risk managers that, to properly manage risk and avoid business disruptions, they must put in place a framework of resources called an RI. The establishment of an RI will help a company to develop systems and processes. These systems and processes will aid in detecting and formulating risk treatment prescriptions for the numerous hazards affecting the company. Such an infrastructure must comprises the implementation of formal security procedures, the existence of risk managers, the deployment and development of business continuity plans and the establishment of emergency operations centres. This risk management resources must also include a risk management department,

information systems and key performance indicators and metrics. The risk management department (headed by the risk manager) should make use of the information systems and key performance indicators and metrics. This department must specialise in tasks and improve information exchanges. In so doing, better teamwork, knowledge sharing and joint issue solving will be more effective in lowering organisational hazards.

Fourth, this research is a wake-up call to risk managers and other line managers of firms on their role of converting the SFs of firms into a strong RI. This will make the firm withstand business disruptions from both external and internal environment. In this regard, their MC is put to test. These managers should be more than merely players in a game to efficiently distribute financial resources, using their managerial capabilities. They can boost their MCs by attending conferences, workshops, learning from the failures of competing firms, past experiences and other platforms. Lastly, this conceptual work is a reminder to firm managers, in general, on the need to enhance their ICs. Because, they are required to be innovative to survive in this unpredictable environment. The existence of this firm-specific "capability differential" will offer a sustainable competitive benefit via a variety of distinguishing capabilities.

References

Abubakar, L. and Handayani, T. (2020), "Green sukuk: sustainable financing instruments for infrastructure development in Indonesia", *1st Borobudur International Symposium on Humanities, Economics and Social Sciences (BIS-HESS 2019)*, Atlantis Press, pp. 983-987.

Ahinful, A.A., Opoku Mensah, A., Koomson, S., Nyarko, K.F. and Nkrumah, E.N.K. (2023), "A conceptual framework of total quality management on innovation performance in the banking sector", *The TQM Journal*.

Al Naimi, M., Faisal, M.N., Sobh, R. and Uddin, S.M.F. (2021), "Antecedents and consequences of supply chain resilience and reconfiguration: an empirical study in an emerging economy", *Journal of Enterprise Information Management*, Vol. 34 No. 6, pp. 1722-1745.

Alshubiri, F. and Alraja, M. (2022), "Guest editorial: green finance for support emergency services strategies and sustainable development goals (SDGs)", *International Journal of Emergency Services*, Vol. 11 No. 3, pp. 377-378.

Ambulkar, S., Blackhurst, J. and Grawe, S. (2015), "Firm's resilience to supply chain disruptions: scale development and empirical examination", *Journal of Operations Management*, Vol. 33-34 No. 1, pp. 111-122.

Ambulkar, S., Blackhurst, J.V. and Cantor, D.E. (2016), "Supply chain risk mitigation competency: an individual-level knowledge-based perspective", *International Journal of Production Research*, Vol. 54 No. 5, pp. 1398-1411.

Barney, J. (1986), "Organisational change: can it be a source of sustained competitive advantage?", *The Academy of Management Review*, Vol. 11 No. 3, pp. 656-665.

Barney, J. (1991), "Firm resources and sustained competitive advantage", *Journal of Management*, Vol. 17 No. 1, pp. 99-120.

Birkinshaw, J. and Gupta, K. (2013), "Clarifying the distinctive contribution of ambidexterity to the field of organisation studies", *Academy of Management Perspectives*, Vol. 27 No. 4, pp. 287-298.

Bonner, J.M., Ruekert, R.W. and Walker, O.C. Jr (2002), "Upper management control of new product development projects and project performance", *Journal of Product Innovation Management*, Vol. 19 No. 3, pp. 233-245.

Cantor, D.E., Blackhurst, J., Pan, M. and Crum, M. (2014), "Examining the role of stakeholder pressure and knowledge management on supply chain risk and demand responsiveness", *The International Journal of Logistics Management*, Vol. 25 No. 1, pp. 202-223.

Chirambo, D. (2017), "Enhancing climate change resilience through microfinance: redefining the climate finance paradigm to promote inclusive growth in Africa", *Journal of Developing Societies*, Vol. 33 No. 1, pp. 150-173.

Dierickx, L. and Cool, K. (1989), "Asset stock accumulation and sustainability", *Management Science*, Vol. 35 No. 12, pp. 1504-1511.

European Union (2022), "Overview of sustainable finance", available at: https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/overview-sustainable-finance_en (accessed 15 February 2023).

Forbes Media LLC (2023), "Millennials will inherit over $68 trillion from their baby boomer parents by the year 2030", available at: www.forbes.com/sites/jackkelly/2019/10/26/millennials-will-become-richest-generation-in-american-history-as-baby-boomers-transfer-over-their-wealth/#3dcc954b6c4b (accessed 15 February 2023).

Galbraith, J.R. (1974), "Organisation design: an information processing view", *Interfaces*, Vol. 4 No. 3, pp. 28-36.

Institutional Asset Manager (2023), "Alternative investment solutions", available at: www.institutionalassetmanager.co.uk/2020/05/19/285756/esg-will-be-industry-standard-within-five-years-say-institutional-investors (accessed on 15 February 2023).

Johnson, J.D., Meyer, M.E., Berkowitz, J.M., Miller, V. and Ethington, C.T. (1997), "Testing two contrasting structural models of innovativeness in a contractual network", *Human Communication Research*, Vol. 24 No. 2, pp. 320-348.

JPMorgan Chase and Company (2023), "Impact investing", available at: https://privatebank.jpmorgan.com/gl/en/services/investing/sustainable-investing/impact-investing (accessed 15 February 2023).

Kumar, S. and Anbanandam, R. (2020), "Impact of risk management culture on supply chain resilience: an empirical study from Indian manufacturing industry", *Proceedings of the Institution of Mechanical Engineers, Part O: Journal of Risk and Reliability*, Vol. 234 No. 2, pp. 246-259.

Lawson, B. and Samson, D. (2001), "Developing innovation capability in organisations: a dynamic capabilities approach", *International Journal of Innovation Management*, Vol. 5 No. 3, pp. 377-400.

Linnenluecke, M.K. (2017), "Resilience in business and management research: a review of influential publications and a research agenda", *International Journal of Management Reviews*, Vol. 19 No. 1, pp. 4-30.

Mahoney, J.T. and Pandian, R. (1992), "The resource-based view within the conversation of strategic management", *Strategic Management Journal*, Vol. 13 No. 5, pp. 368-380.

Mngumi, F., Shaorong, S., Shair, F. and Waqas, M. (2022), "Does green finance mitigate the effects of climate variability: role of renewable energy investment and infrastructure", *Environmental Science and Pollution Research*, Vol. 29 No. 39, pp. 59287-59299.

Moran, P. and Ghoshal, S. (1999), "Markets, firms and the process of economic development", *The Academy of Management Review*, Vol. 24 No. 3, pp. 390-412.

Nelson, R. and Winter, S. (1982), *An Evolutionary Theory of Economic Change*, Harvard University Press, Cambridge.

Nguyen, D., Nguyen, T., Nguyen, X., Do, T. and Ngo, H. (2022), "The effect of supply chain finance on supply chain risk, supply chain risk resilience, and performance of Vietnam SMEs in global supply chain", *Uncertain Supply Chain Management*, Vol. 10 No. 1, pp. 225-238.

Nicholls, A. (2021), "Sustainable finance: a primer and recent developments", *Asian Development Outlook*, pp. 1-51.

Penrose, E. (1959), *The Theory of the Growth of the Firm*, John Wiley New York, NY.

Peteraf, M. (1993), "The cornerstone of competitive advantage: a resource-based view", *Strategic Management Journal*, Vol. 14 No. 3, pp. 179-191.

Rajesh, R. (2017), "Technological capabilities and supply chain resilience of firms: a relational analysis using total interpretive structural modeling (TISM)", *Technological Forecasting and Social Change*, Vol. 118, pp. 161-169.

Revilla, E. and Saenz, M.J. (2017), "The impact of risk management on the frequency of supply chain disruptions. a configurational approach", *International Journal of Operations and Production Management*, Vol. 37 No. 5, pp. 557-576.

Sabahi, S. and Parast, M.M. (2020), "Firm innovation and supply chain resilience: a dynamic capability perspective", *International Journal of Logistics Research and Applications*, Vol. 23 No. 3, pp. 254-269.

Sáenz, M.J. and Revilla, E. (2014), "Creating more resilient supply chains", *MIT Sloan Management Review*, Vol. 55 No. 4, pp. 22-24.

Samson, D. and Gloet, M. (2018), "Integrating performance and risk aspects of supply chain design processes", *Production Planning and Control*, Vol. 29 No. 15, pp. 1238-1257.

Singh, N. (2020), "Developing business risk resilience through risk management infrastructure: the moderating role of big data analytics", *Information Systems Management*, Vol. 39 No. 1, pp. 34-52.

Teece, D.J., Pisano, G. and Shuen, A. (1997), "Dynamic capabilities and strategic management", *Strategic Management Journal*, Vol. 18 No. 7, pp. 509-533.

Tushman, M.L. and Nadler, D.A. (1978), "Information processing as an integrating concept in organisational design", *The Academy of Management Review*, Vol. 3 No. 3, pp. 613-624.

UNA-UK (2019), "SDGs: transforming our world", available at: www.sustainablegoals.org.uk/filling-the-finance-gap/ (accessed 17 February 2023).

Weerawardena, J. and McColl-Kennedy, J.R. (2002), "New service development and competitive advantage: a conceptual model", *Australasian Marketing Journal*, Vol. 10 No. 1, pp. 13-23.

Wernerfelt, B. (1984), "A resource-based view of the firm", *Strategic Management Journal*, Vol. 5 No. 2, pp. 171-180.

Wu, J., Wood, G., Chen, X., Meyer, M. and Liu, Z. (2020), "Strategic ambidexterity and innovation in Chinese multinational vs. indigenous firms: the role of managerial capability", *International Business Review*, Vol. 29 No. 6, pp. 1-8.

Yuan, Y. and Li, W. (2022), "The effects of supply chain risk information processing capability and supply chain finance on supply chain resilience: a moderated and mediated model", *Journal of Enterprise Information Management*, Vol. 35 No. 6, pp. 1592-1612.

Corresponding author
Samuel Koomson can be contacted at: skoomson68@gmail.com