Service employees' perceptions of organizational vulnerability from macro-level risks and how innovativeness mitigates their impact

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Abstract
Purpose – This paper aims to explore how service employees, who often integrate the organization they work for into their identity, can be affected by macro-level risks and the resulting financial vulnerability of their service organization. In addition, it investigates whether innovativeness, a characteristic of the service organization, can alleviate these adverse effects, particularly on firm financial performance and mental well-being.

Design/methodology/approach – This research develops a conceptual model underpinned by protection motivation theory (PMT) with data used from an online survey of service employees ($n = 365$). The hypotheses and data are tested using MANCOVA and spotlight moderated-mediation analysis.

Findings – The results demonstrate the empirical impact of macro-level risks (financial and health) on service employees' mental well-being and perceptions of firm financial performance. Financial vulnerability emerged as a key mediator in these relationships. Moreover, the findings indicate that high levels of innovativeness within service organizations can help maintain higher levels of mental well-being and perceptions of financial performance but this is only when risks are perceived as low from macro-level events.

Originality/value – This research broadens the discourse on vulnerability, extending it beyond consumer actors to illuminate the distinct challenges encountered by service employees. In addition, it advances theoretical frameworks by blending ideas from PMT and emphasizing the significance of incorporating deficit and strength-based perspectives in service research. This research argues that this offers a complete comprehension of vulnerability experiences, transcending debates about the exclusivity or superiority of these approaches to considering and understanding experiences of vulnerability.

Keywords Innovation, Vulnerability, Perceived risk, Protection motivation theory

Paper type Research paper

Introduction

The concept of vulnerability has gained increasing attention in service literature (Fisk *et al.*, 2018; Hill and Sharma, 2020; Riedel *et al.*, 2022, 2023), particularly concerning consumers. However, Riedel *et al.* (2023) argue for broader exploration beyond consumer vulnerability to include other service actors such as service employees, individuals who work in roles that either interact with consumers or are a part of a service-orientated business. This paper addresses this call by examining vulnerability experiences among service employees and strategies to mitigate them. It suggests that service employees may experience vulnerability indirectly through assessments of their organization's vulnerability, which can potentially lead to adverse effects on their mental health.

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To address this, this research delves into whether service employees assess risks stemming from external macro-level market conditions and significant occurrences or disruptions that impact the service ecosystem. This research also examines service employees' evaluation of the financial vulnerability of their service organization and how this assessment influences both their individual well-being and the organization's financial performance. Furthermore, this research explores the potential of fostering an innovative mindset within service organizations to mitigate the adverse effects of vulnerability experiences.

The disparity in considering service employees' experiences of vulnerability compared to consumers' vulnerability (Riedel *et al.*, 2022, 2023) is particularly notable, especially considering recent macro-level events such as the COVID-19 pandemic, which have intensified perceptions of risk and vulnerability within the service industry (Sreelakshmi and Prathap, 2024; Mulcahy *et al.*, 2022). Scholars have emphasized the importance of not overlooking service employees in the aftermath of such events (Voorhees *et al.*, 2020). Despite these calls and the recognition that macro-level events can trigger experiences of risk and subsequent vulnerability, research on service employees still lags behind studies focused on consumers. This is significant given that, beyond the service literature, studies have revealed substantial connections between perceptions of risk, employee well-being and organizational outcomes (Zhang and Li, 2019).

Service employees represent a unique service actor within the service ecosystem as they embody both individual and collective identities within a service organization. For example, service employees may feel a sense ownership, or that "they are (in part) the organisation" as evidenced by prior literature (Avey *et al.*, 2012; Dawkins *et al.*, 2017). Yet, the exploration of how experiences of vulnerability may similarly manifest among service employees remains largely under explained in the current service literature. Furthermore, how service employees assess macro-level risks remains largely unexplored. These risks include systemic threats that affect entire economies, industries or societies, such as economic recessions, pandemics, natural disasters and technological disruptions. In addition, their experiences of vulnerability within their service organization, along with the potential psychological impact of these experiences, have not been thoroughly investigated. To advance knowledge in the service domain and bridge these literature streams, this research proposes and empirically tests how macro-level risks shape service employees' well-being and perceptions of service firm performance. This research and associated data were conducted during the macro-level service disruption caused by the COVID-19 pandemic (Kabadayi *et al.*, 2020), a period characterised by heightened physical (impacts on well-being) and financial (loss of income or financial stability) risks (Mulcahy *et al.*, 2023). However, similar to the previously mentioned limitations in vulnerability literature, there is still a lack of detailed exploration in the literature regarding these risks and their impact on other service actors, such as service employees, during the COVID-19 pandemic. This leads to the first research question considered by this research:

RQ1. How do macro-level risks influence perceived financial performance of the service organization and the mental well-being of the service employees?

In prior literature, theories and suggestions have emerged regarding the significance of perceptions of risk in shaping experiences of vulnerability (Mulcahy *et al.*, 2022; Muñoz-Mazón *et al.*, 2021). However, while assumptions and theorizing suggest an inherent link between risk and vulnerability, there exists an empirical gap in evidence supporting this connection. This empirical gap in the service literature also persists concerning whether perceptions of risk among service employees contribute to experiences or evaluations of vulnerability, both directly (as individuals) and indirectly (as part of the collective service organization). This research focuses on experiences of vulnerability, specifically on the financial vulnerability of a service organization, defined for this research as subjective feelings of distress, worry or concern about a service organization being susceptible to financial hardship (Chipunza and Fanta, 2023; Hampson *et al.*, 2021).

The literature suggests that vulnerability concerning financial situations can be an important consideration as an outcome or explanatory mechanism (Hampson *et al.*, 2021; Hoffmann *et al.*, 2021). Yet, studies demonstrating what contributes to experiences of financial vulnerability, and ultimately how this serves as an explanatory mechanism (mediator) to illustrate the downstream effects of perceptions of risk of a macro-level event, have yet to be thoroughly considered. Consequently, the service marketing and vulnerability literature falls short in explaining how financial vulnerability can function as a mediator to elucidate how perceptions of macro-level events' risk may have adverse effects on well-being and firm performance outcomes as experienced by service employees. Therefore, the second research question of this research is:

RQ2. Does financial vulnerability mediate the relationship between both financial performance and mental well-being outcomes for service employees?

This research also seeks to respond to calls for embracing more strength-based perspectives on vulnerability (Raciti *et al.*, 2022) by exploring the strengths and capabilities of service organizations to address a situation of vulnerability, rather than solely focusing on individuals. In this way, this research explores innovation as a strength providing resilience against experiences or situations that may cause vulnerability. This research also aims to test the notion that the innovativeness of a service organization as a mindset – marked by openness to new ideas, creative thinking and a readiness to explore unconventional solutions – could mitigate the negative consequences of financial vulnerability that could be experienced by service employees, and in essence become more resilient to its effects.

Drawing on previous research indicating that organizations with higher innovativeness are more resilient in handling adverse situations effectively (Neise *et al.*, 2021; Schwaiger *et al.*, 2022), this research explores whether innovativeness contributes to resilience against the impact of financial vulnerability on well-being and firm performance. Previous research has tentatively suggested that resilience can be fostered in organizations with a higher propensity to innovate (Fehrer and Bove, 2022; Heinonen and Strandvik, 2020; Hameed *et al.*, 2021). Specifically, this research investigates how service organization innovativeness as a mindset can help build resilience against macro-level risks and their adverse impacts on firm performance and well-being. Therefore, the third and final research question of this research is:

RQ3. How does a service organization's innovativeness influence the impact of financial vulnerability?

This research contributes in three main ways. Firstly, it broadens the focus from consumers to other actors within the service ecosystem, like service employees, exploring how they experience risk and its impacts. This research aims to address the existing gap in understanding the antecedents and consequences of vulnerability experienced by service employees. It expands on the conceptual framework of Riedel *et al.* (2023) by incorporating a specific measurement of vulnerability, including financial aspects, as well as more nuanced organizational outcomes (such as firm financial performance) and employee-specific outcomes (such as mental well-being). Furthermore, instead of focusing on job characteristics as antecedents of vulnerability, this research examines the risks associated with market instability resulting from service mega-disruptions.

Secondly, it applies protection motivation theory (PMT) to show how financial vulnerability mediates the impact of risk on financial and well-being outcomes for service employees and organizations. In using this framework, this research demonstrates how both strength and deficit perspectives of vulnerability can be simultaneously considered to provide both a view to problem identification and also potential solutions to experiences of vulnerability. Finally, it illustrates how service organization innovativeness can serve as a strength and resource of resilience against vulnerability to aid service employees in mitigating and building resilience against the negative impacts of vulnerability on organizational outcomes and well-being.

The paper proceeds as follows: a literature review on key study concepts beginning with service employees and experiences of vulnerability presented, followed by hypothesis presentation and justification grounded in PMT. Next, the research's methodology and results are presented, followed by discussions on theoretical and practical contributions. The paper concludes with limitations and directions for future research.

Literature review

Service employees' experiences of vulnerability

Service employees play a critical role in the service ecosystem by acting as a bridge between service organizations and consumers (Lages and Piercy, 2012; Riedel *et al.*, 2023). However, recent literature highlights that unlike consumers, service employees have been relatively neglected in studies addressing their vulnerability (Riedel *et al.*, 2023; see Table 1 for a review of related literature). Outside of marketing literature, employee vulnerability has received limited attention in HR and management research with the notable exception of Baker and Kim (2024), who explore how consumer incivility affects employee vulnerability and job performance. In contrast, much of the HR and management research has focused on resilience (Baird *et al.*, 2024; Näswall *et al.*, 2019). Even within studies on resilience, there has been limited exploration of how macro-level risks impact resilience and their subsequent effects on mental well-being and organizational outcomes, such as financial performance.

To address this limitation in understanding of vulnerability for the service actor of employees, this research argues that service employees not only experience vulnerability individually but also perceive or experience it on behalf of the service organization, becoming part of their collective identity. Research shows that service employees often integrate the organization they work for into their self-appraisal, forming part of their identity (Wheeler *et al.*, 2006). For example, Chung and Byrom (2021) emphasize the significance of organizational identity in co-creating brand identity, where shared beliefs about "who we are as an organization" are central.

Supporting this, literature highlights the strong psychological ownership that employees develop towards their organizations. Studies indicate that employees feel responsible for making decisions in the organization's long-term interest (Avey *et al.*, 2012; Dawkins *et al.*, 2017) and can develop a deep sense of ownership over it (Dawkins *et al.*, 2017). Service employees, in line with this literature, can perceive the organization they work for as "my business" or "my organization" as an extension of themselves due to a strong sense of ownership as well as a collective identity, whereby they are a part of a larger group identity. For instance, in support of this consideration, Luo *et al.* (2017) use scales such as group commitment and collective identity with items like "I really feel that the department goals are my own", to measure this sense of collective identity and whereby the achievements of the organization are also considered by the individual employee. Similarly, organizational identification has been shown to be measured by employee responses to items such as "this company's successes are my successes", as demonstrated by Marstand *et al.* (2021). These measures indicate that there is potential to extend this thinking to employees' perceptions of financial vulnerability, reflecting their deep personal connection to the organization. Consequently, service employees may vicariously process risks and vulnerabilities on behalf of the organization (at a collective identity level), impacting their well-being (individual identity level).

Research on vulnerability among consumers has echoed similar sentiments, suggesting that intermediaries, bystanders or secondary consumers can either empathize or vicariously experience vulnerability on behalf of others (Johns and Davey, 2019; Mulcahy *et al.*, 2023; Sudbury-Riley *et al.*, 2024). Indeed, the work of Johns and Davey (2019) on transformative service mediators discusses the importance of considering collectives stating that where several individuals can be aligned with a focal actor, in their case the consumer, experiences of vulnerability can impact the "collective".

From a similar but different perspective, Mulcahy *et al.* (2023) demonstrate how consumers can feel psychological reactance when witnessing a service organization they may patronize being trolled, mainly due to empathizing and "feeling" this on behalf of the organization. Thus, this research

Table 1 Macro-level events, vulnerability and innovation literature summary

Author(s)/Year	Macro-level event	Actor focus	PR	FinVul	FinPer	WB	Inno	Main findings
Turulja and Bajgoric (2019)	Turbulent markets	B			Y		Y	• Product and process innovations positively influence firm's business performance
Ghasemaghaei and Calic (2020)	N/A	B			Y		Y	• Innovation efficiency and efficacy increases firm performance, which includes financial returns, operational excellence and customer perspective
Heinonen and Strandvik (2020)	COVID-19 pandemic	C					Y	• Imposed service innovations were examined in terms of their strategic horizon and strategic stretch. The innovations are characterized by spatial flexibility, social and health outreach and exploitation of technology
Hameed *et al.* (2021)	N/A	SE			Y		Y	• Firm's open innovation performance increases the likelihood of service innovation and subsequently improves business performance
Hampson *et al.* (2021)	N/A	C		Y				• Financial vulnerability increases price conscious behaviour
Hoffmann *et al.* (2021)	N/A	C		Y				• Consumers in a state of lower vulnerability are "fragile" in having a relatively high likelihood of moving to a state of higher vulnerability
Yazdanparast and Alhenawi (2022)	COVID-19 pandemic	C		Y				• Vulnerability can result in increased spending on products/services that are not necessities.
Current study	COVID-19 Pandemic	SE	Health and financial	Y	Y	Y	Firm innovativeness (mindset)	• See Section 5

Note(s): PR = perceived Risk; FinVul = financial vulnerability; finPer = financial performance; WB = well-being; *Inn* = innovation; actor Focus Key B = business; C = Customer; SE = service employee
Source(s): Authors' own work

extends upon the views of employee–brand identification (Hughes and Ahearne, 2010), and current vulnerability and bystander literature in services, to consider that service employees may feel and experience the vulnerability of their service organization, given the integration of their self and collective identity. When considering the integration of self and collective identity of service employees with the service organization, two potentially important outcomes emerge that may result from experiences of vulnerability: the financial performance and viability of the organization (a collective identity outcome), and the mental health of the service employee (an individual identity outcome).

Firstly, in relation to financial performance, service employees may assess their organization's financial stability and susceptibility to vulnerabilities. In this research, financial performance is conceptualized as a collective identity outcome. To examine this, we collected primary data on employees' perceptions of financial performance, consistent with prior marketing research (O'Sullivan and Abela, 2007; Zhang *et al.*, 2021). Service employees, often acting as boundary spanners, play a critical role in personalizing and contextualizing services to meet diverse customer needs and maintain firm performance (Bettencourt and Brown, 2003; Yoo *et al.*, 2014). However, this adaptability can lead to stress, especially under challenging circumstances. For instance, during the COVID-19 pandemic, increased role complexity and heightened demands for adaptation exacerbated stress levels, posing significant challenges to maintaining service organization performance (Luu, 2021; Yu *et al.*, 2021).

Tentative evidence supports the consideration of individuals' feelings of vulnerability (or alternatively confidence) on organizational performance outcomes. For instance, Miao *et al.* (2017) demonstrates that entrepreneurial self-efficacy, somewhat opposing vulnerability, positively associates with firm performance. In the hotel and tourism sector, Prayag and Dassanayake (2023) find that employee resilience positively impacts both organizational resilience and firm financial performance. Thus, given the reviewed evidence, evaluating financial performance as a collective identity outcome, influenced by risks and vulnerability experiences, is worthy of consideration.

Secondly, the mental health of service employees warrants attention in current research to understand whether their experiences and evaluations of vulnerability within a service organization impact not only their own well-being but also the collective identity of the organization. Well-being has long been a critical outcome in service research, particularly within the domain of (transformative service research) TSR. For this research, mental well-being is a central focus due to the significant impact of COVID-19 and related stresses on both individual and employee mental health (Yu *et al.*, 2021). This focus is also aligned with other TSR studies that specifically address this aspect of well-being (Schuster *et al.*, 2015). Prior research supports a strong link between an organization's performance or current condition and employee well-being (Brown and Leite, 2023; Wegge *et al.*, 2006). This concept is based on the idea that if service employees perceive their organization – integral to their identity – as vulnerable, it is likely to negatively impact their mental well-being. Prior research supports the association between how an organization performs, or its current condition, demonstrating a robust link between organizational conditions' evaluation and well-being outcomes for employees (Brown and Leite, 2023; Wegge *et al.*, 2006). This concept is rooted in the belief that if service employees perceive their organization (intertwined with their identity) as vulnerable, it will likely adversely affect their mental well-being.

In summary, this research acknowledges that a service employee possesses both self and collective identities. It focuses on collective identity, where experiences of risk and vulnerability on behalf of the service organization are central. Furthermore, the research evaluates the impact of macro-level risks and vulnerability on both firm financial performance and service employee mental well-being, areas yet to be connected or considered as demonstrated in the overview of the literature in Table 1. Next, the guiding theory is reviewed, followed by the presentation of the hypotheses, which define and justify the potential relationships between the concepts of interest.

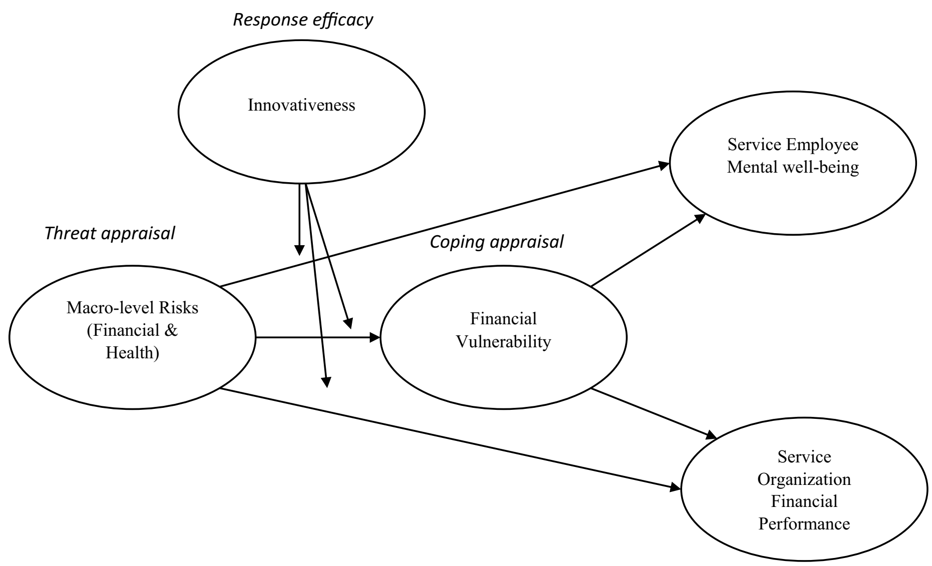
Theoretical background and hypothesis development

Prior to delineating the roles and interactions of the concepts of interest, the PMT (Rogers, 1975) was selected as the guiding theoretical framework for the proposed network depicted in Figure 1. Although not extensively used in services marketing, PMT has proven valuable in related disciplines, such as social marketing, offering insights into how individuals perceive and respond to potential threats or risks associated with the COVID-19 pandemic (Rahi, 2023; Tweneboah-Koduah and Coffie, 2022), aligning with this research's objectives.

PMT, unlike other theories in the service literature such as cognitive appraisal theory or resilience theory, integrates both deficit and strength perspectives. Cognitive appraisal theory has been criticized for focusing primarily on negative outcomes and stress (a deficit perspective) (Vada *et al.*, 2020), whereas resilience theory is often associated with a strength-oriented approach emphasizing resources and flourishing (Van Breda, 2018). This research argues that PMT offers a complementary perspective by addressing both challenging and vulnerable situations and the responses and resilience factors that contribute to positive well-being and organizational outcomes.

In addition, PMT aligns with ongoing discussions in the service literature about different perspectives on vulnerability. There is current debate on deficit-based versus strength-based views of vulnerability (Raciti *et al.*, 2022; Kabadayi *et al.*, 2023). For example, some have argued that a deficit perspective may be detrimental to both the field of marketing and consumers (Fisk *et al.*, 2023), whereas others suggest that focusing solely on strength-based approaches may overlook areas where support or intervention is needed (Kabadayi *et al.*, 2023). This research does not take a side in this debate but aims to reconcile these views by showing how PMT can address the negative consequences of vulnerability through threat and coping appraisal, while also exploring how individuals can leverage strengths to mitigate these consequences through response efficacy. This approach supports Kabadayi *et al.* (2023) in their assertion that both deficit and strength-based approaches are crucial for maximizing well-being outcomes and minimizing unintended negative consequences.

Figure 1 Conceptual model informed by PMT



Note(s): Italics indicate guiding princViples of PMT
Source(s): Authors' own work

Three key components of PMT (threat appraisal, coping appraisal and response efficacy) provide a basis for the hypothesized relationships. Risk perceptions are regarded as the foundation for threat appraisal, whereas financial vulnerability is posited as the basis for coping appraisal, consistent with PMT components and justified shortly. The moderator, service organization innovativeness, is proposed to influence individuals as a form of response efficacy according to PMT. Specifically, it is hypothesized that higher levels of innovation will mitigate the impact of coping appraisal, particularly financial vulnerability, on financial performance, work–life balance and mental health outcomes (Figure 1).

Macro-level risk perceptions as a threat appraisal

This research adopts Rather's (2021) definition of perceived risk as "the degree of potential loss perceived or experienced by individuals resulting from unfavourable outcomes" (p.4). Marketing and service scholarship examining the impact of COVID-19 has discussed the health risks and impacts posed by COVID-19 to consumers (Yu *et al.*, 2021) as well as the subsequent financial difficulties (e.g. job loss or income) (Posel *et al.*, 2021). Given that macro-level events, such as the COVID-19 pandemic, can be complex and present multiple co-occurring challenges (Zafari *et al.*, 2020), assessing perceived risk as a multidimensional construct that includes both financial and health risks allow for a more complete consideration of such situations. Furthermore, during periods of uncertainty caused by uncontrollable macro-level events in the service ecosystem (e.g. recessions, pandemics, disasters), it is likely that service employees will perceive or experience financial risks for the organization, especially if their psychological ownership and collective identity are closely tied to the organization they work for (Avey *et al.*, 2012; Dawkins *et al.*, 2017). However, in the context of the focal macro-level event, the COVID-19 pandemic, it is argued that in addition to financial risks, there are also perceptions of health risks that should be considered, whereby the service employee contemplates the potential health risk that could be experienced by their colleagues.

When analysing the financial and health risks stemming from a service mega-disruption such as the COVID-19 using PMT as a threat appraisal (Rogers, 1975), the perceived severity and susceptibility inherent in this theory provide insight into how these risks affect both the mental well-being and perceived financial performance of service organizations. Service employees may view the pandemic-related financial and health risks as severe and probable, heightening their threat perception. These perceived risks can significantly impact the mental well-being of stakeholders within the organization leading to increased stress, anxiety and uncertainty about financial stability. In addition, the perceived threat of financial risks can influence stakeholders' perceptions of the organization's financial performance. Elevated levels of perceived financial risk may lead to anticipation of negative financial outcomes, such as reduced revenue or stability, thus lowering perceptions of financial performance. If financial and health risks align with PMT as a threat appraisal, the following associations with mental well-being and perceived financial performance should be observed:

H1. Lower levels of financial (a) and health risk (b) will be associated with significantly higher levels of financial performance and mental well-being.

Financial vulnerability as a coping appraisal

Vulnerability is a concept that captures unique and subjective experiences where states or conditions lead to experiences of a sense of powerlessness or potential for harm (Riedel *et al.*, 2022, 2023). This research specifically investigates one aspect of financial vulnerability, which can be conceptualized as the subjective feelings of distress, worry or concern that a service employee perceives when considering the possibility that a service organization could be susceptible to financial hardship (Bayuk *et al.*, 2022; Hampson *et al.*, 2021). Prior marketing and service research suggests that experiencing vulnerability can shape or explain how individuals, namely, consumers, respond to different situations in the marketplace (for a comprehensive review, see Riedel *et al.*, 2022). Research also demonstrates that the COVID-19 pandemic and its impact upon individuals and societies has increased perceptions of vulnerability (Yazdanparast and Alhenawi, 2022).

In the current services marketing literature, studies of individuals within a service organization (service employees) and their perceptions of financial vulnerability are nascent. Instead, of the limited research that has been conducted on financial vulnerability, most studies focus on how this state is experienced by consumers (Bayuk *et al.*, 2022; Hampson *et al.*, 2021; Hoffmann *et al.*, 2021), despite the fact that other market actors, such as service employees, also face such experiences during service mega-disruptions. For instance, Bayuk *et al.* (2022) examine how consumers with low versus high financial vulnerability become more aware of their financial situation depending on the level of judgement they perceive from others. Furthermore, Hampson *et al.* (2021) demonstrate how external stressors, such as market confidence impact price-conscious behaviour, with perceptions of financial vulnerability serving as a mediator. Building on their research, this research seeks to extend knowledge by examining the mediating role of financial vulnerability for service employees within a service organization in response to a service mega-disruption (external stressor), such as COVID-19, by drawing on PMT and relevant literature.

This research also theorizes that financial vulnerability will act as a coping appraisal, mediating the effect of macro-level risk perceptions on financial performance and mental well-being. In this context, vulnerability is viewed as indicative of low coping capacity, in contrast to resilience, which represents high coping levels (Monferrer Tirado and Tena, 2024; Satici, 2016). In this view, vulnerability and resilience are considered as being at the opposite ends of the coping spectrum. Resilience reflects effective coping strategies and the ability to thrive, despite adversity, whereas vulnerability indicates low levels of coping appraisal. According to resilience theory (Zimmerman, 2013), resilience involves managing and adapting to stressors effectively, and maintaining stability, despite challenges. In this research, it is considered that high levels of coping involve adaptive responses that mitigate stressors, demonstrating resilience, whereas low levels of coping, indicative of vulnerability, reflect difficulties in managing stress and a higher susceptibility to negative outcomes.

Supporting the notion that financial vulnerability may mediate the relationship between perceived risk and financial performance, it is proposed that when individuals view their organization as financially vulnerable due to high-risk levels, this perception may stem from limited coping abilities, financial constraints or difficulties in meeting obligations. A recent meta-analysis by Riedel *et al.* (2023) reinforces this idea, highlighting how organizational resources significantly predict vulnerability and subsequent outcomes. Elevated perceptions of risk (threat appraisal) and financial vulnerability (coping appraisal) are likely to lead service employees to believe that the organization's financial performance – encompassing aspects such as cash flow, investment opportunities and growth – will be adversely affected. This is further supported by existing literature, which suggests that "greater risk represents vulnerability and uncertainty in future cash flow [firm performance]" (p. 648). Therefore, based on the preceding discussion, the following hypothesis is proposed:

H2a. Financial vulnerability will mediate the association of perceptions of risk (health and financial) on financial performance.

The uncertainty and stress associated with risk can diminish an individual's positive state, as indicated by prior research (Kim and Lennon, 2013). Consequently, financial vulnerability resulting from heightened perceived risk may exacerbate these negative psychological experiences. This could manifest as service employees anticipate the organization struggling with financial burdens such as debt, inability to meet financial goals or fear of financial collapse. If employees identify strongly with the organization (collective self) as suggested by prior literature (Avey *et al.*, 2012; Dawkins *et al.*, 2017), this strain may negatively impact their own mental well-being. Previous research supports this notion, demonstrating that individuals facing financial hardship often exhibit higher levels of depressive symptoms and anxiety (Marshall *et al.*, 2021).

While there may be concerns about an individual's ability to perceive or evaluate collective organizational outcomes (Luo *et al.*, 2017; Marstand *et al.*, 2021), research shows that individuals possess various forms of identity, including both individual and collective aspects. In line with this, this research seeks to go beyond exploring how assessing risks and financial vulnerability at a collective level (impact on the organization), from the perspective of a service employee may influence both individual outcomes (such as mental well-being) and collective outcomes (such as firm performance). Thus, the sequential perception of risk and the belief that the service organization is financially vulnerable could ultimately lead to diminished individual mental well-being due to the interwoven nature of employees' identities as individuals and as part of the service organization. Thus, the sequential perception of risk and the belief that the service organization is financially vulnerable could ultimately lead to diminished individual mental well-being, given the interwoven nature of employees' identities as individuals (themselves) and as part of the service organization (themselves as part of the organization). Hypothesized formally as:

H2b. Financial vulnerability will mediate the association of perceptions of risk (health and financial) on mental well-being.

Innovativeness as a form of response efficacy

Innovativeness reflects a company's tendency for generating new ideas and shaping its culture and mindset (Tsai and Yang, 2013). From this perspective, innovativeness as a mindset signifies a service organization's climate of fostering a culture of generating new ideas, and or adapting to change, are embraced and put into action. Innovation can have upsides and downsides. For example, research has noted how innovation can help service organizations (Heinonen and Strandvik, 2020). However, innovation, as well as the related area of being entrepreneurial, are inherently risk-taking behaviours (García-Granero *et al.*, 2015), where certainty and outcomes are not always assured, and they have the potential to increase stress and internal conflict (Mariano and Casey, 2015). In line with other work, we focus on the upside of innovation, particularly considering how during mega-disruptions or market turbulence innovation may be used as a response to generate resilience to vulnerability and risks for both employees and the organization (Senbeto and Hon, 2020). This is due to prior research showing innovation's role in improving service organization financial performance (Theodosiou *et al.*, 2012; Turulja and Bajgoric, 2019). Recent marketing and service studies have also highlighted innovations advantages during macro-level events like the COVID-19 pandemic, the specific mega-disruption of focus for this research (Heinonen and Strandvik, 2020; Wang *et al.*, 2020).

This research suggests that service organization innovativeness may help build resilience against the adverse effects of financial vulnerability on mental well-being, especially during macro-level disruptions. Although existing research is limited, Tafvelin *et al.* (2011) tentatively suggest that an innovative climate can boost well-being. However, their study does not explore the role of innovation mindset within service organizations, or its impact on bolstering resilience among service employees during macro-level events. Instead, innovation literature mainly focuses on how it supports creativity and enhances strategy.

When considering the PMT, perceiving a firm as highly innovative should lead to increased levels of response efficacy. This means that service employees are more likely to believe that a service organization can effectively respond to a macro-level disruptive event. Consequently, the higher the perceived level of firm innovativeness, the greater an individual's confidence in the service organization's ability to take effective actions to mitigate financial vulnerability. Service organizations that are perceived as highly innovative are likely to foster response efficacy. These service organizations could therefore be perceived as likely to undertake innovative solutions that provide a sense of control, even in macro-level descriptive events. This is hypothesized formally as:

H3. The indirect impact of perceived risk on financial performance and mental well-being through financial vulnerability will be moderated by perceived innovativeness. Specifically, this effect will be weaker when perceived innovativeness is higher, compared to when it is lower.

Method

Data collection and sample

To test the conceptual model and its hypothesized relationships, this research used an online survey as the main data collection instrument, which was deployed in March 2021 and June 2021. Notably, at this time, the COVID-19 pandemic was a service mega-disruption, which brought about numerous macro-level disruptions, including on consumer behaviour, supply chains and other marketplace forces (Kabadayi *et al.*, 2020). To identify potential service employees, the researchers collaborated with a local business chamber of commerce, who has a database of service organizations. On behalf of the research team, the local chamber of commerce emailed an invitation to potential service employee participants to take part in this research. For the purposes of the service employee sample, a market research company was employed to assist with data collection. Ethical clearance for this research was also granted by the lead institution (ethical approval number: A211516). The final sample comprised of 365 participants with the majority identifying as female 53.6%, being between 45 and 54 years of age (24.9%) and being in a non-managerial or supervisory position within their service organization (68.9%).

Instrument development

The survey measurement items were all based upon prior validated scales in the literature and adapted for the purpose and setting of this research. Two items each for financial risk and health risk related to COVID-19 were adapted from the study by Bae and Chang (2021), which have also been used in other vulnerability studies (Mulcahy *et al.*, 2023). Rather than using the entire scale, we opted for a shorter version due to the time-poor nature of the sample and to mitigate respondent fatigue. In addition, as suggested by Iacobucci (2009), using more than four items can be excessive. The moderator, innovativeness, was measured using items developed based upon the study by Santos-Vijande and Álvarez-González (2007). Four items, adapted from the study by Zhang *et al.* (2021), were used for financial performance. For negative mental well-being, two items were adapted from the (Patient Health Questionnaire) PHQ-2 scale (Carey *et al.*, 2015).

Covariate (control) variables

To enhance the robustness of the results and rule out potential competing explanations for the results (confounds), three aspects of the sample were controlled for as covariates within the analysis role within service organization (1 = employee and 2 = owner/manager), the service industry the organization functioned within, as well as service organization size, which was captured by the number of employees within the organization.

It was considered necessary to account for the individual's role within a service organization, as perceptions may vary based on this characteristic. In addition, controlling for the individual's role within an organization aligns with previous literature (Schweisfurth and Raasch, 2018; Yanadori and Marler, 2006). By including the service organization role as a covariate in the analysis, the results can be interpreted in light of different perspectives within the organization (such as manager versus employee). Similarly, it was deemed necessary to control for the industry in which the service organization operates. The significant disruption caused by COVID-19 was particularly notable in industries reliant on face-to-face interaction or transportation (e.g. tourism). Controlling for industry ensures that such circumstances, or other differences across industries, do not offer alternative explanations for the observed significant associations between the variables. Firm size was also controlled to be consistent with previous literature noting its impact upon firm performance (O'Sullivan and Abela, 2007), as well as the likelihood that larger firms could potentially have more financial resources or reserves to deal with service mega-disruptions, and thus be less financially vulnerable.

Instrument validation

Prior to testing the hypotheses, the construct scales were assessed for convergent and discriminant validity via confirmatory factor analysis using AMOS 27.0. The measurement model had a good fit to the data (CMIN/DF = 1.78, CFI = 0.97, RMSEA = 0.04). The χ^2 is 1.88, which is below the recommended level of 3 (Fornell and Larcker, 1981), indicating a good model fit. Next, following the procedures suggested in the literature (Bagozzi and Yi, 1988; Fornell and Larcker, 1981), convergent validity was tested by verifying the significance of the *t*-values associated with the items. As evidenced in Table 2, loadings for all items had factor loadings above 0.77 and significantly significant *t*-values ($p < 0.01$), confirming convergent validity.

In Table 2, the reliability of the scales was also confirmed with high Cronbach's alpha scores ranging from 0.73 to 93, further demonstrated the reliability of the measures. Next, discriminant validity was assessed using the average variance extracted scores and comparing them with the squared correlations of each construct. The AVE scores were all above 0.50, which exceeded the maximum squared correlation score of 0.32, thus confirming discriminant validity (Fornell and Larcker, 1981; Table 3). In addition, discriminant validity was also evidenced via satisfactory HTMT correlations as shown in Table 4.

Results

Hypothesis testing

To test the hypotheses, MANCOVA's and regression analyses using the PROCESS Macro extension of SPSS were used. We first assessed the effects of risks on financial performance and mental well-being, moderated by innovativeness, using a MANCOVA. Notably, to aid interpretation, the risk variables and innovativeness were transformed using a median split with scores below the median identified as low and those identified above as high. This was deemed appropriate for this initial phase of the analysis as median splits can aid interpretation for MANCOVA's as suggested by Iacobucci *et al.* (2015).

Furthermore, this research employs the PROCESS MACRO approach to hypotheses relating to moderated mediation, thus aligning with other research on vulnerability in services that consider these tests (Mulcahy *et al.*, 2023; Robertson *et al.*, 2021). This approach was deemed appropriate compared to alternative techniques such as SEM, as Hayes *et al.* (2017) demonstrate that the results from PROCESS and SEM are largely similar. In addition, given that our research features a relatively simple model configuration with observed variables and aims to explore moderation using floodlight and spotlight analyses, the use of PROCESS MACRO is further justified.

Table 2 Items, loading and AVEs

Construct/Item	Loading	AVE	Cronbach's alpha
Financial risk		0.78	0.88
The business I work for will lose income due to COVID-19	0.94		
The business I work for will face financial difficulties due to COVID-19	0.83		
Health risk		0.58	0.73
A colleague will contract COVID-19	0.81		
A colleague will develop serious health complications after contracting COVID-19	0.72		
Innovation		0.72	0.93
Innovation based on research results is readily accepted in the business you work for	0.83		
Management actively seeks innovative ideas	0.86		
Innovation is readily accepted in management	0.87		
Our business encourages and supports innovative activities and new ideas	0.90		
New ideas are quickly accepted in our business	0.79		
Financial vulnerability		0.73	0.91
My businesses cash flow makes it difficult to break-even	0.867		
I am concerned about my business's ability to pay for basic operational expenses	0.91		
I fear that my business would struggle to pay an unexpected expense	0.87		
Thinking about my businesses finances is stressful for me.	0.78		
Mental well-being		0.74	0.85
Little interest in doing things (R)	0.87		
Feeling down or hopeless (R)	0.86		
Firm performance		0.77	0.92
The business has had a strong return on assets	0.84		
The business has had a strong growth in sales	0.84		
The business has had a return on investment	0.88		
The business has had a growth in return on investment	0.92		

Source(s): Authors' own work

Table 3 Construct correlations, means, standard deviations

Construct	M	SD	AVE	1	2	3	4	5	6
1. Health risk	2.65	0.98	0.58	–					
2. Financial risk	3.19	1.30	0.78	0.24**	–				
3. Innovation	3.64	0.86	0.72	−0.016	0.00	–			
4. Financial vulnerability	2.77	1.09	0.73	0.36**	0.57**	−0.03	–		
5. Financial performance	3.11	0.99	0.74	0.00	−0.45**	0.08	−0.37**	–	
6. Mental well-being	3.27	0.85	0.77	−0.25**	−0.17**	0.20	−0.34**	−0.02	–

Note(s): $^{**}p < 0.01$
Source(s): Authors' own work

Table 4 HTMT correlations

Construct	1	2	3	4	5	6
1. Financial risk	–					
2. Health risk	0.244	–				
3. Financial performance	0.365	0.027	–			
4. Financial vulnerability	0.620	0.385	0.401	–		
5. Innovation	0.047	0.051	0.095	0.068	–	
6. Mental well-being	0.265	0.340	0.042	0.382	0.227	–

Source(s): Authors' own work

Health Risk, Financial Performance and Mental Well-being (H1). We conducted a MANCOVA considering the varying level of financial performance and mental well-being by health risk (1 = low, 2 = high). The main effect of health risk was significant ($F = 12.59$, df = 1, $p < 0.001$) with those identifying low risk ($M = 3.44$, SD = 0.81) reporting significantly higher levels of mental health than those who reported high level risk ($M = 3.12$, SD = 0.86). When considering financial performance, participants who identified low health risk ($M = 3.14$, SD = 1.04) reported higher levels than high risk ($M = 3.08$, SD = 0.99) but was non-significant ($F = 2.05$, df = 1, $p = 0.15$). These results suggest that health risk for a service organization is associated primarily with varying levels of mental well-being, specifically low (high) health risk is associated with high (low) mental well-being for service employees.

Financial Risk, Financial Performance and Mental Well-being (H1). We also conducted a MANCOVA considering financial risk, financial performance and mental well-being. The results considering financial performance evidenced a significant main effect ($F = 4.79$, df = 1, $p = 0.02$), with participants identifying lower levels of risk ($M = 3.43$, SD = 0.81) reporting significantly higher levels of financial performance in comparison to participants identifying high financial risk ($M = 2.64$, SD = 1.04). The main effect for mental health was significant ($F = 55.85$, df = 1, $p < 0.001$) with the results showing those identifying low financial risk reporting higher levels of mental health ($M = 3.43$, SD = 0.87) than those reporting higher levels of financial risk ($M = 3.15$, SD = 0.80). Together, these results evidence that not only are low (high) levels of financial risk associated with service employees high (low) financial performance, but this was also associated with their own mental well-being in a similar pattern of results.

Moderated Mediation (H2–H3). Consistent with other cross-sectional survey studies that examine mediation, moderation and vulnerability, we use the PROCESS Macro extension for SPSS (Robertson *et al.*, 2021; Mulcahy *et al.*, 2024). PROCESS is preferred over similar techniques, such as SEM, as it facilitates a more detailed exploration of moderated-mediation, particularly through the use of spotlight analysis for a continuous moderator. Thus, while all methods (including SEM) have strengths and limitations, in this instance, PROCESS was deemed most suitable for the current study and in particular the moderated mediation analysis. To test the mediation and moderation hypotheses, we conducted our analysis using the PROCESS Macro extension of SPSS. PROCESS Hayes extension of SPSS was used using the Model 8 template, a 95% confidence interval and 5,000 bootstraps. For clarity, four iterations of the model were conducted (Model A Health Risk and Financial Performance, Model B Financial Risk and Financial Performance, Model C Health Risk and Mental Health and Model D Financial Risk and Mental Health). The results are summarized in Tables 5 and 6.

The results evidenced for Model A, a significant index of moderated mediation (index = 0.02, SE = 0.01, LCI = 0.00, UCI = 0.05), suggesting that the indirect effect of health risk on financial performance via financial vulnerability significantly varied based upon levels of the moderator, innovativeness. The spotlight analysis demonstrated that participants within the sample, who identified as having high levels of innovativeness within their service organization, had the weakest indirect effect of health risk on financial performance ($B = -0.06$, SE = 0.02, LCI = −0.17, UCI = −0.05) and this increased in strength with moderate levels of innovativeness ($B = -0.08$, SE = 0.02, LCI = −0.13, UCI = −0.04) and low levels of innovativeness ($B = -0.11$, SE = 0.03, LCI = −0.17, UCI = −0.05).

For Model B, the index of moderated mediation was non-significant (index = 0.01, SE = 0.00, LCI = 0.00, UCI = 0.02) indicating that the indirect effect of health risk on financial performance did vary significantly across different levels of innovativeness. However, as evidenced in Table 3, all indirect effects were non-significant and this finding aligns somewhat with the results of the MANCOVA, which also indicated a non-significant main effect.

For Model C, the index of moderated mediation was significant (index = 0.02, SE = 0.01, LCI = 0.00, UCI = 0.05). The spotlight analysis showed that the weakest indirect effect of health risk on mental well-being was evidenced in the high innovativeness group ($B = -0.06$, SE = 0.02, LCI = −0.11,

Table 5 Firm financial performance results

Model a	B	SE	*t*	*p*	Model B	B	SE	*t*	*p*
Health risk→financial vulnerability	0.70	0.14	4.86	0.00	Financial risk→financial vulnerability	0.69	0.09	7.08	0.00
Innovation→financial vulnerability	0.35	0.17	2.05	0.04	Innovation→financial vulnerability	0.32	0.14	2.28	0.02
Health risk × innovation→financial vulnerability	−0.12	0.06	−2.12	0.03	Financial risk × innovation→financial vulnerability	−0.10	0.03	−2.62	0.00
Role within service organization→financial vulnerability	−0.36	0.13	−2.56	0.00	Role within service organization→financial vulnerability	−0.47	0.12	−3.91	0.00
Industry→financial vulnerability	0.02	0.00	2.41	0.01	Industry→financial vulnerability	−0.19	0.04	−4.41	0.00
Organization size→financial vulnerability	−0.28	0.04	−5.93	0.00	Organization size→financial vulnerability	−0.26	0.04	−5.83	0.00
Financial vulnerability R^2	0.23				Financial vulnerability R^2	0.38			
Health risk→financial performance	−0.14	0.12	−1.19	0.23	Financial risk → financial performance	−0.45	0.10	−4.41	0.00
Innovation → financial performance	−0.17	0.13	−1.26	0.20	Innovation → financial performance	−0.41	0.13	−2.94	0.00
Health risk × innovation → financial performance	0.01	0.04	0.37	0.70	Financial risk × innovation → financial performance	0.07	0.03	1.89	0.05
Financial vulnerability → financial performance	−0.22	0.04	−5.26	0.00	Financial vulnerability → financial performance	−0.11	0.05	−2.13	0.03
Role within service organization→financial performance	−0.02	0.03	−0.71	0.47	Role within service organization→financial performance	−0.19	0.12	−1.61	0.10
Industry→financial performance	0.00	0.00	0.05	0.95	Industry→financial performance	−0.00	0.00	−0.39	0.69
Organization size → financial performance	0.01	0.04	0.32	0.74	Organization size→financial performance	0.14	0.04	3.21	0.00
Financial performance R^2	0.19				Financial performance R^2	0.28			
	Index	SE	LCI	UCI		Index	SE	LCI	UCI
Moderated mediation (indirect effects)	0.02	0.01	0.00	0.05	Moderated mediation (indirect effects)	0.01	0.00	0.00	0.02
Low innovation (1.40)	−0.11	0.02	−0.17	−0.05	Low Innovation (1.40)	−0.06	0.03	−0.12	0.00
Moderate innovation (2.20)	−0.08	0.02	−0.13	−0.04	Moderate Innovation (2.20)	−0.05	0.02	−0.10	0.00
High innovation (3.08)	−0.06	0.02	−0.11	−0.02	High Innovation (3.08)	−0.04	0.02	−0.08	0.00

Source(s): Authors' own work

Table 6 Mental well-being results

Model C	B	SE	*t*	*p*	Model D	B	SE	*t*	*p*
Health risk → financial vulnerability	0.70	0.14	4.86	0.00	Financial risk → financial vulnerability	0.69	0.09	7.08	0.00
Innovation → financial vulnerability	0.35	0.17	2.05	0.04	Innovation → financial vulnerability	0.32	0.14	2.28	0.02
Health risk × innovation → financial vulnerability	−0.12	0.06	−2.12	0.03	Financial risk × innovation → financial vulnerability	−0.10	0.03	−2.62	0.00
Role within service organization → financial vulnerability	−0.36	0.13	−2.56	0.00	Role within service organization → financial vulnerability	−0.47	0.12	−3.91	0.00
Industry → financial vulnerability	0.02	0.00	2.41	0.01	Industry → financial vulnerability	0.00	0.00	0.61	0.54
Organization size → financial vulnerability	−0.28	0.04	−5.93	0.00	Organization size → financial vulnerability	−0.26	0.04	−5.83	0.00
Financial vulnerability R^2	0.23				Financial vulnerability R^2	0.38			
Health risk → mental well-being	−0.14	0.12	−1.19	0.23	Financial risk → mental well-being	−0.04	0.09	−0.42	0.67
Innovation → mental well-being	−0.17	0.13	−1.26	0.20	Innovation → mental well-being	−0.18	0.12	−1.44	0.14
Health risk × innovation → mental well-being	0.01	0.04	0.37	0.70	Financial risk × innovation → mental well-being	0.02	0.03	0.58	0.56
Financial vulnerability → mental well-being	−0.22	0.04	−5.26	0.00	Financial vulnerability → mental well-being	−0.24	0.04	−5.18	0.00
Role within service organization → mental well-being	−0.02	0.03	−0.71	0.47	Role within service organization → mental well-being	0.32	0.11	2.93	0.00
Industry → mental well-being	0.00	0.00	0.05	0.95	Industry → mental well-being	−0.00	0.00	−0.46	0.64
Organization size → mental well-being	0.01	0.04	0.32	0.74	Organization size → mental well-being	−0.00	0.00	−0.10	0.91
Mental well-being R^2	0.10				Mental well-being R^2	0.15			
	Index	SE	LCI	UCI		Index	SE	LCI	UCI
Moderated mediation (indirect effects)	0.02	0.01	0.00	0.05	Moderated mediation (indirect effects)	0.02	0.01	0.00	0.05
Low innovation (1.40)	−0.11	0.02	−0.17	−0.05	Low innovation (1.40)	−0.13	0.03	−0.20	−0.08
Moderate innovation (2.20)	−0.08	0.02	−0.13	−0.04	Moderate innovation (2.20)	−0.11	0.02	−0.16	−0.07
High innovation (3.08)	−0.06	0.02	−0.11	−0.02	High innovation (3.08)	−0.09	0.02	−0.13	−0.05

Source(s): Authors' own work

UCI = −0.02) and this increased in strength for the moderate innovativeness (B = −0.08, SE = 0.02, LCI = −0.13, UCI = −0.04) and low innovativeness group (B = −0.11, SE = 0.02, LCI = −0.17, UCI = −0.05).

The results for Model D closely resembled those of Model C with the index of moderated mediation found to be significant (index = −0.03, SE = 0.01, LCI = −0.05, UCI = −0.00). Again, the high innovativeness group was evidenced to have the weakest indirect effect (B = −0.09, SE = 0.02, LCI = −0.13, UCI = −0.05) and this effect increased in strength for moderate and low innovativeness groups as evidenced in Table 6.

Discussion

The findings of this research address three questions. Firstly, regarding the impact of financial and health risks on service organizations' financial and well-being outcomes, this research reveals significant effects, expanding beyond the consumer-centric perspective often seen in previous literature (Mulcahy *et al.*, 2022; Sánchez-Cañizares *et al.*, 2020; Wei *et al.*, 2021) addressing the first research question. Secondly, this research confirms the role of financial vulnerability as a key mediating mechanism between risk, service organizational outcomes and well-being, extending this understanding to actors within service organizations, rather than solely consumers (Hampson *et al.*, 2021), addressing the second research question. Finally, concerning the firm's innovativeness and its contribution to resilience against macro-level events, this research indicates that employees in service organizations with high innovativeness levels exhibit resilience in mitigating adverse effects of financial vulnerability on both financial and well-being outcomes and addresses the third research question. This aligns with prior literature highlighting the importance of innovativeness as a valuable mindset (Augusto and Coelho, 2009; Khalili, 2016). However, this resilience is shown to be contingent on low, rather than high, levels of risk.

Theoretical implications

This research makes several significant theoretical contributions. Firstly, prior literature suggests that service employees can form a part of their identity as a collective with the service organization. This can be understood as the idea that "the service organization is a part of me" or "I am a part of the service organization" (Wheeler *et al.*, 2006; Chung and Byrom, 2021; Hughes and Ahearne, 2010). In addition, vulnerability literature indicates that experiences of vulnerability can transcend the individual to the collective (Johns and Davey, 2019). Based on these foundations, this research proposes that service employees can perceive and experience the risks and vulnerabilities of the service organization, which may subsequently have adverse effects. In doing so, this research advances the service literature and theoretical considerations of vulnerability by providing empirical evidence that individual actors can evaluate and experience vulnerability on behalf of the collective, as evidenced in this research via service employees and their service organizations. This research has therefore begun to address the existing gap in understanding the antecedents and consequences of vulnerability experienced by service employees (Riedel *et al.*, 2023) and expanded on the conceptual framework of Riedel *et al.* (2023) by incorporating a specific measurement of vulnerability, including financial aspects, as well as more nuanced organizational outcomes (such as firm financial performance) and employee-specific outcomes (such as mental well-being). In addition, rather than focusing on job characteristics as antecedents of vulnerability, this research has examined the risks associated with market instability resulting from service mega-disruptions, particularly posing physical and financial risks. Therefore, this research further prompts scholarship to consider and theorize beyond the apparent direct actor experiencing the vulnerability, to those who as a part of a collective (group) may also indirectly experience vulnerability and its effects and collectively adds to the conceptual work of Riedel *et al.* (2023) to consider new antecedents beyond job characteristics of service employee vulnerability, a specific measurement of vulnerability and its outcomes.

Secondly, this research demonstrates the opportunity to integrate deficit and strength-based perspectives on vulnerability within a single study by leveraging theories such as PMT (Rogers, 1975), which has scarcely been used in service studies to date. Through theoretical framing and empirical findings, this research explicates not only the negative perceptions leading to vulnerability experiences, encompassing multiple risk factors but also the assets, such as innovative mindsets, that can mitigate the adverse effects of vulnerability. By applying the theoretical tenets of PMT – specifically, threat appraisal, coping appraisal and response efficacy – this research illustrates how service scholars can more completely capture vulnerability experiences in line with both strength and deficit views. This approach moves beyond previous theories related to vulnerability and stress, such as cognitive appraisal theory and resilience theory. It also addresses the debate surrounding deficit and strength perspectives, which are often viewed as mutually exclusive and counters the notion that certain viewpoints are harmful to the discipline and its stakeholders (Raciti *et al.*, 2022; Fisk *et al.*, 2023). Instead, this research offers preliminary support for Hill's (2024) assertion that the study of these perspectives is "not an either/or proposition". A more holistic understanding can be achieved by considering both viewpoints.

To the best of the authors' knowledge, this research also represents one of the initial attempts to quantitatively demonstrate the antecedents of vulnerability as well as its outcomes, particularly among service employees in the literature. Although previous studies have considered vulnerability or proposed its existence among consumers or service employees (Raciti *et al.*, 2022; Riedel *et al.*, 2022; Riedel *et al.*, 2023), the concrete measurement and modelling of vulnerability and its antecedents and outcomes have been relatively underexplored in the service literature, particularly for actors that are not consumers. Thus, this research stands as one of the pioneering efforts to empirically measure and illustrate the accumulation of vulnerability experiences and its latter effects on collective outcomes such as firm financial performance and individual outcomes (i.e. mental well-being). Moreover, this research demonstrates that experiences of vulnerability, particularly those of a financial nature, can be influenced not only by perceptions of risk within similar domains, such as financial risks, but also by seemingly unrelated risks, such as health. Therefore, this research not only highlights the role of risk as a contributing factor to experiences of vulnerability but also underscores the multifaceted nature of how it can be formulated.

This research further contributes to the service management and services marketing literature by investigating the moderating role of innovativeness on service employees' experiences of risk, financial vulnerability of their service organization, its financial performance and their own individual mental well-being. In doing so, this research confirms the importance of innovation (Theodosiou *et al.*, 2012; Turulja and Bajgoric, 2019) and extends this by theorizing and showing empirical evidence of how it can enhance resilience and response efficacy to mitigate the negative effects of financial vulnerability. The results also show the boundary condition of this benefit of innovation is constrained to situations where individuals experience or evaluate lower levels of risk. In providing these insights, this research is among the first to quantitatively demonstrate how innovativeness, as a mindset within a service organization, can serve as a strength-based assets in situations of vulnerability for service actors such as service employees. Therefore, a key contribution of this finding to the service literature is addressing the need to embrace and explore aspects that can operationalize strength-based approaches to vulnerability (Raciti *et al.*, 2022), exemplified by the benefits of high levels of innovativeness as a mindset, particularly for service employees and how they evaluate their collective self within service organizations.

Managerial implications

The findings of this research have significant managerial implications for service organizations, especially in supporting their employees during service mega-disruptions such as the COVID-19 pandemic and other market upheavals. One key implication is the importance of cultivating an innovative mindset within the organization. This mindset should be focused on addressing and mitigating concerns related to risks and potential financial vulnerabilities. The findings from this research suggest emphasizing creativity and flexibility over a conservative, risk averse approach is important during periods of disruption.

Encouraging a culture where employees are empowered to experiment with new ideas and solutions can help service organizations navigate uncertainties, and the impacts that this has upon their employees, more effectively. The specific tailoring of innovative efforts to the nature of the service mega-disruption or market turbulence being faced is also important. For instance, during the COVID-19 pandemic, service organizations focused on developing digital solutions, enhancing remote service capabilities and improving health and safety protocols, which collectively addressed both financial and health risks. However, unless all aspects of risks are addressed through innovation as demonstrated, significant impacts on both well-being and firm performance are likely to occur. By aligning innovation strategies with the specific challenges at hand (both financial and health, in the case of this research), organizations can address pressing issues more directly and effectively.

Another important finding from this research highlights how service employees may perceive and react to their organization's financial vulnerabilities, especially during challenging times. Service organizations should take these insights into account and implement proactive internal marketing communication strategies to manage and address situations that may lead employees to view the organization as financially unstable. Although transparency about financial challenges is essential, it is equally important to balance this with reassurance. Excessive focus on financial vulnerability can negatively impact employees' mental well-being and their overall perception of firm performance. Therefore, communication should provide clear and factual information, while also emphasizing the organization's strategies for addressing financial issues, including any innovations being considered and developed. This approach ensures that communication is not solely problem-focused but also solution-oriented, aligning with the earlier discussed perspectives on vulnerability that balance deficit and strength approaches.

Limitations and future research directions

Although this research has some notable strengths, such as its multi-study mixed method design, there are some limitations that provide opportunities for future research. Firstly, although this research provides early insights into the importance of innovative mindsets for protecting the mental well-being of service employees within service organizations, future research could take a more nuanced view with regards to firm innovativeness and its moderating role. Moreover, although the consumer literature demonstrates that vulnerability is multi-dimensional, and although this research is among the first to examine financial vulnerability beyond a consumer setting, future research could explore other aspects of vulnerability and how it is experienced by actors within service organizations. For instance, future research could examine whether emotional or psychological vulnerability may also be important explanatory mechanisms when modelling service organizations reactions to situations of uncertainty or where external forces are having a considerable negative impact.

Moreover, although this research emphasizes the role of innovativeness in mitigating the adverse impacts of risk and financial vulnerability on service employees' perceptions of firm financial performance and their personal well-being, this conclusion was limited to participants with lower reported levels of risk. What remains unexplored, and calls for further investigation, is the identification of alternative strengths that could be harnessed when service employees encounter high levels of risk and financial vulnerability within their organization. Future research endeavours could delve into additional cultural factors or mindsets within the service organization that may contribute to resilience, or alternatively, explore individual factors that offer viable solutions. For instance, there may be merit in exploring other resilience-building strategies, such as adaptability, resourcefulness or individual coping mechanisms. In addition, organizational factors such as values, leadership styles and team dynamics could be further examined for their impact on employee well-being and performance in challenging circumstances.

There are also opportunities to further explore the types of service organizations and their employees that may benefit most from an innovative mindset, which extends beyond the scope of this research. Future research could investigate how different types of service organizations – considering factors such as industry, organization size and whether the organization is well-established or a start-up – might benefit from an innovative mindset and its potential to mitigate the impact of financial vulnerability. In addition, a more detailed examination of employees' roles within service organizations could yield valuable findings. Research could explore how different positions – such as frontline staff, managerial roles or support positions – experience and respond to financial vulnerability. Understanding how job responsibilities, decision-making power and proximity to financial issues affect employees' perceptions and coping mechanisms could provide a nuanced perspective on these dynamics.

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