



# Rapid innovation management capability, and crisis-driven business model innovation performance: Roles of strategic-IT-alignment, and operational-IT-effectiveness

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## ABSTRACT

This study proposes and empirically tests a novel construct called rapid innovation management capability (RIMC) to investigate its impact on business model innovation (BMI) performance during crises. Additionally, we explore the mediating role of short-term strategic-IT alignment and the moderating effect of operational-IT-effectiveness in the relationship between RIMC and crisis-driven BMI performance. We gathered primary survey data from 139 firms across various European sectors and employed structural equation modeling to test our hypotheses. This research contributes to the innovation management literature by developing the RIMC construct and demonstrating its significance in driving BMI. Furthermore, it enriches the strategic-IT-alignment literature by showing how firms can leverage RIMC to achieve short-term strategic-IT-alignment, enabling a rapid response during crises, rather than relying on the long-term alignment typically achieved through social and structural integration.

## 1. Introduction

Global crises such as financial downturns, Brexit, terrorism, natural disasters, and pandemics have far-reaching impacts on nearly every industry, affecting businesses of all sizes (Tarba et al., 2019). Most recently, the COVID-19 pandemic has caused widespread economic distress with likely long-term negative effects on the global economy (Kronblad and Pregmark, 2021). In response to such crises, organizations have increasingly turned to business model innovation (BMI), often driven by digital transformation, as a survival strategy (Akpan et al., 2021). Given this context, it is crucial to examine the factors that influence BMI performance during crises. In this study, we focus on the COVID-19 pandemic, a period when BMIs were predominantly digital (Battisti et al., 2022).

BMI involves innovating the mechanisms through which firms create, deliver, and capture value (Bocken & Geradts, 2020), and in

today's digital economy, these innovations are heavily reliant on digital technologies (Del Giudice et al., 2021). During the COVID-19 crisis, firms with high levels of digital literacy were able to transform into more digitalized entities, whereas those with lower digital maturity faced liquidity issues and primarily digitalized their sales functions (Priyono et al., 2020). Although these changes were initially thought to be temporary, the pandemic has fundamentally altered many aspects of business and will likely continue to do so in the coming years and decades (Jabeen et al., 2023). There is a consensus among scholars that these BMIs, driven by the pandemic, are largely enabled by digital technologies (Lee & Trimi, 2021; Li et al., 2022). Consequently, one of the foundational assumptions of this study is that BMIs during the COVID-19 crisis are digitally enabled.

While some organizations had proactively planned for digital transformation, COVID-19 accelerated their transformation efforts, necessitating further business model changes, such as remote work

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enabled by digital technologies (Chadee et al., 2021). However, many organizations were forced to adopt digital technologies simply to survive the pandemic (Papagiannidis et al., 2020). These crisis-driven BMIs proved successful for some organizations, while others remained on the brink of failure (Amankwah-Amoah et al., 2023). Therefore, examining the factors that can ensure successful BMI performance during crises is essential. We argue that, in times of crisis, BMI performance heavily depends on a firm's rapid innovation management capability (RIMC). This argument aligns with the resource-based view (RBV), which posits that value creation through resources such as digital technologies depends on a firm's ability to manage and organize these resources effectively (Barney, 1991). Many examples illustrate how firms responded to the COVID-19 crisis with rapid innovation: for instance, a passenger airline pivoted to cargo-only flights as passenger demand plummeted (Martin, 2020); a hotel chain offered workspaces at day rates to professionals unable to work from their offices (Ismail & Lupini, 2021); a mobile car cleaning and disinfection service expedited its national rollout from two years to two weeks; and a pharmacy chain partnered with a logistics provider to deliver prescription medicine to vulnerable residents of a retirement community by drone (Schatsky, 2020).

However, such rapid BMI depends on relevant innovation management capabilities, specifically RIMC. Drawing on the insights of Johnson and Murray (2021), we define RIMC as the managerial ability to sense urgency, prioritize activities, enhance collaboration, experiment, and intensify efforts in response to abrupt changes in the business environment. Despite its importance, RIMC lacks a formal definition and operationalization in the existing literature. Previous research has highlighted the need for crisis-specific managerial skills (Teece et al., 2016), but the specific construct of RIMC remains underexplored.

Moreover, RIMC is conceptually distinct from rapid innovation capability and other established constructs like "innovation management capability" and "agility." While innovation management capability and organizational agility are well-established constructs (Weber & Tarba, 2014), they do not fully address the unique challenges and requirements of managing rapid innovation in crisis contexts. In fact, we argue that RIMC is an antecedent of organizational agility, enabling rapid innovations in business models. This study thus fills a gap in the literature by providing a clear definition and operational framework for RIMC.

Another key factor in unsuccessful BMI is a lack of strategic-IT-alignment, which is essential when BMI is driven by digital technologies (Sjödin et al., 2020). Alignment enables firms to leverage IT for business performance (Preston & Karahanna, 2009) by ensuring IT strategies support business goals (Kearns & Sabherwal, 2006). Organizations create value from digital technologies when aligned with capabilities, fostering integration and encouraging employees to adopt new strategies (Shamim et al., 2023).

Given that the pandemic is a temporary crisis, strategic-IT-alignment needs to be reconsidered. While scholars advocate for sustained alignment through social and structural integration (Sabherwal et al., 2019), crisis-driven BMI requires rapid innovation and relevant management capabilities such as RIMC (Johnson & Murray, 2021). Despite extensive research on strategic-IT-alignment, its crisis applications remain underexplored. We argue that organizations should focus on short-term alignment to enhance crisis-driven BMI performance. This study examines how short-term strategic-IT-alignment mediates the relationship between RIMC and crisis-driven BMI performance.

Since pandemic-driven BMIs are largely enabled by digital technologies (Lee & Trimi, 2021; Li et al., 2022), understanding the role of operational-IT-effectiveness is essential. The existing literature suggests that resource effectiveness can moderate the relationship between management capabilities and desired outcomes (Saeidi et al., 2019). Organizations need operational effectiveness to fully realize the value of digital technologies (Bradley et al., 2012). The literature shows that strategic-level capabilities alone are insufficient to maximize the

potential of digital technologies; operational effectiveness is also required (Shamim et al., 2021). In this study, we argue that operational-IT-effectiveness is a critical component of a firm's resource effectiveness and can moderate the relationship between RIMC and crisis-driven BMI performance.

There is a scarcity of scholarly debate on the interconnections among RIMC, short-term strategic-IT-alignment during crises, and crisis-driven BMI performance. A critical need exists for novel theorizing on digital innovation management, drawing on the rapidly emerging research on digital technologies. While there is extensive discussion about the need for innovation (Ardito et al., 2025), it is less clear how RIMC influences BMI performance during crises. Furthermore, how operational-IT-effectiveness enhances the performance of crisis-driven business models requires empirical investigation. This study addresses these gaps by developing a novel construct of RIMC and answering the research question of how RIMC influences crisis-driven BMI performance, particularly through the roles of short-term strategic-IT-alignment and operational-IT-effectiveness. We demonstrate how this capability enables organizations to achieve short-term strategic-IT-alignment while managing the disruptions caused by crises. Additionally, we explore the mediating role of short-term strategic-IT-alignment and the moderating role of operational-IT-effectiveness in the relationship between RIMC and crisis-driven BMI performance.

## 2. Rapid innovation management capability and crisis-driven business model innovation performance

Best practices in innovation management refer to the routines that firms use to organize the search, selection, and implementation of the innovation process (Seebode et al., 2012). Innovation management can be defined as the establishment of conditions that foster human creativity, including strategic commitment and contextual management (Igartua et al., 2010). It is a managerial approach that provides an organization with the underlying momentum for innovation, encouraging and facilitating the development of innovative ideas within the company (Wong and Chin, 2007). To remain effective, organizations must continually review these routines, adapting, modifying, and enhancing them in response to changing contexts (Teece et al., 1997). This is particularly crucial during a crisis, such as a pandemic, when a rapid response to new circumstances is necessary, requiring robust innovation management capabilities. Recent literature emphasizes the need for further research on digital innovation management and the importance of swift managerial responses during crises (Johnson & Murray, 2021). Akpan et al. (2021) specifically call for empirical investigations into how digital transformation can support BMI during crises. This study directly addresses these calls by exploring how RIMC, strategic-IT-alignment, and operational-IT-effectiveness interact to influence BMI performance during crises.

While innovation management capability is widely recognized, the specific construct of RIMC during crises remains underexplored. Johnson and Murray (2021) emphasize the need for management capabilities that can prioritize, collaborate, and experiment quickly in response to abrupt changes. This study builds on their insights by defining and operationalizing RIMC, thereby addressing a significant gap in the literature. Several studies in the existing literature report different innovation management practices, however, none of these studies propose the key elements necessary for managing innovation during a crisis. For instance, existing literature considers innovation strategy (Hartmann, 2006); idea management (Oke, 2007); portfolio management; leadership and organizational culture (Wong and Chin, 2007); external relationships; knowledge and technology management (Drejer, 2002; Xu et al., 2007) as key innovation management practices (Igartua et al., 2010; Izadi et al., 2020). Goyal and Pitt (2007) added market orientation, and systems and processes. Patent analytics is also reported as a key innovation management practice (Guderian et al., 2021). Furthermore, networks (Chiaroni et al., 2011); governance (Nagano

et al., 2014); talent management (Panya & Petchsawang, 2025); interaction with early adaptors (Volberda et al., 2013); socio-cognitive sense-making and dynamic organizational design (Nambisan et al., 2017); market intelligence (Hidalgo & Albors, 2008); expert meetings; value and scenario analysis (Alvano & Hidalgo, 2011) are acknowledged as innovation management practices. Rese and Baier (2011) argued that proficiency in predevelopment activities; trust; market potential and synergy are important for managing innovations. However, none of these studies examine innovation management in the context of a crisis where rapid innovations are required.

Rapid BMI during crises depends heavily on relevant innovation management capabilities, particularly RIMC. Innovation management capability is generally defined as a managerial method that provides an organization with the momentum needed for innovation by encouraging and facilitating the development of innovative ideas (Wong and Chin, 2007). However, the specific concept of RIMC, especially in the context of crises and digital technologies, lacks a formal definition and operationalization—an issue this study aims to address.

Digital tools and platforms enable firms to adapt quickly to changing environments, enhance communication and collaboration, and streamline innovation processes. During the COVID-19 crisis, digital transformation became a crucial driver of BMI, allowing firms to respond swiftly and effectively to unprecedented challenges (Lee & Trimi, 2021; Li et al., 2022). Our focus on digital technologies aligns with the dynamic capabilities (DC) view and the RBV, both of which emphasize the importance of leveraging strategic resources for innovation (Burton & Dicking, 2025). The DC view provides the theoretical foundation for understanding RIMC during crises, which involves sensing, seizing, and transforming capabilities in response to environmental opportunities and threats (Teece, 2007). We argue that RIMC is a DC-driven capability because it encompasses sensing the crisis (i.e., recognizing urgency), seizing the opportunity, and transforming the organization's innovation management processes to respond effectively (i.e., through prioritization, enhanced collaboration, experimentation, and intensified efforts). These managerial aspects are critical to the innovation process, as previous research suggests that a firm's success is closely tied to how well it manages innovation (Adams et al., 2006). Thus, RIMC is conceptually distinct from rapid innovation capability, as it focuses specifically on the managerial aspects that support rapid innovation in crisis contexts.

The DC view is an extension of the RBV (Zeng and Glaister, 2018), which suggests that organizations require relevant managerial capabilities to create value from strategic resources. In this case, digital technologies enable new business models. Accordingly, this study examines the linkages between RIMC and BMI through the lenses of DCs and RBV. It is important to note that RIMC is different from strategic agility; rather, strategic agility is an outcome of RIMC. This distinction is consistent with the existing literature, which suggests that strategic agility relies on DC-driven capabilities like RIMC (Teece et al., 2016).

RIMC comprises several key elements. First, the ability to sense urgency involves acting swiftly to address crises and overcoming normalcy bias—the tendency to assume that future events will resemble past events (Johnson & Murray, 2021; Omer & Alon, 1994). Second, urgency must be paired with prioritization, which focuses on addressing the most critical challenge and reallocating resources accordingly (Johnson & Murray, 2021). In a crisis, managers must concentrate on the most pressing priorities, as the usual opportunity cost analyses lose relevance (Johnson & Murray, 2021). Third, managers need to bring together organizational members to solve the most urgent problem, leveraging a diversity of ideas and perspectives (Deverell et al., 2019; Johnson & Murray, 2021). This collaborative approach enhances creativity, as employees unite to address a shared challenge (Von Krogh et al., 2020). Fourth, experimentation allows organizations to develop new internal capabilities for innovation (Björklund et al., 2020). In a crisis, the risk of not finding a solution outweighs the risk of failed experiments, fostering a tolerance for risk and redefining what might otherwise be seen as waste or failure (Johnson & Murray, 2021). Finally, generating high

levels of intensity is crucial, as crises are typically temporary and demand concentrated efforts over a short period (Clauss et al., 2022; Johnson & Murray, 2021).

RIMC aligns with the DC perspective which refers to the firm's ability to sense urgency, corresponds to the DC of sensing opportunities and threats in the environment (Shamim et al., 2019; Teece, 2018), while prioritizing activities, enhancing collaboration, experimenting, and intensifying efforts enable the swift seizing of opportunities and transformation of the organization. In the following section, we elaborate on the link between RIMC and crisis-driven business model performance.

BMI involves the search for new ways to create, capture, and deliver value (Casadesus-Masanell & Zhu, 2013). The literature frequently emphasizes exogenous shocks or severe crises as drivers of BMI, as firms respond to disruptions by innovating their business models (Spieth & Schneider, 2016). However, BMI is challenging, and not all businesses perform better after adopting new business models (Kim & Min, 2015). This raises important questions about the capabilities and conditions necessary for successful BMI performance.

Crisis like COVID-19 can severely impact businesses, but they are usually temporary, prompting firms to implement crisis-driven BMIs as a temporary response (Clauss et al., 2022). The success of these BMIs depends on a firm's ability to integrate the new business model, which stems from RIMC. The RBV also suggests that both tangible and intangible resources lead to successful innovative outcomes if the organization has the capability to manage those resources effectively (Barney, 1991), a capability we attribute to RIMC. Additionally, existing literature supports the notion that BMI performance relies on a firm's ability to quickly adjust to new business situations, particularly in response to crises (Teece, 2018), which we argue is facilitated by RIMC. The DC view also suggests that managerial competencies in devising and refining business models are essential for seizing new opportunities and improving performance (Teece, 2007), such competencies are central to RIMC.

Accordingly, we propose that RIMC which refers to the abilities to sense urgency, prioritize, collaborate, experiment, and intensify efforts—can significantly influence crisis-driven BMI performance. A sudden crisis leaves little time for businesses to respond, necessitating rapid modifications to business models (Von Krogh et al., 2020). Furthermore, contemporary BMIs, as seen during the COVID-19 crisis, are primarily digital and rely on a firm's capabilities for digital transformation (Warner & Wäger, 2019). Therefore, it is crucial for businesses in such situations to possess RIMC to respond quickly and effectively to BMI needs.

Existing literature establishes that BMI performance relies on innovation management capabilities (Pang et al., 2019). We argue that the performance of crisis-driven BMI is particularly dependent on a firm's RIMC. This is consistent with the RBV, where value creation through strategic resources (such as digital technologies enabling BMI) relies on a firm's capability to manage those resources. This study suggests that a firm's ability to manage digital innovation processes during a crisis significantly affects its innovation performance. The literature also indicates that DC-driven management capabilities influence BMI performance (Bocken & Geradts, 2020; Teece, 2018). We posit that RIMC is a DC-driven capability, as it involves sensing the crisis, followed by seizing and transforming through prioritization, experimentation, collaboration, and intensification.

Based on these arguments and the understanding that a crisis demands rapid and innovative responses in terms of business model adaptation, we suggest that RIMC can predict crisis-driven BMI performance. Consequently, we propose the following hypotheses:

*H1: RIMC is positively related to crisis-driven BMI performance.*

### 3. The mediating role of short-term strategic-IT-alignment

Strategic-IT-alignment refers to the congruence between IT and business functions in support of overall business objectives (Sabherwal

et al., 2019). It involves the ability of IT and business leaders to work in a unified strategic direction (Sabherwal & Chan, 2001). From a capability-based perspective, strategic-IT-alignment is seen as the utilization of IT to enhance performance through social and structural integration (Preston & Karahanna, 2009).

In times of crisis, short-term strategic-IT-alignment becomes crucial, enabling organizations to quickly synchronize IT and business strategies to meet temporary needs (Sabherwal et al., 2019). This rapid alignment, often facilitated by digital technologies, is essential for implementing temporary, crisis-driven business models. According to the RBV, capabilities are key to leveraging resources for improved performance (Eisenhardt & Martin, 2000). Strategic-IT-alignment, as a DC, can influence both RIMC and the innovation performance of crisis-driven business models (Clauss et al., 2022; Shamim et al., 2019).

Sabherwal et al. (2019) suggest that in rare situations, such as crises, firms require short-term strategic-IT-alignment. In such scenarios, organizations lack the time necessary for social and structural integration required for long-term alignment and must instead focus on short-term alignment due to the urgency and temporary nature of the crisis. In this study, we define short-term strategic-IT-alignment as a firm's capability to align IT and business strategies rapidly to respond to a temporary crisis with a crisis-driven business model.

Organizations with strong innovation management capabilities are better positioned to innovate their business models, leading to improved performance (Jin et al., 2022; Pang et al., 2019). Strategic alignment facilitates the integration of innovative changes within the organizational context, thereby enhancing BMI performance (Yoshikuni, 2020; Ryu et al., 2014). It also reduces resistance to change and improves adaptability (Liang et al., 2017). Based on these insights, we propose the following hypothesis:

*H2: Short-term strategic-IT-alignment mediates the relationship between RIMC and crisis-driven BMI performance.*

#### 4. The moderating role of operational-IT-effectiveness

Operational-IT-effectiveness refers to the enhancement of business operations through IT-enabled performance improvements (Bradley et al., 2012). Unlike IT alignment, which focuses on the alignment of business and IT strategies, operational-IT-effectiveness emphasizes the effective use of IT resources to optimize operations (Tallon et al., 2019). Bradley et al. (2012) suggest that operational-IT-effectiveness plays a significant role in fostering organizational agility, which is crucial for BMI, particularly in times of crisis. Viewing operational-IT-effectiveness as an intermediate factor offers deeper insights into IT-enabled performance (Barua et al., 1995).

Responding swiftly to a crisis requires agility that leverages both operational and strategic elements (Bradley et al., 2012). Operational factors are essential in driving IT-enabled innovation (Shamim et al., 2021). During crises, operational errors can impede BMI, but effective IT systems can mitigate these errors (Bradley et al., 2012).

In this study, we assert that firms need RIMCs to address crisis-related challenges using digital technologies (Clauss et al., 2022; Johnson & Murray, 2021). Effective IT resources enhance the innovation performance of business models (Bocken & Geradts, 2020) and can moderate the relationship between management capabilities and outcomes (Saeidi et al., 2019). Recent literature also suggests that operational-IT-effectiveness significantly influences business model performance (Safitri et al., 2023). Efficient IT systems and streamlined processes facilitate the integration of new business models and reduce implementation barriers (Rajagopal & Mahajan, 2023).

We argue that operational-IT-effectiveness is a crucial factor in the relationship between RIMCs and crisis-driven BMI performance. Firms with high operational-IT-effectiveness are better positioned to leverage their RIMCs to enhance performance. Based on these arguments, we propose the following hypothesis:

*H3: Operational-IT-effectiveness positively moderates the relationship*

*between RIMC and crisis-driven BMI performance (Fig. 1).*

## 5. Methods

### 5.1. Sample and data collection

This study employed a quantitative research design. Primary survey data were collected from firms across various sectors, including raw material suppliers, manufacturing firms, distribution companies, and service providers. To enhance the generalizability of our findings, we included firms occupying different positions within the value chain, such as suppliers, lead firms, distributors, and support providers. Data collection occurred across Europe in two rounds using two distinct questionnaires. In the first round, respondents provided information related to independent, mediating, and moderating variables (i.e., RIMC, short-term strategic-IT-alignment, and operational-IT-effectiveness). Additionally, firm characteristics were gathered during this phase. Two months later, the same respondents received a second questionnaire, which focused on the dependent variable, crisis-driven BMI performance.

In the first round, we received responses from 177 companies; however, only 146 companies participated in the second round. Consequently, 146 companies completed both surveys. After combining the questionnaires, 139 responses were deemed usable for subsequent data analysis (see Table 1 for sample details). A response rate of 78.53 % (139/177) in the second round was considered appropriate for several reasons. First, the study targeted a broad spectrum of industrial firms across Europe, including distribution, manufacturing, suppliers, and service providers at different stages of the value chain. The fact that 177 firms responded, given the complexity and diversity of the target population, indicates a significant and representative sample (Tortora et al., 2021; Wielgos et al., 2021).

The comprehensive approach to data collection included a variety of methods, such as online databases, collaboration with chambers of commerce, personal and professional networks, and snowball sampling, demonstrating the study's commitment to reaching a diverse set of respondents. The study's persistence and adaptability, particularly through its engagement with chambers of commerce and strategic use of snowball sampling, helped achieve a satisfactory response rate despite initial challenges. This response rate is consistent with previous research in the areas of digitalization and IT effectiveness (Panagiotopoulos et al., 2023).

Initially, we contacted companies by gathering contact details from several online databases, such as <https://www.exportuk.co.uk/search/results.php> in the UK and the London Stock Exchange's list of inspiring European companies. Additionally, we utilized the Bisnode Alberta database, which provides data on companies in the Czech Republic and Slovakia. Using the licensed online version of Alberta CZ Gold Edition (<https://www.bisnode.cz/produkty/albertina>), we prepared a list of companies along with contact details, particularly the email addresses of key individuals. When the initial response rate was low, we reached out to chambers of commerce in major European cities and the UK, explaining the study's purpose and requesting their support in acquiring data from the companies registered with them. We also leveraged personal and professional networks to gather data from relevant companies. A platform firm in the Czech Republic provided connections to many European firms working with them. Furthermore, after obtaining a few initial responses, we employed snowball sampling—a non-probability sampling technique that begins with a small population of known individuals and expands as initial participants identify others who should participate in the study.

To mitigate the effects of common method bias (CMB), we implemented several measures. For instance, data were collected in two waves, and respondent anonymity was assured. Additionally, we randomized the questionnaire items to make it difficult for respondents to relate the items to one another or link them to specific variables. This

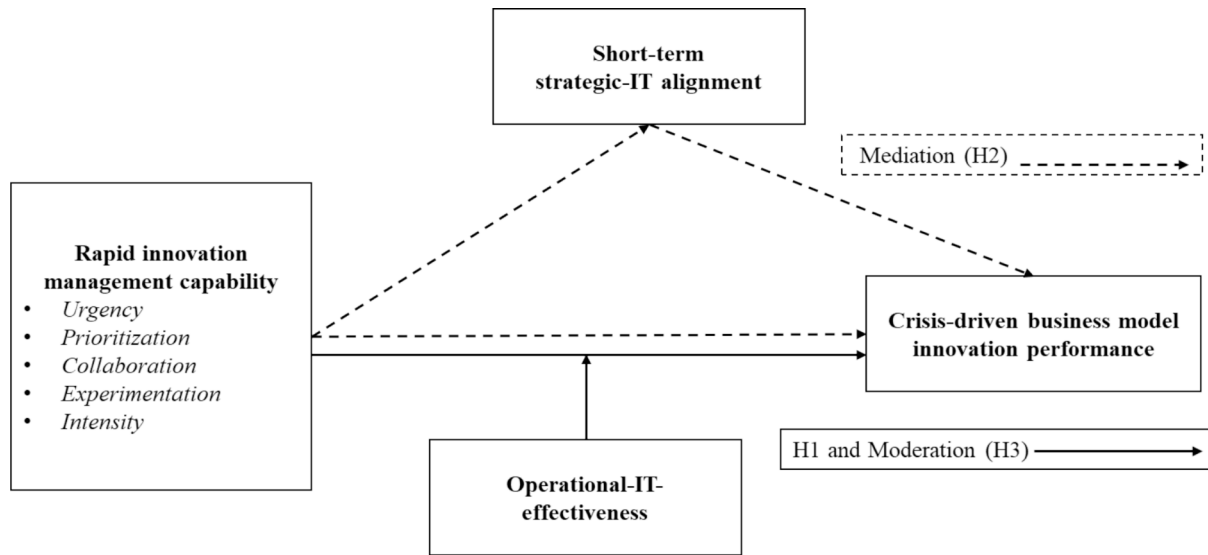


Fig. 1. Conceptual framework.

Table 1  
Sample Information (N = 139).

Sample Profile	Frequency	Percent
Age of the firms		
1 to 10 years	11	7.9 %
11 to 20 years	36	25.9
21 to 30 years	57	41.0 %
31 to 40 years	10	7.2 %
More than 40 years	25	18 %
Number of Employees		
1 to 10	9	6.5 %
11 to 50	93	66.9 %
51 to 100	34	24.5 %
101 to 200	3	2.2 %
Status		
Private limited company	36	25.9 %
Family Business	33	23.7 %
Sole proprietor	64	46.0 %
Partnership	9	4.3 %
Scope		
International	46	33.1 %
Domestic	93	66.9 %
Country/Region		
Mainland Europe	78	56.1 %
United Kingdom	46	33.1 %
Scandinavia	15	10.8 %
Industry		
Manufacturing	28	20.1 %
IT services, and software	24	17.3 %
Consumer goods (including food)	14	10.1 %
Distribution firms	12	8.7 %
Professional services	33	23.7 %
Fashion and Textiles	19	13.7 %
Financial services and accountancy	9	6.4 %

randomization ensured that no fixed pattern or structure was imposed on the participants, thereby reducing the likelihood of common method bias. To address concerns regarding CMB, we followed the approach recommended by Kock (2015) and conducted a full collinearity variance inflation factor (VIF) test. This method assesses both multicollinearity and the potential for CMB by calculating VIF values for all latent variables in the model. As per Kock’s guidelines, VIF values below (ranging from 1.625 to 2.828 for the inner model, ranging from 1.452 to 3.098 for the outer model) the threshold of 3.3 indicate that the model is unlikely to be affected by the CMB.

5.2. Measures

Structured questionnaires were used to measure the variables in this study, comprising a combination of adopted, adapted, and self-developed items. The specific questions are included in Appendix A.

Following the procedure established by Moore and Benbasat (1991), RIMC was formulated as a reflective construct to maintain consistency with other reflective constructs in the model. The process began with item creation, which involved a comprehensive review of existing literature to identify any relevant scale items or information pertinent to the construct’s development (e.g., Johnson & Murray, 2021; Shamim et al., 2019). This review resulted in the development of five higher-order constructs.

Next, the scale development phase involved examining these items for similarities, differences, and any ambiguous or confusing language, which led to minor revisions for clarity. The construct was then subjected to instrument testing, involving a sample of two academic experts and industry professionals. A scale reliability analysis was conducted, which led to the removal of two items, thereby improving the overall reliability and robustness of the construct. This approach is consistent with the methodology used by Lambert and Newman (2023). We first conceptualized and defined the construct based on relevant literature, then operationalized it by generating items. Finally, we confirmed the construct’s reliability and validity through factor analysis, testing for both convergent and discriminant validity. After these tests, the items were consolidated into a single factor for use in constructing RIMC, following the transformation method consistent with Dehghani et al. (2022).

Strategic-IT-alignment and operational-IT-effectiveness were measured by adapting four items each from Bradley et al. (2012). However, these items were further adapted to specifically contextualize strategic-IT-alignment for short-term scenarios. Eight items were adapted from Spieth et al. (2016) to measure BMI performance, with modifications to capture crisis-related situations. All items were measured using a seven-point Likert scale, ranging from strongly disagree to strongly agree. The psychometric properties of the constructs are detailed in Appendix B.

5.3. Data analysis

Data were analyzed using the partial least squares (PLS) method, applying structural equation modeling (SEM). Given that this study examines the self-developed construct of RIMC, a variance-based

approach using SmartPLS 4 was deemed appropriate (Shamim et al., 2019). PLS is a variance-based approach that imposes fewer restrictions on distribution and sample size and is an SEM technique that analyzes both the theoretical and measurement models simultaneously. Additionally, PLS is effective in resolving multicollinearity issues (Chin et al., 2003).

## 6. Results

### 6.1. Measurement model testing

We evaluated the measurement model, which included both reflective and composite constructs. Initially, we verified the reliability and validity of the reflective constructs, which encompassed short-term strategic-IT-alignment, BMI performance, and operational-IT-effectiveness. This evaluation was further extended to assess the five reflective dimensions of RIMC including urgency, prioritization, collaboration, experimentation, and intensity. Subsequently, these RIMC dimensions were organized into a higher-order composite construct based on their interrelated characteristics.

Table 2 presents the factor loadings, reliability, and convergent validity of the reflective constructs in the model. The composite reliability (CR) of each construct exceeded 0.8, surpassing the minimum threshold of 0.70 recommended by Nunnally (1967). The Average Variance Extracted (AVE) values for all constructs were above the recommended minimum of 0.50, indicating that the items met the standards for convergent validity (Bagozzi & Yi, 1991). Additionally, Cronbach's alpha and rho\_A values were both above 0.70, as required.

Although some factor loadings are below 0.70, Hair et al. (2010) suggest that such loadings are still acceptable if the CR and average variance extracted AVE values meet the required thresholds, particularly if they fall within the range of 0.60 to 0.70. Since certain items (e.g., BMIP2, E1, and SITA4) did not meet the required threshold, we decided to eliminate them. Apart from these items, all reflective constructs in this study have satisfactorily met the validity and loading criteria.

Before evaluating the structural model, we assessed RIMC as a higher-order construct within the measurement model using a two-stage approach (Ringle et al., 2012). This method involves evaluating the latent formative construct. In the first stage, latent variable scores for the sub-constructs were obtained, following the procedure outlined in Ogbeibu et al.'s (2018) study. In the subsequent stage, each sub-construct was represented by its respective latent variable scores (Ogbeibu et al., 2018). These latent variable scores were then used as indicators in the measurement model for the higher-order construct (RIMC) (AlNuaimi et al., 2021). The scores of the sub-constructs i.e. urgency, experimentation, prioritization, collaboration, and intensity were integrated into the structural model as variables of the latent construct (RIMC). Additionally, we provided Cronbach's alpha, CR, AVE, and rho\_A values, all of which met the required thresholds, as shown in Table 2, except for the experimentation construct, which was excluded due to low factor loadings.

The variables encompassing both higher-order and lower-order constructs were analyzed to evaluate discriminant validity. Two criteria were employed for this evaluation: the heterotrait-monotrait (HTMT) ratio and Fornell and Larcker's (1981) criterion. We have also provided the cross-loading values in Appendix C. According to HTMT,

**Table 2**  
Reliability and validity of measurement model for lower-order constructs.

Variable	Items	Factor loadings	AVE	CR	Cronbach's alpha	Rho_A
Urgency	U1	0.851	0.632	0.837	0.706	
	U2	0.730				
	U3	0.799				
Prioritization	P1	0.752	0.587	0.894	0.856	0.880
	P2	0.798				
	P3	0.722				
	P4	0.719				
	P5	0.646				
	P6	0.931				
Collaboration	C1	0.653	0.567	0.838	0.740	0.733
	C2	0.850				
	C3	0.813				
	C4	0.678				
Experimentation	E2	0.805	0.640	0.876	0.814	0.836
	E3	0.706				
	E4	0.865				
	E5	0.817				
	I1	0.912				
Intensity	I2	0.877	0.767	0.929	0.899	0.908
	I3	0.821				
	I4	0.891				
	I4	0.891				
Short-term strategic-IT-alignment	SITA1	0.899	0.715	0.909	0.866	0.855
	SITA2	0.926				
	SITA3	0.863				
Operational-IT-effectiveness	OE1	0.848	0.755	0.932	0.903	0.908
	OE2	0.889				
	OE3	0.896				
	OE4	0.886				
Crisis-driven BMI performance	BMIP1	0.809	0.707	0.944	0.929	0.934
	BMIP3	0.867				
	BMIP4	0.858				
	BMIP5	0.860				
	BMIP6	0.742				
	BMIP7	0.977				
	BMIP8	0.750				
	BMIP8	0.750				
For higher-order constructs RIMC	Collaboration	0.720	0.610	0.862	0.787	0.809
	Intensity	0.834				
	Prioritization	0.829				
	Urgency	0.734				

the values should fall below specific thresholds (e.g., 0.85 or 0.9) to confirm the establishment of discriminant validity for the constructs (Henseler et al., 2015). Additionally, Fornell and Larcker’s criterion was satisfied, meaning that the square root of the AVE for each latent variable was greater than the correlation values between the latent variables. This ensures robust discriminant validity (see Tables 3–6).

Additionally, the weights of the latent constructs were found to be significant based on the confidence interval approach. To evaluate the fitness of the measurement model, we adhered to the guidelines of Henseler et al. (2016), which emphasize that the standardized root mean square residual (SRMR) is the only acceptable model fit criterion for PLS path modeling. In this study, the SRMR value was 0.071, which is below the recommended threshold, making it acceptable. These results demonstrate a valid model fit and establish nomological validity for the RIMC factors as a higher-order construct.

### 6.2. Structural model testing

We evaluated the variance explained (R2) as a measure of the model’s explanatory power. According to Sarstedt et al. (2014), R2 values of 0.25, 0.50, and 0.75 represent weak, moderate, and strong explanatory power, respectively. In our model, the R2 values were 0.668 for BMI performance and 0.544 for short-term strategic-IT-alignment, indicating strong and moderate explanatory power for the respective endogenous variables. Furthermore, we conducted hypothesis testing using the estimations provided by PLS-SEM. We employed a bootstrapping test with 10,000 subsamples and conducted a one-tailed test. The results of the hypothesis tests are presented in Table 7.

To test the hypotheses, we first examined the direct relationship between RIMC and crisis-driven BMI performance. The results revealed that RIMC is positively and significantly associated with crisis-driven BMI performance ( $\beta = 0.307, p < 0.001$ ), supporting H1. We then introduced short-term strategic-IT-alignment as a mediator in the relationship between RIMC and crisis-driven BMI performance. Adding short-term strategic-IT-alignment as a mediator reduced the direct effect of RIMC on crisis-driven BMI performance, but the relationship remained significant ( $\beta = 0.245, p < 0.001$ ). Additionally, the indirect relationship between RIMC and crisis-driven BMI performance was positive and significant ( $\beta = 0.245, p < 0.001$ ), indicating partial mediation and supporting H2.

For the mediation analysis, we followed the bootstrapping method, which uses a resampling procedure to calculate confidence intervals for the estimates of the indirect effects. According to Hayes (2017), this method is more appropriate and powerful than traditional causal steps and product-of-coefficients approaches (such as the Sobel test) for testing the significance of indirect effects (Hayes & Preacher, 2014).

Finally, we tested the moderation of operational-IT-effectiveness in the relationship between RIMC and crisis-driven BMI performance. The results did not support the assumption that operational-IT-effectiveness moderates this relationship ( $\beta = 0.012, p > 0.05$ ). Therefore, H3 was rejected. We included the model firm age ( $p = 0.221$ ) and size ( $p =$

0.362) as control variables in the analysis but found no significant effect on the dependent variable.

## 7. Discussion

The results highlight the crucial role of RIMCs in driving BMI performance during crises. Firms with strong RIMCs adapt their business models more swiftly, reinforcing prior research on innovation management, which links innovation performance to effective resource allocation (Alborg et al., 2018). Our study extends this by examining RIMCs in crisis contexts, where rapid adaptation is essential.

We also find that short-term strategic-IT-alignment mediates the relationship between RIMCs and crisis-driven BMI performance. While RIMCs directly enhance innovation, aligning IT resources with emergent strategic goals amplifies this effect. Strategic-IT-alignment integrates crisis-driven innovations into operations, fostering agility in decision-making and resource allocation. This supports Wijnhoven et al. (2006), who noted that strategic alignment facilitates innovation by ensuring coherence with organizational structures. However, unlike prior studies, we focus on short-term alignment in crises, emphasizing the urgency of IT adjustments. Firms can leverage RIMCs to create agile IT strategies, dynamically aligning technology with evolving objectives. This aligns with recent literature on BMI (Clauss et al., 2022), DCs (Bocken & Geradts, 2020), and strategic-IT-alignment (Venkatraman et al., 1993), which emphasize rapid resource realignment during disruptions.

Our findings do not support the hypothesis that operational-IT-effectiveness moderates the RIMC–crisis-driven BMI performance relationship. One possible reason is that in crises, firms prioritize adaptive capabilities over operational efficiencies. This challenges traditional views of IT’s role in innovation, suggesting that flexibility and rapid reconfiguration outweigh pre-existing efficiencies when responding to unexpected disruptions (Johnson & Murray, 2021).

### 7.1. Theoretical contribution

This study extends the existing body of knowledge on innovation management capabilities in several ways. First, building on and further developing the insights of Johnson and Murray (2021), we combined urgency, prioritization, collaboration, intensity, and experimentation into a unified construct of RIMC. Second, we demonstrated that it could enhance the performance of crisis-driven BMI. The current literature on BMI does not provide specific guidance on improving BMI during crises through innovation management practices. Therefore, this study offers novel insights by detailing how to effectively manage rapid innovation to ensure business model success. Third, we examined short-term strategic-IT-alignment as a mediator in the relationship between RIMC and crisis-driven BMI performance. This is a novel contribution because existing literature primarily focuses on long-term strategic-IT-alignment achieved through social and structural integration. However, this study suggests that in a crisis requiring a rapid response, firms should leverage

**Table 3**  
Discriminant validity of constructs with lower-order constructs (Heterotrait-Monotrait [HTMT]).

	BMI performance	Collaboration	Experimentation	Intensity	Operational-IT-effectiveness	Prioritization	Short-term strategic-IT-alignment	Urgency
BMI performance								
Collaboration	0.512							
Experimentation	0.368	0.417						
Intensity	0.646	0.582	0.681					
Operational-IT-effectiveness	0.699	0.270	0.250	0.439				
Prioritization	0.740	0.622	0.588	0.669	0.519			
Short-term strategic-IT-alignment	0.823	0.548	0.543	0.767	0.678	0.730		
Urgency	0.521	0.502	0.605	0.623	0.334	0.732	0.642	

**Table 4**  
Discriminant validity of constructs with lower-order constructs (Fornell-Larcker).

	BMI performance	Collaboration	Experimentation	Intensity	Operational-IT-effectiveness	Prioritization	Short-term strategic-IT-alignment	Urgency
BMI performance	<b>0.836</b>							
Collaboration	0.431	<b>0.754</b>						
Experimentation	0.331	0.329	<b>0.750</b>					
Intensity	0.584	0.483	0.634	<b>0.876</b>				
Operational-IT-effectiveness	0.645	0.206	0.167	0.392	<b>0.866</b>			
Prioritization	0.663	0.518	0.503	0.594	0.447	<b>0.766</b>		
Short-term strategic-IT-alignment	0.745	0.455	0.480	0.689	0.602	0.638	<b>0.896</b>	
Urgency	0.421	0.379	0.452	0.502	0.265	0.594	0.509	<b>0.795</b>

Note. Values in bold at the diagonal are the square root of the AVEs.

**Table 5**  
Discriminant validity of constructs with the higher-order construct (Heterotrait-Monotrait [HTMT]).

	BMI performance	Operational-IT-effectiveness	RIMC	Short-term strategic-IT-alignment
BMI performance				
Operational-IT-effectiveness	0.714			
RIMC	0.802	0.483		
Short-term strategic-IT-alignment	0.842	0.678	0.867	

**Table 6**  
Discriminant validity of constructs with higher-order constructs (Fornell-Larcker).

	BMI performance	Operational-IT-effectiveness	RIMC	Short-term strategic-IT-alignment
BMI performance	<b>0.817</b>			
Operational-IT-effectiveness	0.649	<b>0.880</b>		
RIMC	0.688	0.424	<b>0.781</b>	
Short-term strategic-IT-alignment	0.751	0.689	0.738	<b>0.896</b>

Note. Values in bold at the diagonal are the square root of the AVEs.

**Table 7**  
Hypotheses testing.

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ( O/STDEV )	Confidence Interval (5.0 %-95.0 %)	P values
H1: RIMC-> BMI performance	0.307	0.312	0.082	3.732	0.173-0.445	0.000***
Specific Indirect Relationship: H2: RIMC- -> Short-term strategic-IT-alignment-> BMI performance	0.245	0.247	0.076	3.225	0.122-0.371	0.000***
H3: Operational-IT-effectiveness x RIMC -> BMI performance	0.0012	0.014	0.054	0.216	-0.071-0.106	0.415
Other Direct Relationships: Operational- IT-effectiveness -> BMI performance	0.322	0.323	0.072	4.452	0.208-0.444	0.000***
RIMC- -> Short-term strategic-IT-alignment	0.738	0.742	0.036	20.329	-0.511	0.000***
Short-term strategic-IT-alignment -> BMI performance	0.332	0.332	0.098	3.385	-0.488	0.000***
Total Indirect Relationship: RIMC-> BMI performance	0.245	0.247	0.076	3.225	0.122-0.371	0.000***

Note: PLS results of the research model (\*\*\*p < 0.001, one-tailed).

RIMC to create short-term strategic-IT-alignment to ensure BMI performance. By testing short-term alignment as a mediator, this study also contributes to the understanding of capability development from a short-term perspective, highlighting how firms can develop and reconfigure their capabilities quickly in response to crises. Discussing strategic alignment in the context of a crisis is an important addition to the literature on strategic alignment. Furthermore, linking BMI performance to strategic-IT-alignment is another novel contribution of this study. By exploring these interconnections, this study provides valuable insights into how firms can better prepare for crises and manage the process of crisis-driven BM.

7.2. Managerial implications

This study has important managerial implications for managing BMIs, particularly in crises such as pandemics, where businesses primarily respond through digitally enabled BMIs. Our findings are generalizable in the context of addressing crisis-driven challenges through these types of innovations. We suggest that firms develop RIMCs to enhance their chances of surviving a crisis. Companies must be able to sense urgency and take swift, appropriate actions to ensure BMI performance during such times. To manage rapid innovation effectively in response to a crisis, firms should prioritize crisis-driven challenges, reallocating resources and suspending less critical activities.

Developing these capabilities requires firms to experiment with new technologies and foster a culture that tolerates mistakes. Additionally, firms should work intensively over short periods, setting deadlines for tasks, establishing a series of short-term milestones, and deploying their best resources to intensify efforts for rapid innovation in response to the crisis. By doing so, firms can cultivate RIMCs, which are crucial for

addressing crisis-driven challenges, such as those presented by the COVID-19 pandemic (Johnson & Murray, 2021).

Furthermore, strategic-IT-alignment is important, but in crises that demand rapid responses, firms should focus on short-term strategic-IT-alignment by addressing immediate crisis-driven challenges. This finding suggests that when a quick response is necessary, firms can leverage RIMCs to create short-term strategic-IT-alignment, as long-term alignment through social and structural integration requires more time.

While the results do not support the moderation of operational-IT-effectiveness in the relationship between RIMC and BMI performance, the positive, though not significant, effect indicates that operational-IT-effectiveness still plays a role. This finding suggests that further theorizing is needed to understand its role better. Rather than acting as a moderator, the results suggest a direct positive relationship between operational-IT-effectiveness and crisis-driven BMI performance. This implies that firms should focus on improving operational-IT-effectiveness to ensure BMI performance during a crisis. Ensuring that IT infrastructure is robust enough to detect and reduce operational errors and improve overall business performance is crucial (Bradley et al., 2012).

### 7.3. Limitations and future research areas

This study has some limitations and offers suggestions for future research. The focus on RIMC during a crisis limits the generalizability of the findings to typical business environments. Therefore, future research should explore the role and impact of RIMC in more stable, non-crisis contexts. Additionally, the findings are based on a relatively small sample size and are geographically limited to firms in Europe, which may affect the broader applicability of the results. To enhance the robustness and generalizability of the findings, future studies should include larger and more diverse samples from different regions.

The cross-sectional design of the survey also limits the ability to draw definitive causal conclusions. Longitudinal studies are recommended to better understand the causal relationships between RIMC, strategic-IT-alignment, operational-IT-effectiveness, and BMI performance. Despite

## Appendix A: Questionnaire items

### Rapid innovation management capability.

*Urgency (Adapted from Salam et al. 2021).*

1. For our organization, pandemic-driven business challenges were given urgent attention.
2. We took some urgent actions to prevent business loss amid the pandemic
3. We believe that we are running out of time to respond to pandemic-driven business challenges.
4. We created a sense of urgency in our organization to align employees' efforts. (excluded due to low factor loading)

*Prioritization (developed based on conceptual insights from Johnson and Murray, 2021).*

1. Responding to pandemic-driven challenges was our priority.
2. We had a multitude of competing priorities.\*
3. We had a list of high-priority goals amid the pandemic.
4. We had a very narrow focus on the pandemic-driven challenges.
5. We dropped all other priorities and focused on the pandemic-driven challenges.
6. We reallocated resources to respond to the pandemic-driven challenges.

*Collaboration (developed based on conceptual insights from Johnson and Murray, 2021).*

1. During the pandemic, cross-functional teams came together to solve pandemic-driven problems.
2. Cross-functional teams have brought diverse perspectives to solving pandemic-driven problems.
3. We deployed the collective creativity of people to solve pandemic-driven problems.
4. Members of cross-functional teams have believed that their role is important in solving pandemic-driven problems.

*Experimentation (Adapted from Shamim et al. 2019).*

the measures taken to minimize CMB, such as two-wave data collection, randomization of questionnaire items, and ensuring respondent anonymity, there remains a potential risk of bias. Future research could employ more sophisticated techniques, such as marker variables or multi-source data, to further reduce this risk.

Furthermore, the study found that the moderating effect of operational-IT-effectiveness on the relationship between RIMC and BMI performance was insignificant. This may be due to the crisis context, where rapid managerial actions are prioritized over existing operational efficiencies, suggesting that RIMCs may play a more critical role during crises. Future research should explore other potential moderators, such as organizational culture, leadership styles, or external environmental factors like market volatility or regulatory changes, to gain a deeper understanding of the conditions under which RIMCs are most effective. Additionally, future research can enhance the generalizability of our findings by examining these issues in different regional contexts and across various industries. By addressing these limitations, future studies can build on our findings to provide more comprehensive insights into the dynamics of crisis-driven BMI.

### CRediT authorship contribution statement

**Saqib Shamim:** Writing – review & editing, Writing – original draft, Project administration, Methodology, Formal analysis, Conceptualization. **Fulya Acikgoz:** Writing – review & editing, Formal analysis, Data curation. **Pervaiz Akhtar:** Writing – review & editing, Resources, Conceptualization. **Riikka Sarala:** Writing – review & editing, Writing – original draft, Supervision. **Nadia Zahoor:** Writing – review & editing, Writing – original draft. **Abdulaziz Elwalda:** Formal analysis, Data curation.

### Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

1. We conduct experiments with new technologies. (Excluded due to low factor loading)
  2. We have the ability to come up with new methods to test technologies.
  3. Trial and error with new technologies is a routine matter for us.
  4. We do not know how to start experimenting with new technologies. \*
  5. We prefer not to mess with new complex technologies. \*
- \* refers to reverse items

Intensity (developed based on conceptual insights from Johnson and Murray, 2021).

We have committed a highly intense effort over a short period to respond to pandemic-driven problems.

1. We set deadlines for tasks planned to respond to pandemic-driven problems.
2. We set a series of short-term milestones to intensify our efforts to respond to pandemic-driven problems.
3. We used our best resources to intensify efforts to respond to pandemic-driven problems.

**Short-term strategic-IT-Alignment**

In response to the pandemic-driven problems:

1. Our organization has a short-term plan to use new technologies to align its operations.
2. Our organization has a short-term plan to develop new technologies for new types of products/services.
3. Our IT strategies are consistent with short-term business strategies for addressing pandemic-driven challenges.
4. We have adapted digital technologies that are more compatible with our temporary plans to address pandemic-driven challenges.

**Operational-IT-effectiveness**

1. IT helps us to improve business performance.
2. IT helps us to detect/catch operational errors.
3. IT helps us to reduce operational errors.
4. IT helps us to execute our plans more effectively.

**Crisis-driven business model innovation performance**

Amid the pandemic, our new business model helped us to:

1. Target new customers.
2. Offer products and services to meet customer expectations.
3. Improve our market positioning.
4. Create value from new resources, such as new technologies.
5. Create new competencies.
6. Improve our operations.
7. Satisfy our customers.
8. Improve our revenues.

**Appendix B.: Psychometric properties of the constructs**

	U	P	C	E	I	SITA	OE	BMIP
N= (no missing value)	139	139	139	139	139	139	139	139
Mean	4.08	4.00	4.14	4.04	4.05	3.8399	3.9047	3.8561
Std. Error of Mean	0.145	0.120	0.162	0.139	0.143	0.16918	0.17886	0.15496
Median	4.00	4.00	4.00	4.00	5.00	4.2500	4.2500	4.2500
Std. Deviation	1.707	1.414	1.908	1.637	1.687	1.99456	2.10877	1.82691
Skewness	-0.160	-0.328	0.075	-0.312	-0.007	-0.134	-0.174	-0.045
Std. Error of Skewness	0.206	0.206	0.206	0.206	0.206	0.206	0.206	0.206
Kurtosis	-0.850	-0.932	-1.386	-1.078	-1.268	-1.511	-1.546	-1.598
Std. Error of Kurtosis	0.408	0.408	0.408	0.408	0.408	0.408	0.408	0.408
Minimum	1	1	1	1	1	1.00	1.00	1.38
Maximum	7	6	7	7	7	7.00	7.00	6.50

**Note:** BMIP: Crisis-driven BMI performance, C: Collaboration, E: Experimentation, I: Intensity, OE: Operational IT-effectiveness, P: Prioritization, SITA: Short-term Strategic IT alignment, U: Urgency.

## Appendix C.: Cross loadings for lower-order constructs

	BMIP	C	E	I	OE	P	SITA	U
BMIP1	<b>0.809</b>	0.384	0.282	0.476	0.618	0.528	0.585	0.380
BMIP3	<b>0.867</b>	0.408	0.351	0.469	0.567	0.571	0.616	0.360
BMIP4	<b>0.858</b>	0.302	0.279	0.464	0.510	0.584	0.621	0.291
BMIP5	<b>0.860</b>	0.310	0.245	0.493	0.573	0.641	0.667	0.396
BMIP6	<b>0.742</b>	0.325	0.171	0.491	0.490	0.415	0.572	0.315
BMIP7	<b>0.977</b>	0.371	0.315	0.545	0.609	0.652	0.701	0.396
BMIP8	<b>0.750</b>	0.460	0.308	0.502	0.406	0.481	0.615	0.329
C1	0.447	<b>0.653</b>	0.218	0.423	0.400	0.514	0.417	0.243
C2	0.360	<b>0.850</b>	0.177	0.356	0.189	0.369	0.370	0.256
C3	0.271	<b>0.813</b>	0.102	0.327	-0.030	0.244	0.298	0.160
C4	0.185	<b>0.678</b>	0.276	0.320	0.002	0.376	0.252	0.445
E2	0.261	0.160	<b>0.805</b>	0.430	0.140	0.386	0.329	0.296
E3	0.092	0.225	<b>0.706</b>	0.302	-0.067	0.286	0.219	0.320
E4	0.254	0.122	<b>0.865</b>	0.480	0.175	0.375	0.393	0.312
E5	0.393	0.323	<b>0.817</b>	0.720	0.339	0.449	0.552	0.354
I1	0.527	0.460	0.564	<b>0.912</b>	0.352	0.517	0.639	0.429
I2	0.432	0.406	0.398	<b>0.877</b>	0.353	0.465	0.541	0.392
I3	0.619	0.398	0.303	<b>0.821</b>	0.403	0.508	0.601	0.394
I4	0.481	0.432	0.874	<b>0.891</b>	0.285	0.581	0.626	0.528
OE1	0.514	0.094	0.181	0.293	<b>0.848</b>	0.374	0.516	0.232
OE2	0.586	0.235	0.225	0.426	<b>0.889</b>	0.435	0.586	0.292
OE3	0.534	0.204	0.150	0.320	<b>0.896</b>	0.388	0.518	0.219
OE4	0.624	0.199	0.189	0.336	<b>0.886</b>	0.379	0.498	0.193
P1	0.578	0.468	0.349	0.455	0.255	<b>0.753</b>	0.522	0.410
P2	0.527	0.425	0.273	0.440	0.298	<b>0.798</b>	0.494	0.382
P3	0.414	0.294	0.301	0.403	0.293	<b>0.722</b>	0.411	0.371
P4	0.512	0.334	0.343	0.395	0.457	<b>0.718</b>	0.474	0.335
P5	0.398	0.321	0.368	0.397	0.410	<b>0.645</b>	0.384	0.316
P6	0.597	0.510	0.519	0.602	0.374	<b>0.931</b>	0.616	0.790
SITA1	0.700	0.412	0.397	0.611	0.512	0.578	<b>0.899</b>	0.441
SITA2	0.706	0.477	0.478	0.708	0.548	0.608	<b>0.926</b>	0.502
SITA3	0.588	0.326	0.443	0.517	0.563	0.526	<b>0.863</b>	0.425
U1	0.324	0.443	0.259	0.393	0.200	0.513	0.396	<b>0.851</b>
U2	0.346	0.214	0.363	0.490	0.223	0.422	0.448	<b>0.730</b>
U3	0.334	0.230	0.340	0.309	0.210	0.477	0.370	<b>0.799</b>

**Note:** BMIP: Crisis-driven BMI performance, C: Collaboration, E: Experimentation, I: Intensity, OE: Operational IT-effectiveness, P: Prioritization, SITA: Short-term Strategic IT alignment, U: Urgency.

## Data availability

Data will be made available on request.

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