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ORIGINAL PAPER

Crisis response strategies: a digital reluctance perspective

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Abstract

This research examines the convergence of digitalisation and managerial capabilities in shaping effective crisis response strategies, with a particular focus on understanding the factors that contribute to managers' digital reluctance. In a two-wave study conducted during the COVID-19 pandemic (2020–2022) through a Dynamic Managerial Capability (DMC) lens, we incorporate the qualitative data from managers of four coworking spaces into a theoretical model that assesses digitalisation as a determinant of DMC in crisis management. Our findings show that digital sensing, digital seizing, and digital reconfiguration capabilities effectively coordinate the survival process. Additionally, we introduce the concept of 'digital reluctance' as a constraint on DMC in the context of digitalisation. This behaviour stems from a combination of social, human and cognitive factors, including an avoidance of costly digital tools due to limited resources, scepticism about the ability of digital tools to address core challenges, lack of a compelling competitive advantage, intrinsic confidence in digital maturity, challenges in managing employee learning, and reluctance to sustain digital initiatives that do not yield immediate results. With a theoretical contribution to the crisis management literature, our study provides a better understanding of digital coping mechanisms, highlighting the importance of managers' social, human and cognitive capabilities. Practically, we analyse the managerial perspectives and pathways for adopting digital technologies to survive in crisis disruptions, against liquidity and solvency threats. Finally, we outline the relevant strategies for achieving business outcomes at four different levels of leveraging digitalisation and DMC exploitation.

Keywords Digitalisation · Dynamic managerial capabilities · Digital reluctance · Coworking spaces · COVID-19

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1 Introduction

A crisis is originally defined as a sudden, dramatic event that disrupts normal operations and requires immediate action (Rosenthal and Hart 1989). Contemporary perspectives recognise that crises often develop gradually, with underlying issues only surfacing when a triggering event exposes them, potentially leading to positive change if managed effectively (Roux-Dufort 2007; Bouncken et al. 2022). In line with this incremental managerial influence, crisis management involves preparing for, responding to, and recovering from emergencies with the aim of mitigating negative impacts on organisations (Smith and Sipika 1993; Wenzel et al. 2020; Williams et al. 2017). Theoretical perspectives highlight the fundamental constraints that crises impose on firms, requiring solutions to overcome various barriers (Sharma et al. 2024). Depending on the context and severity of the crisis, organisations adopt crisis response techniques that include retrenchment, perseverance, innovation or exit (Wenzel et al. 2020).

Regardless of the strategy adopted by organisations, digital skills play a key role in today's environment. Therefore, ongoing crises highlight the critical role of technology adoption in mitigating adverse impacts and enhancing organisational resilience. For example, recent examples demonstrate the effectiveness of digitalisation in crisis management. During Hurricane Katrina in 2005, digital tools such as communication platforms, cloud storage and remote working capabilities were crucial for disaster response and business continuity (Van de Walle and Turoff 2008). Similarly, during the Arab Spring, social media facilitated the organisation of protests and the dissemination of information in the midst of political upheaval (Richardson and Brantmeier 2012). The COVID-19 pandemic further accelerated digital adoption as organisations sought to improve efficiency, adapt to changing customer preferences and remain competitive (Rupeika-Apoga et al. 2022; Khurana et al. 2022; Seetharaman 2020; Clauss et al. 2022; Nayal et al. 2022; Zahoor and Lew 2023).

However, despite the growing body of research on organisational strategies in response to crises, there remains a gap in the literature regarding the actual role of digital capabilities in crisis response, and in particular the influence of managers in ensuring the effectiveness of these strategies. Managers play a fundamental role in selecting strategies, making appropriate decisions for their implementation and ensuring their success (Giones et al. 2020; Hadjielias et al. 2022). Leaders who can anticipate potential threats, plan strategically, take decisive action and learn from past crises are better equipped to lead their organisations through turbulent times (Wooten and James 2008; Hadjielias et al. 2022). During recessions, managers can successfully face innovation challenges by anticipating future scenarios and collaborating with external resources to maintain their capabilities (Alcalde-Heras et al. 2019). In times of financial crisis and austerity, a manager's sense of entitlement can either strengthen or weaken their perception of agency, affecting their ability to use their capabilities effectively (Chatrakul Na Ayudhya et al. 2019). Despite the increased challenges posed by limited resources during a crisis, survival chances can

be improved through risk aversion and an opportunity-based management approach characterised by innovativeness and proactiveness (Soininen et al. 2012).

Therefore, in light of the foregoing discussion, we believe it is essential to delve deeper into the role of digital capabilities in corporate crisis response. Moreover, we seek to understand how these digital capabilities, when synergised with the dynamic competencies of their leaders, can be harnessed to achieve transformative and sustainable outcomes. Specifically, this research highlights digital reluctance, hesitation to embrace digital transformation due to fear of disrupting existing workflows, lack of confidence in digital skills, and resource constraints (Yahia-Marzouk and Jin 2023; Merendino and Sarens 2020; Witschel et al. 2019; Rupeika-Apoga et al. 2022; Czakon et al. 2023). Thus, we propose the following research questions.

- How is digitalisation integrated into crisis response mechanisms?
- How do managerial capabilities influence the effective use of digital technologies during crises?
- How do key drivers and barriers of digital reluctance among managers affect crisis response strategies?

The general objective of this research is to investigate how digitalisation and managerial capabilities converge to shape effective crisis response strategies, with a focus on the factors influencing managers' hesitancy, digital readiness and reluctance. By exploring these questions through a two-wave research (2020–2022), we assess managers in four coworking spaces as they tailor their responses to the different market dynamics of the COVID-19 pandemic crisis. We set a deeper understanding of the role of dynamic managerial capabilities in fostering a resilient organisational crisis response. Dynamic Capabilities Theory (DCT) (Teece et al. 1997, p. 516) defines dynamic capabilities as a firm's ability to "integrate, build and reconfigure internal and external competencies to cope with rapidly changing environments". This framework is crucial for understanding how organisations adapt to crises. However, while DCT offers a robust macro-level understanding, a deeper exploration into the micro-level aspects is essential, particularly to the dynamic managerial capabilities (DMC) (Adner and Helfat 2003) which enable decision-making and adaptive behaviour during crises (Helfat and Peteraf 2015; Helfat and Martin 2015).

In practical terms, the research offers guidance to organisations facing crises on how to overcome internal resistance and adopt previously underutilised technologies. We present examples such as increased awareness of internal and external market enablers, collaborations and future prospects as possible contributors to overcoming this resistance. The research concludes by proposing a model that captures the factors that influence a CWS's adoption of digital technologies in response to crisis situations.

2 Literature review

2.1 Crisis management strategies

The study of strategic crisis management represents a pivotal area of inquiry within the field of organisational theory. Its objective is to examine the processes through which firms prepare for, respond to, and learn from crises. Abolafia and Kilduff (1988) define a crisis as an exogenous shock to which organisations attempt to develop endogenous solutions. A variety of change agents give rise to crises, which are complex and difficult to predict (Abolafia and Kilduff 1988; Boin et al. 2015). They involve numerous stakeholders, diverging interests and uncertainty about the appropriate course of action. Consequently, organisations are compelled to engage in improvisation and expeditious decision-making in order to effectively navigate the immediate challenges, necessitating that leaders maintain a delicate equilibrium between adherence to established protocols and adaptation to the evolving circumstances (Wenzel et al. 2020).

Research has focused on understanding crises, developing effective crisis management strategies that minimise their damage, and anticipating their organisational outcomes such as reputation, resourcefulness, trust, organisational learning, and financial performance (Bundy et al. 2017; Pal et al. 2014; Zheng et al. 2024). Consequently, effective crisis management requires a dual focus on both internal and external perspectives in order to navigate turbulent situations in an optimal manner (Bundy et al. 2017). From an internal perspective, key elements such as organisational learning, preparedness, crisis leadership and the management of complex systems must be considered. These elements involve anticipating, planning for and mitigating potential crises through resilience-building measures (Miklian and Hoelscher 2022). Furthermore, the organisational structure and design impact the efficacy of crisis management through the influence of culture, communication channels and resource allocation (D'Aurizo et al. 2015). From the external perspective, it is crucial to consider stakeholder perceptions, as they have the potential to influence an organisation's reputation, trust, and legitimacy (Weniger and Jarchow 2024). This communication-based perspective includes impression management and social evaluations, which entail the implementation of strategies to influence external perceptions and oversee the organisation's image and ethical standing during a crisis. Furthermore, it considers reputation protection and enhancement during and after a crisis (Bundy et al. 2017).

In this manner, organisations utilise a variety of strategies to effectively manage crises. These strategies may be classified according to a four-branch framework proposed by Wenzel et al. (2020), which distinguishes between retrenchment, perseverance, innovation and exit. *Retrenchment strategies* entail a reduction in costs and conservation of resources through the scaling back of operations, with the objective of maintaining stability and pursuing innovative renewal and opportunities emerging from the crisis (Smith and Sipika 1993). *Perseverance strategies* emphasise resilience and continuity and are oriented towards the maintenance of core business activities and the sustenance of operations in the face of adverse conditions. It is imperative that organisations adopt *innovative strategies* during crises, as this enables them to

develop new products, services, or processes that address the changed environment, thereby transforming challenges into opportunities (Pearson and Clair 1998). Prior experience of innovation prior to a crisis results in a greater long-term value being derived from the innovations implemented in response to the crisis (Lien and Timmermans 2023). In some instances, organisations may elect to pursue an *exit strategy*, withdrawing from particular markets or discontinuing unprofitable operations in order to focus on more promising areas (Grazzi et al. 2022). In addition to the organisational-level categorisation of crisis response strategies, other response patterns proposed in the literature address various dimensions of crisis challenges. The role of resilient managers in ensuring the survival of small firms (Hadjielias et al. 2022; Miklian and Hoelscher 2022) and in managing resource constraints (Santos et al. 2022; Soja and Soja 2020) has been highlighted by certain theories. Some studies investigate methods of enhancing preparedness through frugality and entrepreneurial actions (Lien and Timmermans 2023; Giones et al. 2020). The importance of organisational learning in enhancing resilience (Eggers 2020) and the utilisation of technology to address crisis-related adversities (Brem et al. 2024; Rupeika-Apoga et al. 2022) cannot be overstated.

At the individual level, effective crisis management requires managers to identify potential threats early, develop strategic risk mitigation plans, take decisive action, implement recovery strategies, and engage in critical reflection to learn from the crisis (Wooten and James 2008). The challenges faced by managers in a crisis situation are significant. These challenges may manifest in various forms, including administrative misconduct, overconfidence, knowledge gaps, a lack of independent thinking, and an underestimation of the complexities and potential threats involved (Bouncken et al. 2022). Those managers who are overconfident are often unable to recognise or address emerging problems, due to insufficient activation of their cognitive processes. Gaps in knowledge and experience can render managers ill-equipped to identify and respond to the seeds of a crisis, particularly in unprecedented situations such as pandemics or geopolitical conflicts (Wooten and James 2008). Furthermore, crises can give rise to behavioural changes that erode stakeholder trust, resulting in an imbalance of give-and-take relationships that may give rise to feelings of guilt or distress in managerial relationships (Cortez and Johnston 2020). Social capital, which can be deliberately fostered or emerge naturally from network relationships, is of crucial importance during extreme events. Formal efforts to build network communications and norms of reciprocity can create conditions for improved collective resilience (Johnson et al. 2013). Consequently, a dynamic and flexible approach, integrating both preemptive measures and adaptive responses to guarantee that organisations can successfully navigate crises and emerge stronger is necessary (Pearson and Clair 1998). As Habermas (1975, p. 25) states, “The crisis cannot be separated from the viewpoint of the one who is undergoing it.”

2.2 Digitalization for crisis recovery

The unprecedented crises situations are accelerating the evolution of information and communication technologies (ICT), bringing changes to social, economic, and political landscapes worldwide. By identifying deficiencies and organisational weak-

nesses, such as inefficient processes or outdated systems, crises can prompt the adoption of digital technologies to enhance efficiency and resilience. This is exemplified by the strategic renewal of the healthcare industry in the context of the global pandemic (Yahia-Marzouk and Jin 2023). Such circumstances compel society to adapt expeditiously to novel dynamics, thereby enhancing the strength and relevance of numerous digital technologies (Brem et al. 2024; Crespo et al. 2023). For a considerable number of firms, innovation has become a crucial factor for their continued existence and recovery, as they employ digital tools to navigate the challenges posed by external factors (Brem et al. 2024).

The process of digitalisation, defined as the exploitation of digital opportunities to transform business models and enhance both performance and scope (Verhoef et al. 2021; Rachinger et al. 2019), plays a pivotal role in crisis recovery. Verhoef et al. (2021, p. 889) define digital transformation as "the strategic deployment of digital technologies to develop new business models, thereby creating and appropriating more value for the firm". This transformation involves the interactive use of technologies such as email, chat, social media, cloud technologies, sensors, big data, and 3D printing to create new products, services, and business models (Brennen and Kreiss 2016; Clauss et al. 2022). Digitalisation is a catalyst for digital transformation in organisations that are prepared for change (Fitzgerald 2014). It enables companies to innovate their business models by identifying new market opportunities, thereby capturing value, enhancing efficiency and effectiveness, and increasing overall competitiveness (Nambisan 2017). The utilisation of digital technologies enables organisations to reduce costs, enhance efficiency and mitigate risk (Nayal et al. 2022). It facilitates strategic agility by improving real-time data analysis and decision-making processes (Verhoef et al. 2021; Bharadwaj et al. 2013). To illustrate, in the context of supply chain management, the utilisation of digital tools, including the Internet of Things (IoT), blockchain technology and robotic process automation, can enhance transparency and efficiency. Furthermore, digitalisation facilitates customer engagement strategies by providing platforms for personalised interactions (Leso et al. 2023). However, for these tools to be effective, they must be integrated into a broader strategic vision (Zahoor and Lew 2023; Khurana et al. 2022). Thus, digitalisation in itself is not a strategy, rather, it is a mechanism for optimising crisis response strategies, enhancing existing strategic initiatives. This is because it lacks the directional guidance and long-term goals that define strategic planning (Wenzel et al. 2020). In order to drive meaningful results, it must align with the overall business objectives, acting as an enabler and optimising the execution of well-defined strategies (Yeow et al. 2018; Witschel et al. 2019; Bharadwaj et al. 2013).

In periods of crisis, stakeholders typically demand greater transparency and responsiveness, necessitating the implementation of digital communication channels to facilitate effective engagement (Rupeika-Apoga et al. 2022; Khurana et al. 2022; Seetharaman 2020; Clauss et al. 2022; Nayal et al. 2022; Zahoor and Lew 2023). Furthermore, the interconnectedness facilitated by digital platforms can reinforce relationships with suppliers, customers, and partners, thereby enhancing organisational agility and adaptability. In the context of natural disasters, such as hurricanes or earthquakes, the interconnectedness facilitated by digital platforms can reinforce relationships with suppliers, customers, and partners, thereby enhancing organisa-

tional agility and adaptability (Van de Walle and Turoff 2008). Such digital solutions facilitate real-time communication and coordination, thereby ensuring a more resilient and responsive supply chain in the event of unforeseen disruptions (Richardson and Brantmeier 2012).

In conclusion, crises can act as catalysts, propelling organisations towards a more digital future. As evidenced by recent studies, digital technologies are being employed with increasing frequency in response to climate change crises, thereby facilitating both adaptation and mitigation efforts. For example, the implementation of renewable energy technology represents a substantial advancement in this digital transformation (Abbass et al. 2022). In the context of the pandemic, the advent of novel work models and shifts in consumption patterns compelled organisations to undergo a swift phase of adaptation in their supply chains and production processes (Seetharaman 2020). The ever-changing business environment, coupled with the advent of new technologies and disruptive competitors, has compelled industries to adopt digital technology in a more strategic manner (Khurana et al. 2022). This transition not only enables organisations to become more resilient in the face of environmental challenges but also drives sustainable development and innovation across a range of sectors.

2.3 Dynamic managerial capabilities and digital reluctance in crisis

Crises, by their very nature, necessitate a departure from the status quo and dictate leaving the usual methods, because they became infeasible (Levinthal and March 1981). The dynamism of the environment directly impacts the capabilities of the firm as a whole. It is essential to continuously renew the firm's competences, resources, processes, products, strategies, and business models to respond effectively to changing environments (Teece 2007). In that sense, dynamic capabilities determine firms' "ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments" (Teece et al. 1997, p. 516). The theory discusses implementation of the three overarching clusters: Sensing, Seizing and Reconfiguration/Transforming (Teece et al. 1997; Teece 2007) as patterned practices to meet the increasing level of demand uncertainties in the market. Sensing capabilities involve the ability to capture external knowledge and realise change in opportunities before rivals (Schoemaker et al. 2018). Organisations must seize these opportunities and respond to change in the market by innovating and implementing new systems of processes, products or services (Teece 2007; Schoemaker et al. 2018; Helfat and Raubitschek 2018). Lastly, these strategic decisions come into the process cycle to integrate, reconfigure and build new capabilities (Teece et al. 1997).

Digital technologies are crucial for organisations during turbulent times. However, it is the effectiveness of these technologies that largely depends on managerial capabilities (Heubeck 2023). Fitzgerald (2014) argue the vitality of organisational management and strategy making in the challenging digital transformation process. In times of crisis, technology acceptance differs due to heightened uncertainty. This can lead to standardised adoption and hinder adaptation. Decision-making and strategy execution in uncertain environments is more complex and requires stronger digital competencies from managers (Rodrigues et al. 2021). It is a fact that 70% of digital

transformation programmes fail due to employee resistance and lack of support from management (Bucy et al. 2016). Strong leadership skills, including entrepreneurial abilities, organisation and ICT skills, motivational capabilities, flexibility, commitment and creativity, are essential to overcome the numerous digitalisation-related challenges (Klus and Müller 2021).

Digital reluctance, or the hesitancy to adopt digital technologies, is a common phenomenon at the individual managerial level. In crisis response, reluctance is the term used to describe the hesitation some organisations display in adopting digital technologies despite their potential to mitigate crisis impacts. In a crisis context, this inevitably leads to the use of frugal methods or incremental, low-cost solutions, rather than comprehensive digital transformations (Giones et al. 2020). Digital reluctance is a limiting factor in technology investment and control, hindering the organisation's digital maturity. It manifests in a lack of confidence in digital skills and a fear of disrupting existing workflows.

Successful digital transformation requires managers to predict trends and refine digital strategies continually (Warner and Wäger 2019). However, some managers may lack a comprehensive understanding of emerging technologies and their potential applications within the organisational context (Merendino and Sarens 2020). Lack of confidence in digital skills is a significant barrier, often stemming from unprepared or inadequately trained employees, leading to anxiety and resistance (Soja and Soja 2020). Although cost-effective digital solutions may be available, managers lacking strong sensing capabilities may struggle to identify and adopt these resources effectively, being overly concerned with the risks and trade-offs of innovation. In addition, uncertainty during crises, combined with inadequate financial, technological, and human capital, inevitably leads to a risk-averse decision-making style (Bouncken et al. 2022; Miklian and Hoelscher 2022; Mclean and Steyn 2023). Managers often favour actions that promise short-term results over those involving riskier and harder-to-evaluate long-term outcomes (Czakon et al. 2023). Cognitive biases also impede digital transformation efforts during crises. These mental shortcuts, while useful in routine decision-making, lead to failures in complex situations. The "stable perspective bias" causes managers to underestimate the dynamic nature of crises and overestimate their ability to rely on established mental models, which results in missed opportunities for adaptation and innovation (Czakon et al. 2023). Fear of disrupting workflows and a preference for familiar processes create resistance (Kallmuenzer et al. 2024). Without adequate training and development, managers and employees will undoubtedly struggle with digital tools, which will lead to a lack of confidence or frustration (Witschel et al. 2019; Rupeika-Apoga et al. 2022).

3 Context and methodology

This research employs a qualitative multiple case study methodology, which allows for an in-depth investigation of a phenomenon whose boundaries are not clear in advance (Eisenhardt and Graebner 2007; Langley 1999). The pandemic in the crisis context presented a novel situation making "how" and "why" questions crucial to theory development (Creswell 1998; Yin 2009). The two-wave method of data col-

lection over three years was selected chosen as the most appropriate approach for studying the cumulative nature of dynamic capabilities (Laaksonen and Peltoniemi 2018). The empirical setting focuses on coworking spaces in Barcelona, where we examine the acceleration of digitalisation and its managerial implications.

3.1 Context: digital disruption during COVID-19 pandemic

The emergence of the pandemic has had a profound impact on businesses of all sizes, from local grocery stores to established companies, compelling them to adapt and accelerate the adoption of technology, (Worldbank 2021). The changes in the market prompted a surge in technological disruption, affecting various industries in disparate ways. While professional services such as finance and real estate demonstrated a greater capacity for adaptation, other sectors encountered considerable difficulties. A significant decline in employment was reported by businesses in the retail, arts and entertainment, personal services, food service, and hospitality sectors, with figures exceeding 50% (Bartik et al. 2020). However, this technological wave also presented unexpected opportunities. Simple tools emerged as vital resources, enabling and fostering community and civic spirit, particularly for organisations with limited capacity to detect and adopt such technologies. A considerable number of small businesses, including personal trainers, tutors and client advisors, employed novel techniques to adapt and innovate their operational procedures (Akpan et al. 2020; Hadjielias et al. 2022).

In alignment with these observations, the pandemic illuminated the disparate uptake of digitalisation, as financial constraints constrained and precluded small companies in diverse industries from accessing technological expertise (Klein and Todesco 2021). While digital preparedness had an impact on the resilience of larger companies (Münch and Hartmann 2022), the absence of financial resources, skills, and technological competency constituted significant barriers to the adoption of digital technologies by SMEs (De Lucas Ancillo et al. 2022). In order to overcome these obstacles, a number of firms sought financial assistance from public institutions with a view to transforming their digital capabilities (Klein and Todesco 2021).

3.2 Research setting: Barcelona's coworking industry during pandemic

Coworking spaces are defined as office-like shared workplaces (Capdevila 2015). The impetus for digitalisation in these workplaces is derived from the tasks of the internal coworkers or the communication activities between them and the workplace staff (Bouncken et al. 2020). In contrast to many industries, where supply chain issues have the potential to jeopardise a company's position, the primary challenge faced by CWSs during the pandemic was the direct and imminent closure of spaces and the cancellation of events. This resulted in a significant reduction in the participation of coworkers (Calders 2020).

Main concern for CWS management during the initial phase of the pandemic was member attraction, followed by financial constraints (Sans 2022). As the pandemic progressed, the discrepancies in digitalisation adoption between large corporations and SMEs were highlighted (Klein and Todesco 2021). These challenges were fur-

ther intensified, compelling CWSs to adopt a more innovative approach, including the integration of digital technologies, to revitalise their operations (Lundgren et al. 2022). As the pandemic work models evolved, the competitive landscape shifted from a comparison between coworking spaces and home-based remote work to a competition among coworking spaces themselves, with those offering advanced digital capabilities gaining an advantage.

A notable distinction emerged between modernised coworking spaces with corporate customers primarily situated in central districts and individually operated traditional coworking spaces (Micek et al. 2023). Disparities of access to capital and the level of customers' preparedness for the pandemic conditions were pivotal in determining the scope and sophistication of the resources provided by CWS managers to their clients (Micek et al. 2023). In order to gain a competitive advantage, it was necessary to adopt new digital technologies to reinvent business practices (Cabral and van Winden 2022).

A total of 315 CWSs are located in Barcelona, with 231 situated in the city centre and 84 in the peripheral region. Although it has a smaller total distribution of offices than Madrid, with 233,000 square metres in 2022, the city still hosts 65 branches of the 17 largest companies in the country. By the time the initial outbreak and subsequent lockdowns occurred, the total number of spaces had fallen to 353, indicating a loss of smaller spaces during the period of economic turbulence caused by the pandemic (Fig. 1).

On a global scale, the principal responsive structural changes of CWSs were physical distancing, the implementation of rigorous hygiene protocols, and the prohibition of large-scale events, as of November 2020 (Deskmag 2020). This resulted in a 23% reduction in the number of contracted memberships and a 53% decline in the number of members physically engaged at a CWS on a daily basis. Membership loss

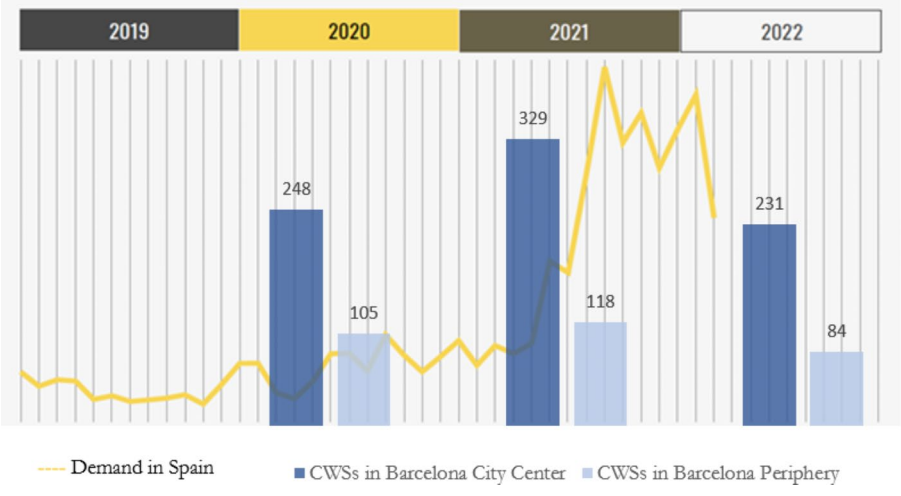

Fig. 1 Evolution of the number of coworking spaces in Barcelona in comparison to the demand trend in Spain. *Source*: Elaborated on Coworking Spain (2024)

for CWSs with higher revenues was 20% and 70% respectively, indicating that larger organisations were more adversely affected.

Because of the pandemic, there has been a notable increase in the adoption of digital technologies, which has resulted in a period of robust growth for the online and teleworking models. This has led to the emergence of a new group of employees who are able to work from any location, rather than solely from their own company offices (Lee and Trimi 2021; Ceinar and Mariotti 2021). Such disruptions in the competitive landscape gave rise to a novel form of competition between the various spaces in an effort to reach new consumer groups who were no longer willing to attend office gatherings.

The decline in membership numbers began to reverse as businesses came to recognise the importance of coworking spaces in facilitating remote work. In 2021, as a consequence of the increased pandemic induced demand, the leaderboard among the top players in terms of the number of spaces underwent significant changes, particularly with the inclusion of new high-ranking companies. By 2023, an average well-known coworking space accommodated 8.4 users per square metre, resulting in industry-wide annual earnings of 179 thousand euros from 109 thousand users (Coworking Spain 2024). The market value is distributed between the major players and the remainder of the market by 54% and 46%, respectively. This illustrates the intense competition between the major and the smaller players in two distinct market segments (Coworking Spain 2024). The sharp decline in demand for offices at the beginning of 2022 indicates a return to normal business practices and a resumption of pre-pandemic commuting patterns. Since then, the number of coworking spaces in Barcelona has continued its downward trend (Coworking Spain 2024).

3.3 Sample selection and case study companies

In designing our empirical research, we based the selection criteria on the stipulation that the participant spaces must have been established at least three years prior to the onset of the pandemic. This was done with the intention of examining the managerial capabilities of executives based on a minimum level of experience. Email invitations were sent to companies, ensuring confidentiality per university ethical standards.

In the initial phase, seven distinct spaces were included. The subsequent year, two of the CWSs declined to participate. Data were collected from these five CWSs between 2020 and 2022 via the two-wave research model (Fig. 2). Using the operational construct sampling method (Patton 1990), we then selected four CWSs by their management complexity, with the number of managers serving as a metric. The analysis included data from nine interviews with five managers from these four spaces (Table 1).

3.4 Data collection

The methodology for data collection was developed concurrently with the research questions formulation. Data collection for the first and second waves of the study were conducted between March–July 2021 and March–July 2022, respectively (Fig. 2). In order to align with the relevant theoretical framework and the process of digitalisa-

Fig. 2 Data collection timespan contrasted with the duration of the first and second waves of the pandemic and the implementation of curfews and lockdowns. *Source*: Author's elaboration on number of Covid-19 deaths in Spain distribution chart (OurWorldinData 2022) and CatalanNews (2021a, b)

Table 1 Descriptions of the participants interviewed for data collection. *Source*: own elaboration

CWS	ALPHA	BETA	GAMMA	DELTA	
Position	Founder and manager	Founder and manager	Community Manager	Director/Manager	Business Developer of Innovation, Partnerships Manager
Managing years	4	5	5	5	3
Date of interview	March 16 2021 May 22 2022	May 19 2021 May 24 2022	July 2 2021 May 3 2022	March 30 2021	April 20 2021 May 10 2022
Duration	67 min 25 min	68 min 31 min	18 min 10 min	57 min	52 min 17 min
Modality	Onsite Onsite	Online Online	Online Onsite	Onsite	Onsite Online
Language	English	Spanish	English	English	English
Data coverage	Preliminary interview with company founder 1st year and 2nd year interviews with founder 1st year interview with company employee Documentation and observation of company relations with coworkers	1st year and 2nd year semi-structured interviews with founder Documentation and observation of company relations with coworkers	1st year and 2nd year semi-structured interviews with community manager Documentation and observation of company relations with coworkers	1st year and 2nd year semi-structured interviews with founder Documentation and observation of company relations with coworkers	

tion, interviews process represented a micro-foundational view, revolving around the sensing, seizing, and reconfiguring dimensions, and addressing the repercussions of the pandemic (Table 2). The second year in research corresponds to a period in which uncertainty lost its pressure over the companies. The aim of data collection in this consecutive year was to detect incorporation level of the DC developed in the previous year, highlighting the points not discussed previously.

Research required continuous monitoring of the pandemic impact on the general population, with a particular focus on the target groups. We tracked changes in governmental policies, infection rates, and regional lockdowns. Furthermore, the document review encompassed the participant company communication including blogs, social media posts, digital advertisements, press releases, broadcasts, conference recordings, client communications, and e-bulletins. Secondary data from industry blogs and conference materials were also monitored to gain insight into managerial responses.

3.5 Description of participant cases

This section introduces the selected coworking spaces by their main features, as well as challenges, readiness levels and their reactive strategies during pandemic (Table 3).

Table 2 Key questions about dynamic capabilities obtained during pandemic crisis management. *Source*: own elaboration

Main theme	First year questions
Identifying strategies	How did you recover from the crisis?
Sensing	How did you realize that alternative? Why was it appealing?
Seizing	How did you implement that change? How did you adapt your company to new procedures and processes? How did you overcome the challenges during implementation?
Reconfiguring	Tell us about your experience after this strategy change? How impactful was this action for company performance? How did your clients/employees adapt to this new state? How would you improve this feature in the future?
Main theme	**Second year questions**
Recalling general framework about strategy and outcomes:	What was your strategy? (What was in your mind/your objective when you planned it) How did you implement it? (Expectations vs. implementation) How effectful were these measures? (Why did/didn't they work? Did you run across any challenges? Name them.
Seizing	Which factors were the most influential driving force in adopting digitalization measures?
Reconfiguring	At what level did your CWS internalize the acquired capabilities into the standard procedures and routines? Why?
Reconfiguring	Will you continue using the adopted digital capabilities after the pandemic? Why?

Table 3 Case companies, challenges, readiness levels and their reactive strategies during pandemic. *Source*: own elaboration

CWS	ALPHA	BETA	GAMMA	DELTA
Number of employees	2	2	8	40
Number of locations	1	1	3	7
Managerial complexity	Owner-manager	Owner-manager	Multi manager	Multi manager
Company age	4	6	13	5
Number of customers at normal	50	75	300	4,000
Customer loss	90%	84%	13%	75%
Primary challenge in pandemic	Scarcity of financial and human resources	Reaching potential customer	Some customers with payment inabilities	Attrition of large companies
Perceived degree of digital tools adoption	Low	Low	High	Moderate
Perception of digitalization as a mechanism for business continuity in pandemic	Moderately important	Not Important	Moderately important	Slightly Important
Readiness for pandemic	Not prepared but must cope	Not prepared but must cope	Prepared enough, no need to add anything	Not prepared but must cope
Major trigger of strategic change	Demand from coworkers	Obtaining visibility and reaching more coworkers to convert Change of coworker type in the spaces	Change of coworker type in the spaces Creative solution model of management team Social responsibility	Being competitive Change of coworker type in the spaces

3.5.1 ALPHA

The CWS is centrally located, near the commercial and tourist areas. The workforce comprises both international and local professionals. This space was severely affected, with the loss of over 90% of its workforce during the initial phase. In the first wave of the study, the repercussions of loss prompted the manager to undertake a series of strategic pivots. During the second wave, the company was able to regain some of its revenue, but the growth figures were still far below those seen prior to the pandemic. This prompted the manager to explore a range of strategies aimed at attracting potential customers to the premises. The business model was reconfigured with the introduction of new lines, including co-living and consultancy, among others.

3.5.2 BETA

Unlike other cases, this CWS is situated outside the city centre, in the closest municipality bordering Barcelona. The manager has successfully operated the company with growth rates over a six year period. However, maintaining visibility through online marketing remains a significant challenge, given the company's location outside of a concentrated population area. The significant loss of 84% of the workforce during the period of lockdown prompted BETA to implement a series of strategic changes. In essence, the manager opted to augment investment and focus on digital marketing activities, particularly considering the departure of the largest client with whom they had been servicing a considerable number of employees. The primary objective was to extend the company's reach to potential clients and maximize conversions during a period of reduced foot traffic, when compared to previous periods.

3.5.3 GAMMA

GAMMA was established with a community-oriented approach, attracting freelancers and self-employed professionals from small businesses and large corporations. The company quickly expanded to three distinct neighbourhoods in Barcelona's city centre, offering a variety of workspaces for social interaction. The company employs a differentiation strategy, whereby over 300 professionals engage in projects that facilitate the advancement of their immediate surroundings. In comparison to other participants GAMMA experienced the effects of the pandemic to a relatively limited extent. The implementation of clearly defined protocols enabled the workforce to remain informed and adaptable as they started remote working. The company was able to navigate the initial challenges of the pandemic without the need for significant strategic shifts and experienced minimal customer attrition, with only 13% of customers affected in the initial phase. This was largely addressed through practical adjustments to payment packages.

3.5.4 DELTA

DELTA represents the largest company within the study, with six workplaces that attract freelancers, technology professionals, and large companies. The provision of services is conducted within expansive premises that afford the requisite space for team activities and events. The company registered considerable and conspicuous growth in a relatively short period of time in comparison to its competitors within the city, thanks to the effectiveness of its managerial approach. Still, the company experienced a gradual decline in its clientele, with approximately 75% of its 4000 coworkers leaving in the first wave of the pandemic. In essence, the sudden mass departure from a single company in a single day had a significant impact, intensifying the uncertainty surrounding the company's overextended capacity. The managerial team employed the period of relative inactivity during the lockdown to develop a new organisational perspective, restructuring the company at its core, including the introduction of new technologies to facilitate workflow and profit maximisation.

3.6 Qualitative content analysis

Interviews were recorded using online streaming or mobile phone apps, depending on whether the sessions were online or face-to-face. The recordings were transcribed to preserve data integrity, and Spanish transcripts were translated using Microsoft Word with manual adjustments. Data was organized using Atlas.ti, with sources anonymized for confidentiality. A coding scheme of 250 open codes from 225 quotations was developed, following the interview structure and forming nodes for network analysis. The network visualization (Fig. 3) allowed clarify the relationships between the data, aiding in the interpretation of the research outcomes.

Furthermore, the network analysis of the existing themes in the study facilitated the comprehension of the data, enabling its elevation to an abstract level and the formulation of a more rigorous analysis. This approach facilitated the identification

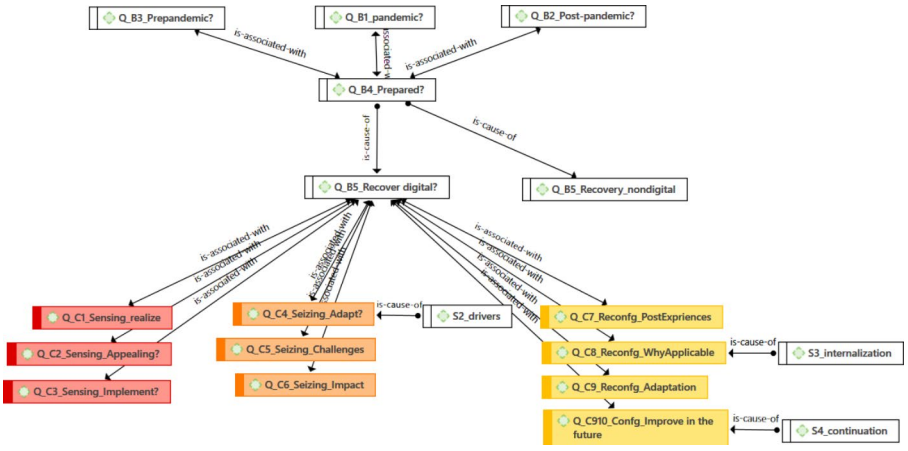

Fig. 3 Atlas.ti network analysis on two-wave semi-structured interviews. *Source*: Atlas.ti software network analysis on 9 semi-structured interview data

of additional themes that could not be corroborated through interviews. Data was collected from a variety of sources, including company online documents (primarily websites), online interviews with other sources, and social media interactions.

At this subsequent stage, the category system was re-clustered to form a list of first-order codes, representing digital strategies used to develop dynamic capabilities, following Gioia et al. (2013). The categorisation process yielded 39 first-order categories. The determination of these first-order categories was based on a comprehensive examination of primary data, which encompassed interviews, observations, and a triangulation with the literature review that encompassed companies' response mechanisms. Subsequently, axial second-cycle coding was employed to generate 9 s-order themes. Thirdly, the second-order themes were situated within the pertinent aggregate dimensions. This procedure resulted in the formation of a data structure representing the digital technology-enabled dynamic capabilities employed during the crisis (Fig. 4). In conclusion, our research methodology was further refined to incorporate a practical lens. In this final stage of the analysis, the four types of companies were reviewed according to their level of leveraging digitalisation and dynamic capabilities, as determined by their advancement in the code structure themes (Fig. 6). This final framework allows managers identify actionable insights for aligning their strategies with the evolving digital landscape.

4 Results

The objective of this research was to identify and support the underlying themes of sub-concepts that play a role in leveraging dynamic managerial capabilities in adverse conditions. To achieve this, we analysed organisational and managerial strategies that blend with them and explored the way managerial inputs give rise to pivotal instances of truth in the integration of digitalisation into crisis response mechanisms and identified the principal drivers and barriers that impede their individual capacity for positive contribution.

4.1 Integration of digitalization to crisis response mechanisms

The pandemic demanded that managers to demonstrate expertise and introduce innovative, cost-effective services while optimizing efficiency. Rather than implementing a single strategy of retrenchment, preservation, or pivoting, a combination of these strategies was employed, depending on the situation (Table 4). Retrenchment strategies included new pricing structures for desks and offices within the space, facilitating a more sustainable and stress-free payment plan for coworkers, with the option of staying for extended periods up to months, until they are able to resolve their own liquidity challenges. To offset rising costs with reduced income, DELTA relocated back-office services between locations. The companies employed a perseverance strategy and implemented flexible and new payment alternatives. For example, DELTA offered flexible new payment alternatives, such as discounts for longer stays, while GAMMA adapted their marketing mix with bonus packs, new customer plans, and lower rates.

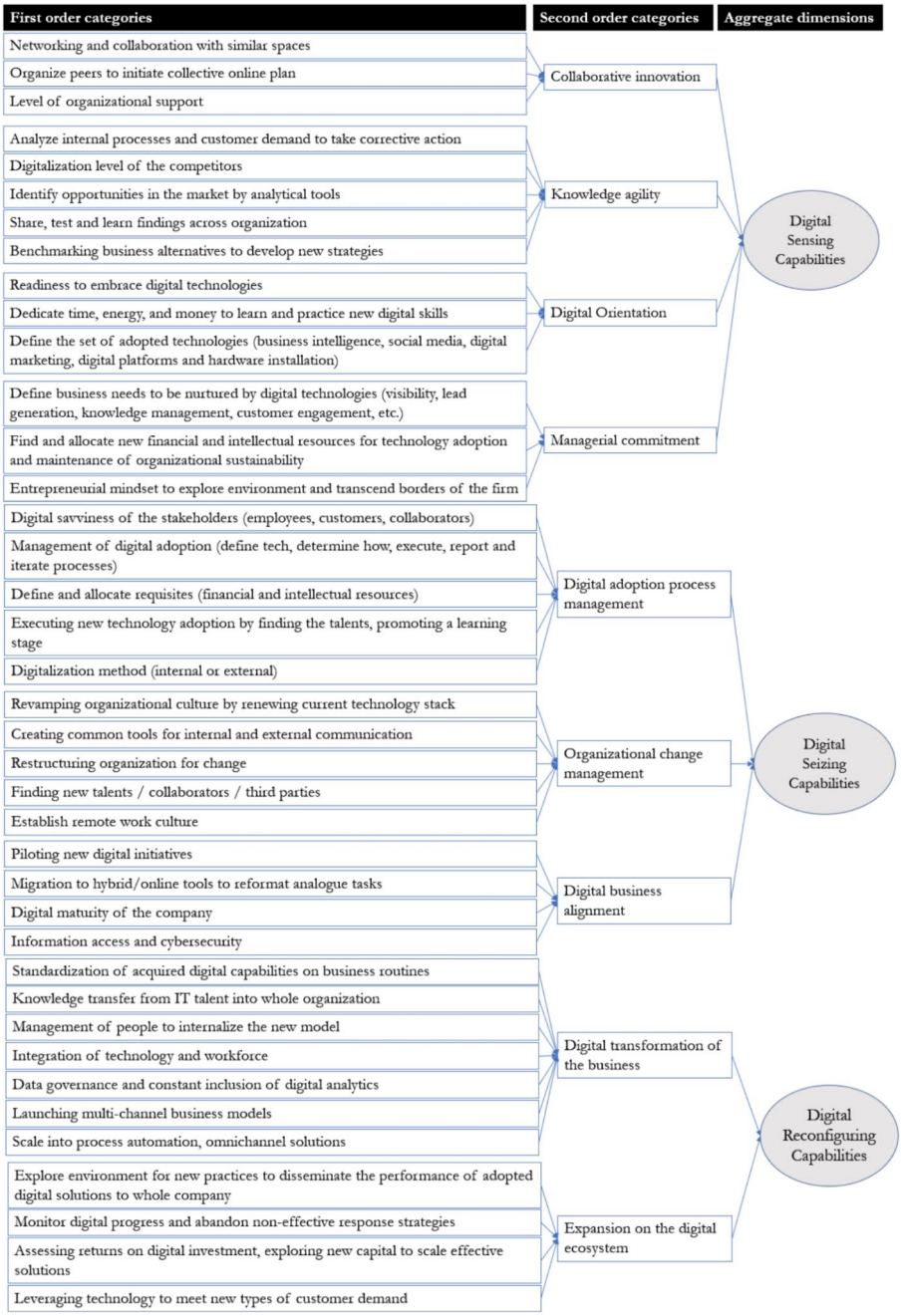

Fig. 4 Thematic analysis data structure of digital technology enabled dynamic capabilities leveraged during the crisis. *Source*: Own elaboration

Table 4 Crisis management strategies during pandemic. *Source*: own elaboration, adapted on Wenzel et al. (2020)

	Retrenchment	Persevering	Innovation/pivoting
ALPHA		Flexible and new payment alternatives	Business model innovation: extended services with co-living and consultancy +Create virtual community by launching online coworking channel
BETA	Compensate increasing costs with not paying rents	+ Target true customer via digital marketing	+ Develop a digital strategy plan to strengthen brand identity and adapt to changing customer profile + Improve efficiency by digitizing daily operations.
GAMMA		Marketing mix adaptation: Flexible new payment alternatives like bonus pack, new customer plan, lower rates.	
DELTA	Transferring the services between locations	Marketing mix adaptation: Innovation in product portfolio. Flexible new payment alternatives like discounts for longer stay	Change the organisational structure to form multidisciplinary teams +Employ knowledge management by restructuring account management system. + Develop internal communication by implementing Intranet and Slack tools. + Create virtual community by hybridizing events (Pitching contests and similar)

Table elements with (+) indicate solutions that required digital adoptions

… and we have created new fares and new products. We've seen that there's people that totally needs to stay here for hours, so it doesn't have any sense to pay a monthly rate. So, we created a pack of bonus. For 4 days, 10 days, 20 days. And it works like the public transportation ticket. So, you have to in a pack of 20 days, you can come anytime one day today and maybe you'll come back till next month.

These tactics did not entail digitalisation, but instead offered quick financial relief through simple measures. Some non-digital pivots succeeded such as ALPHA's business model innovation to move into co-living and consultancy, driven by relentless day-and-night efforts to experiment with anything potentially interesting to restore lost income. Nevertheless, digital skills and resources played a greater role in innovative and transformative efforts, targeting new customer segments through digital marketing and restructuring daily operations (Table 5). Below is a sequence of processes illustrating how they sensed, seized, and reconfigured new capabilities to survive the crisis digitally.

Table 5 Core tenets of digital sensing, seizing, and reconfiguring. *Source*: own elaboration on coworking space manager interviews

Process	Digital sensing	Digital seizing	Digital reconfiguring
ALPHA	Originated by group meetings for strategy development, network engagement	Learning and implementing personally, quick adaptation, learning on the fly, with few and slow monetization benefits.	Initiated webinars, small online courses, enhancing flexibility
BETA	Developed with collaborators for digital strategy and security.	Introduced technologies for sharing the knowledge base (Notion) and digitalizing the previous templates (Holded). Slow monetization benefits, some wrong actions taken.	Restarted with new collaborators, restructuring
GAMMA	Limited sensing due to perceived stability.	Continued extant technologies, i.e. webinars, Zoom workshops, internal communication (Hangout, Slack), e-payment, e-invoicing, etc.	Launched new communication channels
DELTA	Internal information flow for new tech development.	Centralized decision-making (Salesforce). Had to change the team mindset, was complicated and hard. Could see the customer's pains and solve them to get good feedback. Yet, the results did not reflect on KPIs fast.	Promoted activities/events on Slack

4.1.1 Digital sensing capabilities

In the context of the pandemic, all spaces were particularly receptive to online discovery of technologies that could be employed to address the initial shock and the subsequent disruption. The adoption did not merely address the fundamental aspects of coworking engagement, but also allowed to reorganise the organisational structure. The objective was to maintain competitiveness and adapt to the challenges of the period in order to meet customer demands. Managers proactively explored the new digital tools through group meetings and internal analyses and external collaborations including social media inquiries, and strategic committee meetings. Among sensing alternatives, we see small CWSs engaging in collaborative efforts with external sources, such as ALPHA relying on her group meetings with fellow CWS managers in other spaces:

> "We just allocate some of my hours on, on having meetings with, the girls… or coworkers. So, we just allocate these hours on defining what we want to do. When do we want to be and everything. And then made a small landing page. We started mainly with webinars. So, every month we are doing a webinar. That way we can get like also new contacts and this people can participate. We're starting like this. And then we went to launch, some… like small courses or tutorials, skill shares, workings and stuff like that. But yeah, for now, for now, it's everything for free. ".

Challenged by lack of organisational support BETA hired collaborators to help her in defining a totally structured new digital strategy:

> "The conversion and recruitment part comes to me online… [But,] Okay, not everything social networks work the same for companies. So, through testing campaigns, I wanted to select social networks that for my post or objective and for my pocket the level of money can work better… This campaign, I have done it with Facebook… Landing page ads, lead capture, payment of the Facebook ad… [Yet,] Invested enough money and it has not worked for me. Instead, the Google Ads campaign would worth it…. Because it is measured… I found a person who is dedicated to Google Ads campaigns. So, we have done a segmentation, a keyword search, there has been all the analysis of Google Ads, with a person who is a specialist, to be able to define and segment and search for the words by which can be searched. ".

DELTA, the giant company, leveraged internal information from both customers and management to develop new technologies, such as payment systems and knowledge management tools.

> "… I was asked by the direction to develop the services department which offer more services to our customers so when I started analysing which services I could offer to our customers, I realized that we don't know our customers enough so I couldn't know what they want… So, we started … this project of

building a system to be able to get to know every account and customer so that we can identify what are they needs and where we can help them. “.

4.1.2 Digital seizing capabilities

The strategies that were perceived as appealing were promptly adopted by the relevant spaces. In the initial month, all had completed the configuration of their websites and social media channels in order to maintain customer engagement. The deployment of more sophisticated technologies required a greater financial investment, skilled professionals, and a more pervasive integration into routine workspace management. Managers rapidly embraced digital marketing, online courses, webinars, and knowledge management systems to boost customer engagement and efficiency. They invested time learning new digital tools, collaborating external experts, and optimizing internal resources to ensure smooth adoption. This process highlighted their technological readiness, though challenges remained and not all efforts were successful. An informant from DELTA explains the challenges encountered during initial deployment of Salesforce:

“It was very difficult. The main challenge was that, since we had never done it before, we had to change the process a few times. And it was hard for the team because it for them was like ’Okay, you asked me first’ one thing, then we change it, and I have to do it again. So, basically, we try to really explain that we were like building and learning at the same time, and trying to make the team empathize with us, with the leaders, just to understand. “.

Primarily, the hours and effort dedicated to seizing new capabilities were not observable in key metrics. According to first- and second-year data, the motivation of the managers to keep on trying new models stemmed from their desire to appraise each initiative to see if it would positively affect the bottom line. As reflected in the DELTA manager’s words:

It was necessary to do it, and because of the challenge, we were pushed to do things that were not in our day that we didn’t imagine we could do.

Likely, the manager of BETA was training themselves for handling automation processes via digital platforms:

For example, we also do many maintenance tasks because it is a very large building we’re in. Well, you have to come and do the air conditioning check, the elevator check, the water source check, and so on. Because here in the Notion, you can go placing or indicating what day and what has happened with such a review. And if one day you have to do a search directly to maintenance and read what has happened with the water, or what has happened with the light, it is a way to have information instead of having an Excel, a calendar, or a list. All your tasks, you can have it here and on your mobile, or on any computer.

The same company manager defined their process of recovery slower with regards to other greater CWSs in town:

> … But of course, I am a small coworking. Also, … I must have references. … I look at coworkings that are large companies, such as [company name A], or [company name B]. They have a process, and a much faster team, because they are the first. Then, it is as if you compare a Mercedes or BMW with a Citroën. Mercedes and BMW will first bring out a technology, then Citroën will implement it in another way. Well, it is as if some are Citroën, and the others are Mercedes and BMW. We always go a bit differentiating ourselves. But always the little ones go in front of those who are bigger.

Meanwhile, GAMMA, leveraged existing technological infrastructure and strategic planning to launch new communication channels with ease. Even the digitalization of the competitors for this space posed no challenges.

> We have a web page. and we focus everything through this platform, our co-workers can get their invoices, they can chat with themselves, they can chat with us, they can check the profiles of new co-workers. We send newsletters. I mean, but that worked before the pandemic. So, that has not been the problem for us, or we didn't find any other opportunity to improve anything.

Some activities, if they showed no measurable impact and demanded excessive time (e.g. online education channels) were later dismissed, as the pandemic influence was waning due to widespread vaccination across the country.

4.1.3 Digital reconfiguring capabilities

Companies very quickly transformed the simple tools that provided obvious benefits and flexibility to their daily routines, i.e. informative blogging, intensified digital marketing and online events. Digital reconfiguring of activities that were inherent in the company's pre-pandemic portfolio was much more straightforward, compared to those that required "trial and error" learning in the early steps. DELTA manager narrates development of new engagement channels based on previous installations:

> So, with our coworkers, we tried to, you know, promote all the activities or the events and even just have conversations with members on Slack. And before the pandemic, this was not really happening. Like, we were using it internally, but we were not using it with the community. So, this is something that we did then with the few events that were the online professional blind dates. So, we would basically sign up, and we would set up a person with another person for an online blind date, you know, like for professional reasons, of course, whenever.

Conversely, the implementation of sophisticated software packages required organisational restructuring, including the elimination of certain roles and new teams' for-

mation. This is particularly the case when the impact would indicate a failure, as evidenced by BETA. In the second year, the company manager elucidated the reasons for the failure of the previous year's attempts: the newly developed site was hacked, forcing them to rebuild a system and bring in new collaborators.

Nevertheless, all cases indicated that the process was highly beneficial for professional growth, allowing for more informed strategy development. Some methods were abandoned when circumstances altered, and more efficacious alternatives became available. In the second year, the ALPHA manager provides the following explanation:

> "Talking about the other coworking online. It's a project that stopped completely. We don't do webinars anymore. We don't try to create a community online. We were for people working on this project. We were spending so much time, and when we got the time to do things like training videos and this, we were busy with other stuff. And so, we just stopped doing this project. It's true that we make changes in the coworking itself, in terms of pricing, packs, and all this and seeing the competition, and it reflects in the coworking space in the [occupied] tables. and it had a positive impact. But the rest, it's quite the same."

The second-wave data highlights the successful implementation of digital strategies, yielding tangible benefits. Increased competition drove higher investments in technology, with funds allocated to adoption, maintenance, and high-performance tool development. Effective tools were prioritized over early but ineffective methods. In small CWSs, as leads and tasks grew, time spent on research became burdensome with lower returns. When digitalization didn't meet expectations, managers considered factors like cost, applicability, speed, and learning challenges. Competition spurred enhancements in virtual office designs and new procedures, such as e-invoicing or online agenda scheduling, into the daily routine. The demand from customers for advancements in the CWS was found to be dependent on the type of coworkers and their digital savviness, as well as their business model dependency on virtual activities.

4.2 Impact of managerial capabilities on the success of digital transformation efforts

The data indicates that the perceived severity of the pandemic prompted managers to prioritise survival strategies, such as mitigating financial losses and maintaining client engagement, over immediate digital transformation. Digital technology was not initially prioritised to continue business operations. Rather, it was employed as a secondary and long-term tool to support broader strategies, such as enhancing client engagement and internal communication during periods of social restriction. These strategies subsequently transcended the crisis scenario. Compared to crisis direct impact in customer loss, organisational configurations and individual capabilities exerted a greater influence on managers' perceptions and shaped their strategies for transformation and technology adoption (Table 6).

Table 6 Managerial and digital representations of the participants. *Source*: own elaboration on coworking space manager interviews

CWS	Managerial and digital setup	Representative quotes
ALPHA	Small company Open to transformation but lack of resources Collaborating with similar spaces to adopt new technology and trends	"In terms of 'platforms technology', adding to what we already had it was not like that we changed a business model, or we changed another business line."
BETA	Small company Open to transformation Collaborating with third parties and self-training for digital strategy development	"I am on the outskirts of Barcelona and… to me people that some person has passed by is worthy… to me for that only place that they find me is online."
GAMMA	Medium sized company A group of executives controlling transformation process Digitally mature	"We have all our system is digitalized since the beginning. So, for us…. the pandemic… not represent an opportunity to add new features or whatever."
DELTA	Large company A group of executives controlling transformation process Digitally mature but open to transformation in next level	"With our co-workers we tried to promote all the activities or the events and even just conversation with members on slack." "In our company we are not in the same building. Good communication between us is like the key thing in order to have the same processes in all the buildings to provide the same experiences the clients."

The imperative to address the severe decline in customer base and liquidity issues was a key driver of these decisions, as evidenced by the managers' increased marketing activities through social media and owned media. The managers' pre-existing expertise and educational backgrounds played a crucial role: BETA's manager, with a master's degree in digital strategy, skilfully employed her expertise to develop a comprehensive digital media strategy, while ALPHA's MBA-holding manager focused on business model innovations to navigate the crisis. Furthermore, she utilised her social capital and financial resources to align with the requirements for responding to evolving market conditions.

The resources available to a CWS were of significant consequence in determining the extent of digital transformation. Larger entities like DELTA leveraged their financial and managerial resources to deploy sophisticated digital tools and strategies that included costly customer relationship management (CRM) and knowledge management systems such as Holded, Salesforce, and Notion. These required the input of specialised talent and internal training. GAMMA benefited from its preexisting infrastructure that enabled it to withstand the initial crisis impact. In contrast, smaller entities like ALPHA and BETA relied on external collaborators and gov-

ernment incentives for technologies, thereby underscoring the disparity in resource availability and its impact on digital adoption. Notwithstanding the differences, both small and large CWSs exhibited a comparable sequence of actions, comprising sensing, seizing, and reconfiguring capabilities, in order to ensure their survival during the crisis. This process entailed a transition to virtual and hybrid operational models, with the deployment of cost-effective technologies like social media and teleconferencing tools to ensure the continuity of operations and engagement. The strategic adoption of digital tools by managers in smaller CWSs demonstrates their capacity for innovation and adaptation in the face of limited resources using their dynamic managerial capabilities.

4.3 Digital reluctance

The dataset offered insights into the factors influencing digital reluctance from a managerial perspective (Table 7). The success of digital transformation efforts was closely linked to the managers' openness to digitalisation and their ability to prioritise it during the pandemic. Managers who identified digital tools as essential for business continuity were more likely to adopt and implement them effectively, irrespective of the challenges faced or the initial technological infrastructure in place. This proactive stance was driven by the necessity to maintain operational continuity and engage with clients during the period of lockdowns, thereby reinforcing the communitarian ethos of the organisational spaces in question.

However, some managers remained sceptical about the value of digital tools, citing a lack of immediate benefits or doubts about addressing core challenges. This distrust stemmed from a lack of perceived immediate benefits or a belief that digitalization would not address the core challenges faced by their CWS. Such perspec-

Table 7 Enablers and barriers of digital reluctance. *Source*: own elaboration on coworking space manager interviews

CWS	Enablers of digital reluctance	Barriers to digital reluctance
ALPHA	Initial focus on immediate financial relief, avoiding costly digital tools due to limited resources.	Identifying and understanding government incentives for funding substantial technology investment
BETA	Scepticism about digital tools' ability to address core challenges.	Increased awareness against cybersecurity threat Participating in digital upskilling programs
GAMMA	Absence of a compelling competitive advantage. intrinsic confidence in digital maturity.	Benchmarking against similar company practices.
DELTA	Challenging to manage employee learning effectively. Reluctance to maintain digital initiatives that did not yield immediate results.	Cross-departmental collaboration and orientation to encourage digital skill development. Long-term commitment to reconfiguration capabilities.

tives exerted a considerable influence on the prioritisation of digital transformation, leading to the cessation of digital initiatives that failed to deliver tangible outcomes or satisfy customer expectations.

Furthermore, following the second wave, the findings diverge from a certain pattern that is contingent on the size and financial capabilities of the entities in question. During this period, other strategic tools were adopted, which were widely perceived as being expensive, complex and having long-term effectiveness. These included CRM and knowledge management systems that facilitate the organisational and customer management (e.g., HubSpot, Salesforce and Notion). In addition to their high cost, these software packages required the recruitment of a skilled workforce and internal training, making them more accessible to larger companies.

The complexity of executive bodies in the spaces, coupled with the need to manage a greater number of employees, necessitates superior discipline to overcome initial reluctance and foster deeper reconfiguration capabilities. In organisations where decision-making is a collaborative process involving multiple managers, concerns related to digital transformation are subjected to a laborious evaluation process. Conversely, in organisations where decision-making is concentrated in a single managerial figure, there is frequently a greater propensity to explore a range of potential options.

5 Discussion and conclusion

This research focuses on managers' ability to identify and understand the threats and opportunities of a crisis, and how they translate these perceptions into action. From a micro-level perspective, we assess managerial perceptions in areas of digital adoption success and reluctance by process, barriers and enablers.

Managers' ability to recognise and act on these factors is crucial for organisational resilience and survival, especially in SMEs, which are often more vulnerable than larger firms during crises (Bharadwaj et al. 2013; Soluk and Kammerlander 2021). Incorporating digital capabilities into crisis management strategies can increase organisational resilience and enable more agile responses to unforeseen challenges (Lien and Timmermans 2023). The role of managerial perceptions and the capacity for strategic and operational flexibility are essential for navigating the complexities of crises (Smith and Sipika 1993).

5.1 Interpretation of findings

Crisis recovery decisions were based on cost, applicability, implementation speed and the challenges of learning and adapting. Many processes required adopting new technologies, which in turn renewed the organisation's skills and informed management decisions. Some crisis response solutions proved lucrative, leading managers to integrate them into routine operations. Technologies that supported business continuity and had a positive impact on financial performance were retained in the company's knowledge base after the crisis. Conversely, digital strategies that were abandoned during the crisis were internalised and can be easily reactivated as organ-

isational capabilities in the event of future crises (Leso et al. 2023; Lien and Timmermans 2023; Crespo et al. 2023). This cyclical process highlights the importance of a flexible and adaptive approach to digital transformation and crisis management (Habermas 1975; Giones et al. 2020).

Based on our findings and existing literature, we identified three dynamic factors that capture how CWSs adapted to the state of uncertainty and overcame adversities. Our analysis is rooted in the DC view, as we aim to uncover the relevant capabilities to achieve business continuity. Warner and Wäger (2019), in their seminal work, highlight how companies need new digital sensing, digital seizing and digital transforming capabilities to compete in a digital economy. The trajectory of the selected cases of CWS in the context of a pandemic crisis confirmed the theory, with variations in behaviour. Our data included four main elements for digital seizing capabilities, categorised by source, namely collaborative innovation, knowledge agility, digital orientation and managerial commitment. Under digital seizing capabilities, we highlight digital adoption process management, organisational change management and digital business alignment in a tiered classification. For digital reconfiguring capabilities, we envision a futuristic perspective that competes with digital business transformation and subsequent expansion to the digital ecosystem.

5.2 Key contributions to research

By identifying the key factors that influence the success of digital transformation in organisations, our research contributes to the theoretical understanding of crisis management and technological adoption. The accelerated digital transformation of firms was found to result in enhanced recovery and adaptation during crises. This finding is consistent with the existing literature on digital transformation as a facilitator of new market opportunities and efficiency improvements (Verhoef et al. 2021; Brem et al. 2024; Seetharaman 2020). Furthermore, the study highlighted that challenges such as digital reluctance, financial constraints, and limited digital literacy hindered effective digital adoption, which in turn affected crisis recovery outcomes (Bucy et al. 2016; Heubeck 2023; Rupeika-Apoga et al. 2022).

This study contributes to the theoretical development of dynamic capabilities (Teece 2007; Teece et al. 1997; Eisenhardt and Martin 2000) by examining its microfoundations, enablers, and technology substitutes within the context of the COVID-19 crisis. The effective utilisation of dynamic capabilities was found to foster crisis adaptation, which corroborates the findings of Teece et al. (1997), Teece (2007). Among the key factors influencing the success of digital transformation in SMEs is the ability to rapidly identify and capitalise on digital opportunities. This enables firms to leverage digital tools to effectively manage the impact of crises and drive recovery (Warner and Wäger 2019). In doing so, we extend the theory considering the challenges posed by the pandemic, thereby enhancing our understanding of dynamic capabilities and crisis management. Furthermore, we elucidate digital coping mechanisms that revolve around the pillars of digital sensing, seizing, and reconfiguring (Warner and Wäger 2019) and Teece's (2007) exploration of heuristics.

The pandemic prompted firms to adopt digital tools for remote work and data analysis. In the context of the challenging climate, social collaboration platforms,

customer relationship management systems and new communication channels have become essential for reducing costs and improving decision-making (Akpan et al. 2020; Papadopoulos et al. 2020; Klein and Todesco 2021; Khurana et al. 2022). Our research corroborates existing studies, which have identified a discrepancy between the theoretical concept of digital transformation and its practical application within the selected empirical business context. While some tools, such as webinars, demonstrate immediate benefits, the adoption of advanced technologies, including the Internet of Things (IoT) and big data analytics, remains limited within the context of the CWS environment. This may be attributed to the relatively straightforward nature of their work styles, which may lead to a perception of low return on investment and a reluctance to invest. Moreover, in organisational contexts where managerial commitment to digital technologies is low, digital tools are often perceived as mere temporary solutions to immediate needs, rather than as strategic drivers for long-term growth and competitive advantage.

The research data incorporates the key factors that contribute to the discrepancies in the adoption of such methods. Significant relationships were identified between the nature of the key challenges faced by the CWS during that period and the relevant use of digital tools to address those challenges and build dynamic capabilities (Klein and Todesco 2021; Khurana et al. 2022). Based on the existing literature, it can be anticipated that organisations with a higher level of digital maturity and greater access to market data will be more effective in leveraging dynamic capabilities (Mishrif and Khan 2023; Forliano et al. 2023; Münch and Hartmann 2022). Nevertheless, the findings of the research indicated that the attribute of management is of greater significance than the allocation of resources. The data substantiates the strategic significance of perceived digitalisation as a criterion for determining the extent of further advancement into digital transformation. CWSs typically lack advanced technological infrastructure, exhibiting limited familiarity with Big Data, AI, and cloud technologies. Inherently, their capacity to control complex systems is constrained, particularly given their dearth of human capital with the expertise to regulate and capitalise on emerging technologies.

Therefore, our research contributes to the existing literature by extending the theory in areas where there is a paucity of references, such as dynamic managerial capabilities in fostering digitalisation attempts and digital reluctance. The research findings indicate that firms with strong managerial skills and knowledge demonstrate superior crisis management capabilities, particularly in terms of strategy adaptation and resource management effectiveness. This lends support to the emphasis on human capital and managerial cognition as identified by Adner and Helfat (2003) and Helfat and Peteraf (2015). Nevertheless, managers encountered difficulties in surmounting digital reluctance and financial constraints, which constrained their capacity to effectively harness digital tools during crises. This observation is in accordance with the findings of Fitzgerald (2014), Rodrigues et al. (2021), and Czakon et al. (2023), which emphasise the necessity of overcoming reluctance and managing constraints in order to enhance digital adoption and crisis management.

In alignment with this, digital reluctance is defined as a malfunction of dynamic managerial capabilities in the context of digitalisation management. The lack of managerial cognitive, human and social skills in forecasting the adversity of future

challenges, coupled with a restricted digital technology know-how and inability to assess digital maturity in comparison with stakeholder competitive forces, impairs managers' capacity to accurately assess the crisis needs. This ultimately results in a reluctance to leverage digital technologies. Incorrect evaluations of an organisation's digital maturity may impede enthusiasm for digital adoption initiatives. This managerial capability-based analysis contributes to the micro-level findings of Bouncken et al. (2022) and Mclean and Steyn (2023) regarding the adverse effects of poor financial, technological, and human capital on risk-averse decision-making styles in crisis situations from a digitalisation perspective. This finding also contributes to the study by Puumalainen et al. (2023), which examined the enthusiasm for change during crises in organisations that faced more problems and tended to persevere, rather than pivot.

Conversely, the primary motivators for managers to embrace digitalisation are meeting customer demands, identifying new sources of customer acquisition while maintaining internal communication with employees and maintaining a vibrant community in the face of intense market competition to ensure the continued success of the coworking space (Bucy et al. 2016; Klus and Müller 2021). The size of the company and the number of managers are significant factors in the introduction of advanced technologies such as knowledge management and project management tools, which are used to address more complex issues within the business. Nevertheless, one may posit that a single manager may also epitomise an open-minded disposition, espousing a favourable attitude towards innovations driven by digitalisation, albeit at a subscale level. This is evidenced by the selective adoption of technologies in order to survive probable challenges (Rodrigues et al. 2021).

The study revealed that firms experiencing significant organisational resistance encountered notable difficulties in implementing their digital strategies (Bucy et al. 2016; Kallmuenzer et al. 2024). This underscores the importance of organisational cultures and internal resistance to digital transformation efforts. The issue of owner-manager challenges in small businesses provides a useful illustration of a broader phenomenon. In the context of financial constraints and pervasive risk aversion, such firms encountered significant constraints in their digital transformation initiatives (Bouncken et al. 2022; Miklian and Hoelscher 2022). In those firms, managers who demonstrated a capacity for strategic flexibility and innovation were better positioned to navigate and recover from crises.

The extracted information from our findings has been collated into a model that represents how these factors may affect the company's strategies that include digital technologies (Fig. 5).

5.3 Key managerial contributions

The concept of digital readiness is not a fixed state, but rather a perception shaped by the needs of stakeholders and the ability of a manager to leverage technology and provide visionary leadership. The perception level could be enhanced by implementing an entrepreneurial vision, thereby exerting a more pronounced influence on the company's technological orchestration capabilities and facilitating its expansion within the ecosystem (Klus and Müller 2021; Puumalainen et al. 2023). Conversely,

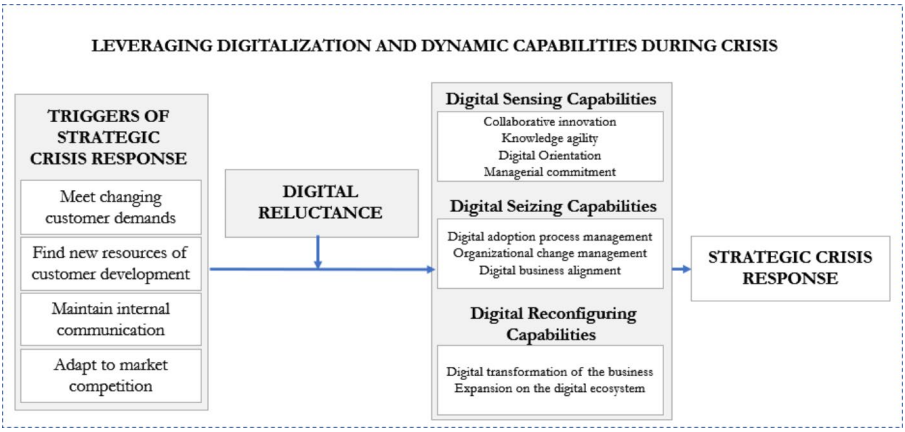

Fig. 5 Proposed research model. *Source*: Own elaboration

low levels of perception may result in the avoidance of implementation, due to an overestimation of digital maturity (Czakon et al. 2023). The findings are of great consequence in the navigation of digital reluctance and the instigation of digital transformation initiatives in situations of crisis.

The results of our study showed that the utilisation of a knowledge agility mechanism, enabled by the adoption of digital tools and the leverage of DMC, not only streamlined the decision-making processes of investment, customers and competitors, but also facilitated the identification of market opportunities through analytical tools. Furthermore, it enabled the sharing, testing and learning of findings across the organisation, thereby enhancing their business operations (Clauss et al. 2022). However, the conversion of findings into action necessitates a decisive digitally oriented management strategy (Khurana et al. 2022; Forliano et al. 2023). It is imperative that companies are prepared to adopt digital technologies, ensuring that they are willing to invest time, energy and resources in acquiring and practising the new digital skills that they identify (Zahoor and Lew 2023; Khurana et al. 2022). Furthermore, organisational commitment to defining internal business needs, such as visibility, lead generation, knowledge management and customer engagement, is essential for their nurturing through digital technologies. This is essential for identifying and allocating new financial and intellectual resources for the adoption and maintenance of technological solutions, which are vital for organisational sustainability. An entrepreneurial mindset will facilitate the exploration of the external environment and the transcendence of organisational boundaries (Hadjielias et al. 2022).

Based on the preceding theoretical framework, we constructed a model for practitioners to enhance their capacity to anticipate strategy formulation for future crisis management (Fig. 6). The matrix delineates areas of concentration for improvement points, thereby guiding companies to decide where to invest, to continue, or to develop new organisational strategies. It has two axes: the first concerns the level of "digitalisation," which is to be determined by comparison to strong actors in the selected business, and the second concerns "dynamic managerial capabilities", which

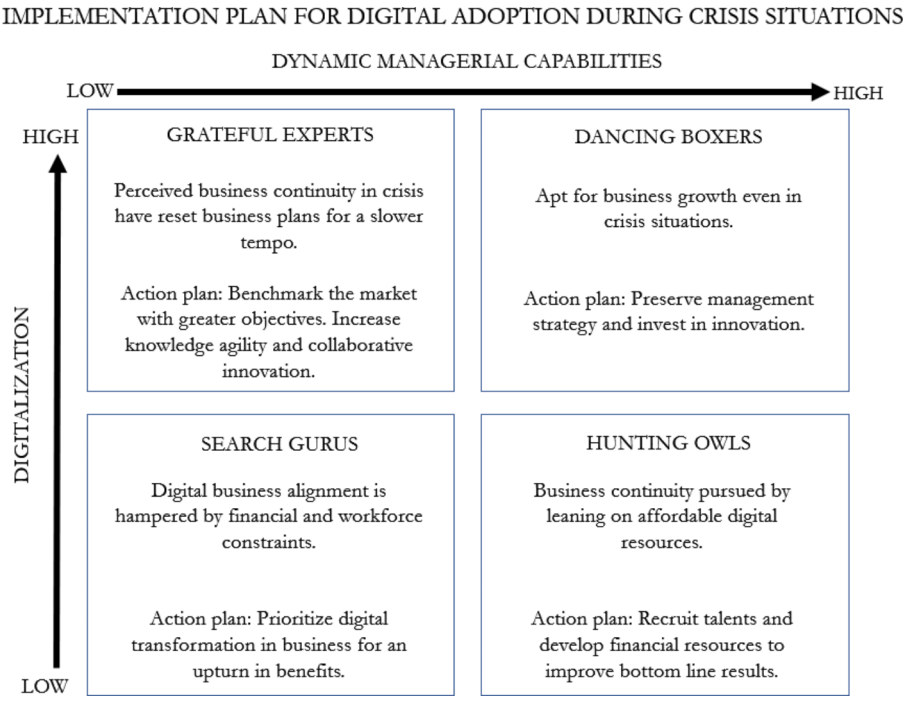

Fig. 6 Strategy plan by leveraging digitally enabled dynamic managerial capabilities during crisis. *Source*: Own elaboration

are to be evaluated in terms of their dominance level in the given factors of the previous analysis. The matrix classifies four areas with defined status and action plan.

SEARCH GURUS: Digitally underdeveloped companies which are looking constantly for digital options with hesitant character to fully implement them to their routines fall into this group. Their limitations stem from financial and human talent constraints, which position them to digitally transform their business for an upturn in benefits. These companies need to prioritize digital transformation by investment into digital savviness of stakeholders, to unlock the potential benefits and improve their business (Alcalde-Heras et al. 2019; Miklian and Hoelscher 2022; Lien and Timmermans 2023; Grazzi et al. 2022).

HUNTING OWLS: Differentiating from other birds, owls have two eyes on the front, an anatomy which leads to a lack of vision compared to other birds. Simultaneously, owls are one scarce type of animals who can have a 360-sight, turning their heads about 270 in each side, as a compensation for the loss. Companies in this group, likely, acknowledge their differences and formulate their own approach based on affordable resources. Their strategy should be directed on developing effective networks, financial capital, and human talent for a significant leap. These cannot be accomplished without successful organisational change management, which requires common tools for internal and external communication, training, recruiting new talent, and revamping the organisational culture by renewing the current technology

stack (Wooten and James 2008; Johnson et al. 2013; Soluk and Kammerlander 2021; Lien and Timmermans 2023).

GRATEFUL EXPERTS: These are experts with a good management acumen while self-limiting their strategy. Benchmarking will help this group of companies to learn from comparatives and set a clearer strategy. Collaborative sources that reach partner organisations, customers, and even governments will provide open platforms to pursue sustainable techniques that transcend into all layers of the organisation. Successful coordination of strategy change, strengthening the role of human resource development and leadership competencies will level the potentials up for leveraging new technology to meet alternative types of customer demand and renovate further plans such as process automation, omnichannel solutions or exploring the environment for new practices (Wooten and James 2008; Bundy et al. 2017; Cortez and Johnston 2020; Smith and Sipika 1993).

DANCING BOXERS: Best practice companies which redefine their business goals as they achieve them fall into this group. For achieving better outcomes, they should maintain their strategy and invest in innovation to drive the introduction of new business lines and efficiency. Hurdles on the road may be cleared by communicating clear expectations for success to all employees, customers and partners. Diagnosing the returns on digital investment by analytic capabilities, ineffective response strategies should be discarded, while seeking new capital to scale effective solutions (Johnson et al. 2013; Cortez and Johnston 2020; Wooten and James 2008; Grazzi et al. 2022).

5.4 Limitations and future research lines

Our research is not exempt from limitations. The limited number of cases included in this study from a single geographical area precludes the possibility of making generalisations. In different contexts, these examples will vary considerably. Data was based on the input of those managers who participated in interviews. This potential for selection bias has been addressed by including data from company blogs where more than one manager provided their views. In either case, the inclusion of additional managers from a more diverse range of companies, representing a broader spectrum of experiences and approaches, would address these limitations.

The objective of this article is to provide insights for practitioners who can relate to either dimension of leveraging digitalisation or dynamic managerial capabilities. However, managers may encounter limitations in transferring the knowledge and findings to their companies because of unmatching sectors or financial schemes. This question also pertains to the ad hoc nature of the strategy model we developed.

Further research should encompass diverse geographical regions and locations where technical capabilities are at varying levels, to address the gaps resulting from these limitations. Potential research questions include the relationship between digital maturity, size, and managerial capabilities, as well as strategies to overcome the barriers to optimal adoptions. Investigating how managers mitigate learning curves during strategy implementation will contribute to the existing literature by indicating new practices to reduce the error rate in technology adoption and transfer.

In our sample, the impact of the global pandemic and the ongoing conflict in Ukraine has placed an additional burden on managers, prompting the development of new coping strategies. From an industrial perspective, our study has identified a critical knowledge gap regarding how traditional industries, such as farming, crafts, manufacturing, and hospitality, respond to crises, including the most pervasive challenge of global warming. While these industries may perceive themselves as moderately vulnerable due to their slower adoption of technology, disruptions in consumer behaviour and supply chains under the impact of ongoing crises still pose a significant threat.

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Availability of data and materials All data and materials as well as software application or custom code support published claims and comply with field standards.

Code availability The datasets generated and analyzed during the current study are not publicly available due the confidentiality agreement between the parties.

Declarations

Conflict of interest The authors have no relevant financial or non-financial interests to disclose.

Consent for publication Appropriate informed consent was obtained from all human participants involved in the study, ensuring that they were adequately informed about the purpose, procedures, potential risks, benefits, and confidentiality measures, and that their voluntary participation was obtained with their full understanding and consent.

Ethics approval The research was conducted in accordance with the ethical guidelines and regulations of the University of Barcelona.

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