Sustainable knowledge management during crisis: Focus on Covid-19 pandemic

Austin M Nyoni
Sharda University, Greater Noida, India

Sanjay Kaushal
Sharda University, Greater Noida, India

Abstract
This paper consolidates literature that justifies effective knowledge management as a precursor for mitigating the effects of a crisis, Covid-19 pandemic in particular, through key antecedents of leadership, culture, and information and communication technology (ICT). A thorough review of retrieved literature relevant to the topic was conducted. The study materials were rigorously screened to limit any potential biases regarding their selection. Through the study, the paper concludes that the fight against Covid-19 crisis indeed requires knowledge to, among other things, find a lasting solution, mitigate the impacts, limit misinformation, revert to normalcy, and plan for similar crises in future. Further, the paper concludes that sustainable knowledge management during the Covid-19 crisis largely depends on a decisive leadership style that puts employees at the centre; a culture that embraces knowledge as a core asset, and supportive ICT infrastructure. Furthermore, the study reveals that relevance of ICT in the process of managing knowledge, largely depends on a culture that accepts knowledge as a critical resource. The study establishes some challenges associated with ICT where a way forward for migrating from knowledge capture to knowledge creation and sharing has been re-affirmed. The present paper has led to the development of a model that further explains the relationships between the determinants of leadership, culture and ICT against effective management of a crisis using knowledge as a strategic resource. Further, six propositions have been put forward to provide clarity on the relationships.

Keywords
Knowledge management, knowledge sharing, crisis management, Covid-19, information and communication technology

Introduction
Managing a crisis is a daunting task due to, among other things, its complexity as it comes unexpectedly and catches everyone off guard (Ammirato et al., 2021). According to Wang and Belardo (2005, p. 2), terms like “disaster” and “emergency” are synonymous with crisis. Moe et al. (2007, p. 787) posited that a disaster is “a condition that beats local capacity thereby necessitating a call for joint efforts both at national and international level.” Pearson and Clair (1998, p. 3) explained an organisational crisis as “a low likelihood, high impact occurrence that poses devastating threats to the survival of an organisation and is characterised by ambiguity of cause, effect, and means of resolution, and calls for timely decisions.” Jasko et al. (2012) alluded that despite the low likelihood of crisis occurrences, there is a greater need for organisations, as long as they operate, to be always on alert for a possibility of resolving a certain kind of crisis. Moe et al. (2007, p. 787) classified disasters into two categories, i.e. technological and natural. According to the authors, technological disasters are like “transport accidents,” and “industrial accidents.” On the other hand, natural disasters are categorised into three categories: the first category includes “hydro-meteorological disasters” like “flash floods,” and “hail storms”; the second category refers to “geographical disasters” like “earthquakes”; and the third category refers to “biological disasters” like “epidemics” (Moe et al., 2007, p. 787). According to Ammirato et al. (2021), influenza pandemics fall under the category of biological disasters which occur naturally. According to the authors, the term pandemic originates from the Greek word...
“pandemos” which simply means “common to everyone” (p.2). Ammirato et al. (2021, p. 2) described pandemic as “a spread of a new disease at global level.” Clark (2016) cited in Ammirato et al. (2021, p. 2) captured some notable previous pandemics such as “black death which occurred between 1347 and 1351, Spanish flu which occurred between 1918 and 1919, and then Covid-19,” among others.

Despite the difficulties associated with managing pandemic crises, managers in various organisations still have an obligation to cushion its implications through decision making (Ammirato et al., 2021). However, according to the authors, for the managers to make an informed decision that best fits the crises’ demands, the need for knowledge cannot be overemphasised. Despite this submission, there has been no study, to our knowledge, that has focused on sustaining knowledge management as a strategic resource for managing Covid-19 crisis with a focus on antecedents of leadership, culture, and ICT and then coming up with a framework that demonstrates the relationships.

This paper, therefore, explores relevant literature on the subject area of sustaining knowledge management amidst the Covid-19 crisis with a focus on effective leadership, culture, and ICT. Therefore, the paper is structured as follows: Research methodology, literature review followed by propositions, discussion, study implications, study limitations and conclusion, and references.

Methodology

The present study has adopted the literature review method where relevant secondary data was critically and thoroughly scrutinised and appraised to bring new knowledge that can further explain the variables through a model as posited by Snyder (2019) and Torraco (2005). To widen the scope for acquiring the study materials and limiting biases associated with the identification of the same, the search for relevant literature was guided by the three-phased approach as guided by Rosenbush et al. (2013). At the onset, keywords such as knowledge management, knowledge sharing, crisis management, Covid-19, and determinants were identified based on the topic under study. These keywords were used as input for the computerised search process. To further widen the search process, the term “determinants” was being substituted by other terms like “antecedents” and “factors.” The actual retrieval was preceded by a careful perusal of the abstracts to get an overall picture of the content. This aimed to ensure retrieval of only relevant materials for the topic under investigation.

The search initially targeted credible databases like Scopus and Web of Science to look for relevant published studies. Further, relevant journals like the Journal of knowledge management, international journal of knowledge management, journal of knowledge economy, and journal of information, knowledge management, and VINE journals were manually browsed. This process was further facilitated by the use of the ABDC journal list, followed by a thorough check of the study materials highlighted in the reference list of each retrieved study material. After manual screening by the authors of this paper, the retrieved study materials were subjected to yet another screening process by knowledge management experts. Again, this was to ensure that the present study has used only the relevant study materials. Since the topic under investigation is relatively new and emerging, we felt that the critical literature review would be the most suitable approach, as posited by Snyder (2019).

Literature review

Focus on Covid-19 pandemic as a crisis

Covid-19 was first detected in December, 2019 as an outbreak in a Chinese city, Wuhan (Bratianu, 2020; Tomé et al., 2022). Following its emergency and the subsequent rapid spread and effects at the global level, the World Health Organization declared it a pandemic on 11th March 2020 (Bratianu, 2020). According to Baldwin and Weder di Mauro (2020) cited in Bratianu (2020), the disease is highly communicable, and since its advent, it has razed havoc in all sectors worldwide. Apart from claiming the lives of many people and affecting others in one way or another, the pandemic has also not spared business operations (Wang et al., 2020; Peeri et al., 2020; Bratianu, 2020). Against this background, the pandemic qualifies as a global crisis as it has been characterised by devastating effects to the extent that some researchers equate it with “world war” (Tomé et al., 2022).

To manage the pandemic, many countries have been devising and implementing preventive measures such as masking up, maintaining social distance, washing hands, sanitising, and lockdowns, all aimed at containing the further spread of the pandemic (Bratianu, 2020). According to the author, despite the positive impact of the curfews in curbing further spread of the pandemic, the same has affected businesses’ normal operations, leading to other socio-economic implications that further justify the pandemic’s complexity as a crisis.

Literature has revealed that the pandemic has heavily paralysed normal operations of various businesses. In some cases, businesses have ceased to operate, scaled down their operations, or adopted some new techniques of discharging their operations like working from home, working in shifts, and virtual assemblies (Kniffin et al., 2021; Kaushik and Guleria, 2020; Wang et al., 2020). Some of the sectors heavily affected by the pandemic are “transportation, hospitality, manufacturing and education” (Kaushik and Guleria, 2020, p. 9). Despite having singled out these
sectors, it should be noted here that Covid-19’s effects have not spared any business sector. This has therefore led to the following proposition (P):

**P1:** Impact of Covid-19 crisis has heavily affected normal business operations

**Managing Covid-19 crisis**

Despite the complexity associated with managing a crisis, a pandemic, particularly its implications, can be alleviated through informed decision-making in an organisation (Ammirato et al., 2021, p.1). Mittroff et al. (1987) conceded the complexity associated with any crisis. However, the authors posited that there are still possibilities of managing organisations in the midst of a crisis within that complexity. Pearson and Clair (1998, p.3) define organisational crisis management as “a systematic way whereby organisational members together with external key stakeholders joint efforts in mitigating crises or to effectively manage those that occur.” The authors highlighted the difference between managing an organisation under normal circumstances against managing the same organisation during a crisis which calls for “detecting early signals of potential crisis, make efforts to avert the crisis, and mitigating it in an event that it has occurred.”

Based on the previous crises and their subsequent implications towards various economies, the concept of crisis management has become an area of interest to various research scholars as they seek to find better ways of hedging against, responding to, and recovering from the effects of a crisis (Jasko et al., 2012; Wang and Belardo, 2005). To this effect, literature has it on record that several researchers (e.g., Roberts, 1990; Schwartz, 1987; Shrivastava et al., 1988; Weick, 1988) made an effort to investigate how different organisations manage their operations during crises. Mittroff et al. (1987) posited that managing a crisis involves going through four phases of “detection, crisis, repair, and assessment” as indicated in the model below.

According to Mittroff et al. (1987), the initial stage of detection demands environmental alertness through continuous assessments. At this stage, the author posits that efforts are mainly put on preparation and prevention which are proactive in nature. However, when the initial phase fails due to other uncontrollable factors and a crisis ensues, efforts are put into coping, like what is happening with Covid-19 where people are learning to live with it, which is reactive in nature (Mittroff et al., 1987). Upon subsiding the crisis, the author says that there takes place repair and assessment stages that are reactive in nature where the focus is mostly put on fixing the damages caused by the crisis. Based on the assessments made, some lessons are learnt that can help in preparing for future crises in a proactive manner. Based on this model, it can be established that managing a crisis in an organisational set-up is a continuous process, and any setback in the process can lead to far-fetching consequences.

Nonetheless, alertness for any eventuality is of paramount importance in managing a crisis (Mittroff et al., 1987). Based on how fatal the Covid-19 has so far been as posited by Bratianu (2020), and taking into cognisance how various sectors have so far been affected and how the healthcare systems have so far been overstretched, the degree of preparedness for a potential pandemic like Covid-19 at global level having learnt lessons from previous crises, requires substantiation. In their research findings in the research that was done in China, Peeri et al. (2020) concluded that as a country, China was not prepared enough to contain the pandemic despite previous lessons from similar crises. This has led to the following proposition:

**P2:** The degree of preparedness at global level in anticipating a potential pandemic has negatively affected effective management of Covid-19 crisis

**Managing Covid-19 crisis through knowledge management**

According to Clark (2016) cited in Ammirato et al. (2021), a pandemic is characterised by, among other things, being “fatal, instilling a sense of fear and restless, faster spreading more especially when there is no vaccination to contain it”. In addition to these characteristics, Covid-19 implications have further worsened due to its continuous emergency in different forms, increasing the uncertainty of its lead period (Bratianu, 2020). According to Ammirato et al. (2021), the objective behind managing a disaster is to “ensure reduction of potential losses, ensure timely and suitable interventions to victims of the disaster in an event that the disaster has hit, and achieve timely and effective recovery after the crisis.” These interventions, according to the authors, require decision making.

Research has revealed that what makes organisations differ in how they manage crises is decision-making, which, in most cases, depends upon how knowledge is utilised as a strategic resource (Ammirato et al., 2021). According to the authors, decision-making during a crisis like the Covid-19 pandemic is supposed to be timely and with utmost accuracy so as to limit further spread of the virus. In other words, it simply means that if decisions are not being made during a crisis, or they are being made but not on time and with little or no accuracy, the crises cannot be mitigated, and the implications can be dire. However, the authors further indicate that the quality of a decision made during a pandemic largely depends on how knowledge is managed as a strategic resource. This submission is complemented by Tomé et al. (2022), who posited that Covid-19 crisis is knowledge bound, and its solutions also require the same knowledge.
Various researchers have proved the essence of knowledge as a key resource in today’s business environment which is being termed as a knowledge-based economy (Linderman et al., 2004; Schiuma et al., 2012; Lee and Chua, 2013; Mahdi et al., 2019). Knowledge, which combines such attributes as experiences acquired over a period of time helps solve various challenges facing an organisation by, among other things, bringing in new ideas (Wu and Lee, 2007; Shahzad et al., 2016).

Ammirato et al. (2021, p.3) allude that “knowledge management in pandemics has a higher strategic objective as compared to other disasters, and the ultimate goal is to save life.” According to Seneviratne et al. (2010) cited in Ammirato et al. (2021, p. 2), knowledge management in a pandemic like Covid-19 has the potential of “enhancing the process of disaster management by ensuring availability and accessibility of accurate and reliable disaster risk information as and when required through effective lesson learning.” Overall, Ammirato et al. (2021, p. 2) indicate that in a crisis like Covid-19, knowledge management is of paramount importance during a pandemic as opposed to any other crisis since the ultimate goal is to limit morbidity and mortality rates. Literature has revealed that the Covid-19 crisis has re-affirmed the value of knowledge as a strategic resource as it has enhanced the need for “creation of knowledge to fight against the pandemic, knowledge sharing through appropriate channels, and decision making by stakeholders,” among other things (Ammirato et al., 2021, p. 3). Jennex and Raman (2009, p.75) posited that “the potential of an enterprise to survive during a crisis hinges on its ability to quickly respond to the phenomena which can be possible through knowledge management,” among other things.

Literature has further revealed the significance of knowledge management in managing a crisis among the crisis management stages of “repair, assessment, and detection” (Jennex and Raman, 2009). In complimenting the submission made by the latter author, Bratianu (2020) emphasised the uniqueness of each single crisis compared to those that previously had hit the masses. The author indicates that despite some similarities between similar crises, the distinctive features are inevitable, and knowledge gaps arise through such differences. The author further indicates that in an effort to bridge the gaps, new knowledge is created, which should also be shared and stored in readiness for future crises. Jennex and Raman (2009) posit that new knowledge acquired in managing the present crisis can help make decisions regarding the preparation and prevention of potential future crises. The authors indicate that managing a crisis usually calls for proficiency, experiences, competency, and resources from various stakeholders hence the need for knowledge management to successfully restrain the vice.

In a nutshell, Jennex and Raman (2009) posit that knowledge management is essential in all stages of managing a crisis, as indicated in Figure 1. Before crisis, the authors indicate that there is need for knowledge on how the previous crises which are similar to the present one were managed, during the crisis, there is need for knowledge on how to deal with it bearing in mind the gaps that have arisen, and when the crisis is over, there is need for knowledge on how to recover to normalcy as well as planning for any similar eventualities in future. Having proven through literature that Covid-19 is indeed a crisis and knowledge management is crucial in managing a crisis, the relationship between knowledge management and management of Covid-19 crisis can therefore not be overemphasised. This has led to the following proposition:

P3: Knowledge management is positively related to effective management of Covid-19 crisis

Sustaining knowledge management during crisis: focus on key antecedents of leadership, culture, and ICT

Leadership. Various research scholars (e.g. Yin et al., 2019; Sayyadi, 2019) have proven the essence of leadership towards effective management of knowledge in an organisation. In particular, leadership styles like the transformational style have emerged to significantly enhance knowledge sharing behaviours among employees (Yin et al., 2019). In the same vein, the need for leadership in managing a crisis is inevitable since leaders are entrusted with the responsibility of making decisions as regards the whole process of managing the crises (Adamu et al., 2016; Wooten and James, 2008; Heide and Simonsson, 2011). Burnett (2002) cited in Lee et al. (2020) indicates that leadership is crucial in managing a crisis as it plays the role of disseminating information aimed at mitigating the crisis and recovering from its effects when the crisis comes to an end. Johansen et al. (2012) highlighted that due to the nature of a crisis which is mostly characterised by higher levels of doubts, the need for a continuous flow of information is inevitable, and it is incumbent upon the leadership to ensure that this is being done.

However, according to Kalev (2020) cited in Lee et al. (2020), not every leadership behavior brings about positive impact in managing a crisis but those capable of inducing knowledge sharing practices among employees. To this effect, the author posited that diversity-centered leadership is critical for effective management of knowledge during a crisis as it encourages critical thinking that can positively respond to the status quo. Other researchers (e.g. Carmeli et al., 2010; Nishii and Mayer, 2009; Luu et al., 2019; Nembhard and Edmondson, 2006) also found that based
on the characteristics of employee centeredness, diversity-centered leaders are able to cultivate the best knowledge among the employees since they feel being part of the team. Such leadership styles have the potential to enhance the degree of trust among employees since they are perceived to have the much-needed know-how. According to the author, this trust is positively related to creating new knowledge and disseminating the same.

As it has already been highlighted that knowledge management is critical in all stages of managing a crisis (Jennex and Raman, 2009), it, therefore, follows that managers should always be thinking about how to sustain it in such a way that it continues to serve the purpose as a strategic asset. To this effect, the need for leadership that takes onboard views of employees is inevitable.

Another leadership behaviour, which, according to Adamu et al. (2016) has been proved to have positive impact towards effective management of a crisis is that which encourages active participation. According to the authors, this leadership behaviour is demonstrated by transformational leaders and is characterised by, among others, the ability to activate employees to take part in identifying the problems, analysing them, and coming up with possible solutions (Wooten and James, 2004). From these submissions, it can be established that despite leadership being critical in managing a crisis, not all leadership behaviours are capable of effectively managing a crisis through knowledge management but those that are able to engage. This leads to the following proposition:

**P4:** Employee involvement in decision making is positively related to effective crisis management.

Culture. In an organisational set-up, culture incorporates beliefs or norms which have the potential of either influencing or hindering the creation and sharing of knowledge that can benefit the organisation through, among other things, innovativeness (Janz and Prasarnphanich, 2003; Alavi and Leidner, 2001; Michailova and Minbaeva, 2012; Razmerita et al., 2016). Du Plesis (2007) alludes that organisational knowledge management efforts cannot be successful without a culture that supports its implementation, as there is a lack of ownership and support. To this effect, the author emphasises the need for organisations to build a culture that values knowledge as a critical asset, a culture that is capable of creating new knowledge, sharing it, and utilising it for various innovations that eventually lead to effectiveness. Several other researchers have so far proved the positive linkage between culture and effective management of knowledge in an organisational set-up (e.g. De long and Fahey, 2000; Egan et al., 2004; Mittal and

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**Figure 1.** Crisis management model (Mittroff et al., 1987).
Kumar, 2019; Connelly and Kelloway, 2003; Cabrera et al., 2006)

According to Pauchant and Mitroff (1992) cited in Boin (2008, p.14), “perceptions of senior managers in an enterprise as regards crisis management plays a key role in shaping the cultural beliefs in the organisation about the value and need for crisis management interventions.” Therefore, enterprises where senior managers believe that crisis management is one of the priority areas worthy of pursuing put in place tailor-made plans aimed at managing potential crises (Boin, 2008). This is not the case in enterprises where the senior managers believe that they are exempted from any potential crises; hence, they do not realize the need for planning (D’Aveni and MacMillan, 1990; Dutton and Duncan, 1987; Kiesler and Sproull, 1992). The authors further posited that in an enterprise, readily available crisis management plans and policies are also not enough if there is no culture that supports those ideologies. To this effect, the need for senior managers’ efforts to nurture that culture cannot be overemphasised as posited by Behme and Becker (2021) who highlighted the need for leaders to provide incentives to their employees to enhance culture of knowledge sharing. According to the authors, providing incentives to employees does not only help in enhancing their knowledge sharing behaviour, but also ensures the credibility of the shared knowledge. It has to be emphasised here that only credible knowledge can help make quality decisions suitable for managing a crisis. In their survey, Behme and Becker (2021) established elements of inaccuracies in some knowledge shared which is attributed to culture. To this end, the need for senior managers to nurture a culture capable of sharing credible knowledge during a crisis cannot be overemphasised. This has led to the following proposition:

**P5a:** Senior management’s positive attitude towards crisis management interventions is positively related to building a culture that supports the efforts of managing the crisis

**P5b:** Incentives are positively related to knowledge sharing culture

*Information and Communication Technology.* ICT facilitates the processes associated with effective and efficient knowledge management in an organisational set-up (Wang et al., 2006; Dang et al., 2018). Specifically, ICT is used to link people together, create, disseminate, store and retrieval of knowledge as and when required (Al Alawi et al., 2007; Lee and Lee, 2007; Mehta, 2008; Podrug et al., 2017). ICT encompasses such things as “hardwares, softwares, databases, and platforms that can be used for capturing, storing, and disseminating knowledge with minimum barriers (Casimir et al., 2012; Pérez-López and Alegre, 2012; Podrug et al., 2017; Rathi et al., 2014; Lee and Lee, 2007; Kim and Choi, 2018; Dang et al., 2018)

According to Becker and Behme (2021), looking at how Covid-19 has impacted various enterprises where some employees are working from home, the need for knowledge sharing is of paramount importance during the period of the crisis. The authors further indicate that the implications brought about by the Covid-19 crisis, which, among other things, have led to changes in normal working practices and adoption of new ways of conducting businesses, have also necessitated a paradigm shift from the usual ways of transferring knowledge to digitisation to effectively link together employees who are working from home as a way of limiting physical contact at workplaces. A study by KPMG (2000) cited in Cabrera et al. (2006) further highlights the significance of ICT in managing knowledge; the study’s findings established the key rolethe technological tools and platforms are playing in bringing employees together virtually with the possibility of exchanging information.

It should also be indicated that during the detection stage of crisis management process, there is a need for crisis response systems that can detect any potential disaster and provide early warnings for necessary interventions (Jennex and Raman, 2009). According to the authors, from the same technological systems, we can retrieve stored information regarding how similar crises were solved in the past and that information can now be utilised to make an informed decision regarding mitigation of the present crisis. This again justifies the essence of knowledge management to mitigate a crisis through ICT.

Despite the need for technological infrastructure to capture and store knowledge that can be used to manage a crisis, Becher and Behme (2021, p.2) posit that “technology on its own is not enough to enable effective harvest of the value of knowledge management.” Based on their research findings, it has been established that the future of organisations now depends on their capability to migrate from “knowledge acquisition to knowledge creation and transfer with emphasis on establishing a knowledge sharing culture alongside the need for tools and platforms” (p.2). Davenport and Prusak (1998) cited in Cabrera et al. (2006), posited that ICT inventions for the management of knowledge are mainly customised as knowledge repositories. According to the authors, the repositories allow employees to access various information captured and stored in the database, interact, and share best practices, challenges, and other relevant information. However, many other researchers have also found several challenges associated with the knowledge management systems which limit their effectiveness in terms of knowledge sharing as they mostly depend on motivation of the knowledge holders for quality and content (Cabrera and Cabrera, 2002, 2005).

Having established the need for knowledge repositories as a way of sustaining knowledge during the Covid-19
crisis, the point of emphasis is now being put on ensuring the quality of information as well as ease of accessibility (Howard, 2021). Much as technology has been proven to play a critical role in managing knowledge during the Covid-19 crisis, the need for building a culture that embraces credible knowledge sharing still remains of paramount importance. This has led to the following proposition.

**P6:** ICT is positively related to knowledge sustainability during the Covid-19 crisis

**Discussion**

Covid-19 crisis has indeed posed a significant challenge to various knowledge workers around the globe, as evidenced by the fact that it still has no cure since its inception; it still remains vague regarding the lead time for the crisis while the virus keeps emerging in various forms. However, since the crisis has posed challenges to knowledge workers, its solutions rely on creating and sharing knowledge, as revealed through the reviewed literature. As the lasting solution for the pandemic is yet to be identified and the lead period still remains vague, fears for further curfews, which among other things, lead to the dispersion of employees from their workplaces, cannot be completely allayed. Therefore, as various stakeholders continue to work round the clock to find a lasting solution for the Covid-19 pandemic, there is also a need for continuity of operations in various enterprises. It is, therefore, evident that there is a need for knowledge to fight against the pandemic on the one hand and a need for knowledge to enable enterprises to continue operating in the midst of the pandemic on the other hand.

Based on the focused antecedents of this paper, sustainability of knowledge as a critical resource that can be used to mitigate the Covid-19 pandemic largely depends upon leadership, culture, and ICT infrastructure. Figure 2 below is a model depicting the relationships of the variables in question.

**Key variables**

It should be emphasised that despite the uniqueness of Covid-19 pandemic as compared to previous pandemics, organisations can still learn from previous knowledge on how such pandemics were being managed. This knowledge can either be in the form of tacit, which is acquired through experiences, or explicit, which is accessible through texts, among other sources. This, however, depends on how the organisation values knowledge as an important resource for problem-solving in general, Covid-19 in particular.

From Figure 2 above, it can be established that there is an interrelationship between the variables of leadership, culture, and ICT, and a combination of these leads to sustainable knowledge management, which in the end, helps in mitigating the crisis. Within an organisational set-up, it is incumbent upon the leadership to set the standards for the rest of the employees regarding the essence of knowledge management. When the leaders set that precedence and employees practice it, it becomes their way of doing business. During the Covid-19 pandemic, the culture of acquiring knowledge, storing it, and sharing it is essential for decision-making and day-to-day operations. Further, leadership needs to support a culture of positivity towards the utilisation of ICT as an alternative to the normal working styles.

It should also be emphasised that during the Covid-19 pandemic, leadership has a role to play in imparting a culture that embraces digitisation. This is the case because some deviations from normalcy call for quick migration from normal ways of conducting business and adopt new ways that respond to the status quo. Much as it may be appreciated that ICT has its own bottlenecks, the need to adopt it as an alternative cannot be overemphasised because failure to do so would mean a complete shutdown of operations in various enterprises. This, therefore, calls for the need for enterprises to ensure limiting the challenges associated with digitisation.

![Figure 2. A proposed conceptual model by the authors.](image)
Study implications

The current study avails literature that has been carefully synthesised so that it aids in a thorough understanding of how best knowledge can be sustained as a strategic resource during a crisis like Covid-19. Our view is that various stakeholders will find the contents of this paper valuable for decision making.

The proposed model that has been developed through this study is believed to be of special importance as it provides further clarity on the relationship between the antecedents of leadership, culture and ICT in managing knowledge as a strategic resource for crisis mitigation. The model further adds value to the already existing knowledge regarding the importance of knowledge management in managing a crisis, Covid-19 in particular.

The distinctiveness of this study does not only lie in the comprehensive exposition and analysis of the literature made but also the development of the proposed model that demonstrates the relationships of the variables under consideration.

Study limitations and conclusion

Through the study, which involved a wider review of study materials related to the management of knowledge as a strategic resource towards mitigation of Covid-19 crisis, several revelations have been made. Key among the revelation made is the proof that knowledge management is indeed an essential strategic resource for effective management of the Covid-19 crisis. Therefore, the need to sustain this strategic resource within the Covid-19 crisis period cannot be overemphasised. To this effect, it has been established through the reviewed literature that the sustainability of knowledge management during the Covid-19 crisis largely depends upon an employee-centred style of leadership, a knowledge embracing culture, and relevant information and technology infrastructure. It has further been revealed that the relevance of ICT as an antecedent of managing knowledge hinges on a culture that embraces knowledge as a critical resource. Some limitations of ICT have been discussed where the emphasis has been put on migration from knowledge capture to knowledge creation and sharing as the best option for moving forward.

The reviewed literature has led to the development of a proposed model that aims to understand further the relationships between the key determinants of leadership, culture, ICT, and knowledge management during the Covid-19 crisis. We believe that the proposed model, together with the propositions put forward in this paper, will spark a desire for further in-depth investigations that relevant statistics and quantitative studies can support. Furthermore, future research attempts can also focus on the other determinants that this study has not considered.

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ORCID iD

Sanjay Kaushal https://orcid.org/0000-0001-5938-166X

References

Adamu AA, Mohamad B, Rahman NAA (2016) Antecedents of internal crisis communication and its consequences on employee performance. International Review of Management and Marketing 6(7): 33–41.

Al-Alawi AI, Al-Marzoqui NY, Mohammed YF (2007) Organisational culture and knowledge sharing: critical success factors. Journal of Knowledge Management 11(2): 22–42.

Alavi M, Leidner DE (2001) Knowledge management and knowledge management systems: conceptual foundations and research issues. MIS quarterly 25: 107–136.

Ammirato S, Linzalone R, Felicetti AM (2021) Knowledge management in pandemics. A critical literature review. Knowledge Management Research & Practice 19(4): 415–426.

Baldwin R, Weder di (2020) Mauro B. Mitigating the COVID economic crisis: Act fast and do whatever it takes. London, UK: CEPR. Press.

Behme F, Becker S (2021) The New Knowledge Management*. Available at: https://www2.deloitte.com/content/dam/insights/articles/emea103993_the-new-knowledge-management/DI_The-new-knowledge-management.pdf (accessed on 22 April 2022).

Boin A (2008) Crisis management. Los Angeles, CA: SAGE, Vol. 2.

Bratianu C (2020) A knowledge management approach to complex crises. Management Dynamics in the Knowledge Economy 8(4): 345–356.

Burnett J (2002) Managing Business Crises: From Anticipation to Implementation, Quorum Books, Westport, CT. Clark, R. A., 2016. Business continuity and the pandemic threat - Potentially the biggest survival challenge facing organizations. IT Governance Publishing.

Cabrera A, Cabrera EF (2002) Knowledge-sharing dilemmas. Organisation Studies 23(5): 687–710.

Cabrera EF, Cabrera A (2005) Fostering knowledge sharing through people management practices. The International Journal of Human Resource Management 16(5): 720–735.

Cabrera A, Collins WC, Salgado JF (2006) Determinants of individual engagement in knowledge sharing. The International Journal of Human Resource Management 17(2): 245–264.
Carmeli A, Reiter-Palmon R, Ziv E (2010) Inclusive leadership and employee involvement in creative tasks in the workplace: the mediating role of psychological safety. *Creativity Research Journal* 22(3): 250–260.

Casimir G, Ng YNK, Cheng CLP (2012) Using IT to share knowledge and the TRA. *Journal of Knowledge Management* 16(3): 461–479.

Connely CE, Kelloway EK (2003) Predictors of employees’ perceptions of knowledge sharing cultures. *Leadership and Organization Development Journal* 24(5): 294–301.

Dang CN, Le-Hoai L, Kim SY (2018) Impact of knowledge enabling factors on organisational effectiveness in construction companies. *Journal of Knowledge Management* 22(4): 759–780.

D’Aveni RA, MacMillan IC (1990) Crisis and the content of managerial communications: a study of the focus of attention of top managers in surviving and failing firms. *Administrative Science Quarterly* 35: 634–657.

Davenport TH, Prusak L (1998) *Institutionalizing Business Knowledge*. Harvard Business School Press.

De Long DW, Fahey L (2000) Diagnosing cultural barriers to knowledge management. *Academy of Management Perspectives* 14(4): 113–127.

Du Plessis M (2007) Knowledge management: what makes complex implementations successful? *Journal of Knowledge Management* 11(2): 91–101.

Dutton JE, Duncan RB (1987) The creation of momentum for change through the process of strategic issue diagnosis. *Strategic Management Journal* 8(3): 279–295.

Egan TM, Yang B, Bartlett KR (2004) The effects of organisational learning culture and job satisfaction on motivation to transfer learning and turnover intention. *Human Resource Development Quarterly* 15(3): 279–301.

Heide M, Simonsson C (2011) Putting coworkers in the limelight: new challenges for communication professionals. *International Journal of Strategic Communication* 5(4): 201–220.

Howard M (2021) *Knowledge management challenges and changes during COVID-19*. Available at: https://imanage.com/blog/knowledge-management-challenges-and-changes-during-covid-19/ (Accessed on 22 April 2022).

Janz BD, Prasarnphanich P (2003) Understanding the antecedents of effective knowledge management: the importance of a knowledge-centered culture. *Decision Sciences* 34(2): 351–384.

Jasko O, Popovic N, Prokic S (2012) The importance knowledge management for the improvement of crisis management. *China-USA Business Review* 11(2).

Jennex ME, Raman M (2009) Knowledge management in support of crisis response. *International Journal of Information Systems for Crisis Response and Management* 1(3): 69–83.

Johansen W, Aggerholm HK, Frandsen F (2012) Entering new territory: a study of internal crisis management and crisis communication in organisations. *Public Relations Review* 38(2): 270–279.

Kallev A (2020) Research: US unemployment rising faster for women and people of color, Harvard Business Review, available at: https://hbr.org/2020/04/research-u-s-unemployment-rising-faster-for-women-and-people-of-color (accessed 19 Jul 2022).

Kaushik M, Guleria N (2020) The impact of pandemic COVID-19 in workplace. *European Journal of Business and Management* 12(15): 1–10.

Kiesler S, Sproull L (1982) Managerial response to changing environments: perspectives on problem sensing from social cognition. *Administrative Science Quarterly* 27: 548–570.

Kim DG, Choi SO (2018) Impact of construction IT technology convergence innovation on business performance. *Sustainability* 10(11): 1–16.

Kniffin KM, Narayanan J, Ansel F, et al. (2021) COVID-19 and the workplace: implications, issues, and insights for future research and action. *American Psychologist* 76(1): 63–77.

KPMG (2000) *KPMG Knowledge Management Survey 2000*. Available at http://www.providersedge.com/docs/km_articles/kpmg_km_research_report_2000.pdf (accessed on 19 Jul 2022).

Lee YC, Lee SK (2007) Capabilities, processes, and performance of knowledge management: a structural approach. *Human Factors and Ergonomics in Manufacturing and Service Industries* 17(1): 21–41.

Lee Y, Tao W, Li JYQ, et al. (2020) Enhancing employees’ knowledge sharing through diversity-oriented leadership and strategic internal communication during the COVID-19 outbreak. *Journal of Knowledge Management* 25(6): 1526–1549.

Linderman K, Schroeder RG, Zaheer S, et al. (2004) Integrating quality management practices with knowledge creation processes. *Journal of Operations Management* 22(6): 589–607.

Luu TT, Rowley C, Vo TT (2019) Addressing employee diversity to foster their work engagement. *Journal of Business Research* 95: 303–315.

Mahdi OR, Nassar IA, Almsafer MK (2019) Knowledge management processes and sustainable competitive advantage: an empirical examination in private universities. *Journal of Business Research* 94: 320–334.

Mehta N (2008) Successful knowledge management implementation in global software companies. *Journal of Knowledge Management* 12(2): 42–56.

Michailova S, Minbaeva DB (2012) Organisational values and knowledge sharing in multinational corporations: the danisco case. *International Business Review* 21(1): 59–70.

Mitroff II, Shrivastava P, Udwadia FE (1987) Effective crisis management. *Academy of Management Perspectives* 1(4): 283–292.

Mittal S, Kumar V (2019) Study of knowledge management models and their relevance in organisations.
International Journal of Knowledge Management Studies 10(3): 322–335.

Moe TL, Gehbauer F, Senitz S, et al. (2007) Balanced scorecard for natural disaster management projects. Disaster Prevention and Management: An International Journal 16: 785–806.

Nembhard IM, Edmondson AC (2006) Making it safe: the effects of leader inclusiveness and professional status on psychological safety and improvement efforts in health care teams. Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organisational Psychology and Behavior 27(7): 941–966.

Nishi H, Mayer DM (2009) Do inclusive leaders help to reduce turnover in diverse groups? The moderating role of leader–member exchange in the diversity to turnover relationship. Journal of Applied Psychology 94(6): 1412–1426.

Pauchant T, Mitroff I (1992) Transforming the crisis-prone organization. San Francisco: Jossey-Bass.

Pearson CM, Clair JA (1998) Reframing crisis management. Academy of Management Review 23(1): 59–76.

Peeri NC, Shrestha N, Rahman MS, et al. (2020) The SARS, MERS and novel coronavirus (COVID-19) epidemics, the newest and biggest global health threats: what lessons have we learned? International Journal of Epidemiology 49(3): 717–726.

Pérez-López S, Alegría J (2012) Information technology competency, knowledge processes and firm performance. Industrial Management and Data Systems 112(4): 644–662.

Podrug N, Filipović D, Kovač M (2017) Knowledge sharing and firm innovation capability in Croatian ICT companies. International Journal of Manpower 38(4): 632–644.

Rathi D, Given LM, Forcier E (2014) Interorganisational partnerships and knowledge sharing: the perspective of non-profit organisations (NPOs). Journal of Knowledge Management 18(5): 867–885.

Razmerita L, Kirchner K, Nielsen P (2016) What factors influence knowledge sharing in organisations? A social dilemma perspective of social media communication. Journal of Knowledge Management 20(6): 1225–1246.

Roberts KH (1990) Some characteristics of one type of high reliability organisation. Organisation Science 1(2): 160–176.

Rosenbusch N, Rauch A, Bausch A. 2013. The mediating role of knowledge management impacts organisational performance. Business Information Review 36(1): 30–38.

Sayyadi M (2019) How effective leadership of knowledge management impacts organisational performance. Business Information Review 36(1): 30–38.

Schiuma G, Carlucci D, Lerro A, et al. (2012) Managing knowledge processes for value creation managing knowledge processes for value creation. VINE 42(1): 4–14.

Schwartz HS (1987) On the psychodynamics of organisational disaster: the case of the space shuttle challenger. Columbia Journal of World Business 22(1): 59–67.

Seneviratne K, Amarasinghe D, Haigh R, Pathirage C (2010) Knowledge Management for Disaster Resilience: Identification of Key Success Factors. Salford, United Kingdom: CIB World Congress, 138–150.

Shahzad K, Bajwa SU, Siddiqui AFI, et al. (2016) Integrating knowledge management (KM) strategies and processes to enhance organisational creativity and performance: an empirical investigation. Journal of Modelling in Management 11(1): 154–179.

Shrivastava P, Mitroff II, Miller D, et al. (1988) Understanding industrial crises [1]. Journal of Management Studies 25(4): 285–303.

Snyder H. 2019. Literature review as a research methodology: An overview and guidelines. Journal of business research, 104, pp.333–339.

Solnit R (2020) The Impossible has Already Happened: What Coronavirus Can Teach Us About Hope. The Guardian, 7. Available at: https://www.theguardian.com/world/2020/apr/07/what-coronavirus-can-teach-us-about-hope-rebecca-solnit (accessed on 22 April 2022).

Tome E, Gromova E, Hatch A (2022) Knowledge Management and COVID-19: Technology, People and Processes. Knowledge and Process Management. Available at: https://onlinelibrary.wiley.com/doi/full/10.1002/kpm.1699 (accessed on 22 April 2022).

Torraco R.J. 2005. Writing integrative literature reviews: Guidelines and examples. Human resource development review, 4(3), pp.356–367.

Wang WT, Belardo S (2005) Strategic integration: a knowledge management approach to crisis management. IEEE, pp. 252a–252a. Proceedings of the 38th Annual Hawaii International Conference on System Sciences.

Wang J, Peters HP, Guan J (2006) Factors influencing knowledge productivity in German research groups: lessons for developing countries. Journal of Knowledge Management 10(4): 113–126.

Wang C, Cheng Z, Yue XG, et al. (2020) Risk management of COVID-19 by universities in China. Journal of Risk and Financial Management 13(2): 36.

Wee JCN, Chua AYK (2013) The peculiarities of knowledge management processes in SMEs: the case of Singapore. Journal of Knowledge Management 17(6): 958–972.

Weick KE (1988) Enacted sensemaking in crisis situations [1]. Journal of Management Studies 25(4): 305–317.

Wooten LP, James EH (2004) When firms fail to learn: the perpetuation of discrimination in the workplace. Journal of Management Inquiry 13(1): 23–33.

Wooten LP, James EH (2008) Linking crisis management and leadership competencies: the role of human resource development. Advances in Developing Human Resources 10(3): 352–379.

Wu WW, Lee YT (2007) Selecting knowledge management strategies by using the analytic network process. Expert Systems with Applications 32(3): 841–847.

Yin J, Ma Z, Yu H, et al. (2019) Transformational leadership and employee knowledge sharing: explore the mediating roles of
psychological safety and team efficacy. *Journal of Knowledge Management* 24: 150–171.

**Author biographies**

**Mr Austin Milward Nyoni** is currently a doctoral candidate at the Sharda School of Business Studies, Sharda University, Greater Noida. His research interests include knowledge management and strategic management in public sector organizations.

**Dr Sanjay Kaushal** is currently engaged as an Assistant Professor at the Sharda School of Business Studies, Sharda University, Greater Noida. He earned his PhD from Jawaharlal Nehru University and his broad area of research include general management, leadership, and discourse analysis.