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Adaptive crisis management at the operational level: Responses to COVID-19 in the Australian resources sector

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Abstract
The COVID-19 pandemic in 2020 significantly impacted Australia's resources sector, particularly mining, oil, and gas industries, posing challenges for operational leaders. This study applied Adaptive Crisis Management Theory (ACMT) to understand how these leaders adapted during the crisis. Through interviews with 32 operational leaders, it was found that their roles evolved as crisis demands changed. Initially, they addressed immediate needs, then shifted focus to remote work facilitation and digital transformation, and finally emphasised recovery, trust, and resilience. These adaptations influenced leaders' behaviours, highlighting the importance of flexibility in supporting employee wellbeing and organisational continuity during crises.

Keywords: adaptive leadership; COVID-19; crisis management; mining; oil and gas

Introduction

The outbreak of the COVID-19 pandemic influenced the operational landscape of industries across the globe (Donthu & Gustafsson, 2020; Seetharaman, 2020; Shafi, Liu, & Ren, 2020; Wu et al., 2020). The resultant protracted crisis gave rise to unforeseen problems to the mining, oil, and gas (MOG) sectors (Asare et al., 2022; Djamalus, Utomo, Djaj, & Nasri, 2021; Jowitt, 2020; Miller, 2020). Due to their complexity and reliance on global supply chains, these industries were heavily impacted (Atif, Cawood, & Mhaboob, 2020; Galas et al., 2021; Iyke, 2020, 2020; Olujobi, Olarinde, & Okorie, 2022). Operational leaders, serving as key agents within their organizations, observed significant shifts in their roles and behaviors as the crisis unfolded (Heyden, Wilden, & Wise, 2020; Kim, Lee, Gao, & Johnson, 2021; Rezvani & Hudson, 2021; Stoker, Garretsen, & Soudis, 2019). Traditionally, these leaders served as intermediaries between upper-level leadership and bottom-level leadership (Hayes, 2012; Nealey & Fiedler, 1968; Rezvani & Hudson, 2016, 2021). Their usual area of focus includes operational efficiency, risk management strategies, and workforce management (Bhattacharya & Tamg, 2013; Burgess, 2013; Li, Zhang, Hua, & Wang, 2021; Van Rensburg, Davis, & Venter, 2014). However, the sustained crisis forced them to shift their roles and behaviours to align with the organisation's changing priorities and crisis strategies (Bajaba, Bajaba, Algarni, Basahal, & Basahel, 2021; Mathende & Karim, 2022; Ologun & Ilaboya, 2022; Terblanche, 2022).

The prolonged COVID-19 crisis has highlighted the critical importance of effective leadership in crisis management (Caringgal-go, Teng-Calleja, Franco, & Manaois, 2021; Dirani et al., 2020; Kaul, Shah, & El-Serag, 2020; Wu, Shao, Neman, & Schwarz, 2021). Operational leaders were required to

implement health protocols, ensure operational continuity as well as promote employee wellbeing and resilience during such unprecedented disruptions (Ali & Anwar, 2021; Shukla, Sufi, Joshi, & Sujatha, 2022; Terblanche, 2022). Research shows that the effectiveness of these leaders during the crisis has been closely linked to their ability to foster collaboration, communicate transparently, and empower their teams (Alakiri & Al-abed, 2021; Dandalt, 2021; Heyden et al., 2020; Machado, Bernardes, & Vaz, 2022). This shift not only facilitated better decision-making but has also enhanced organisational resilience and promote employee wellbeing during the crisis (Kaul et al., 2020; Machado et al., 2022; Mackay, Gilbert, Fournier, Dextras-Gauthier, & Boucher, 2022; Reddy & Gupta, 2020).

Dasborough and Scandura (2022) highlight changes to both management by delegation and micromanagement with attention to balance control and empathy during the sustained COVID-19 pandemic. This perspective was echoed by other researchers who noted that the shift to remote work led leaders to exercise less control and delegate more (Stoker, Garretsen, & Lammers, 2022). They also found that emotional intelligence became crucial for leaders to handle their evolving roles, including self-perception, self-expression, interpersonal relationships, decision-making, and stress management (Wittmer & Hopkins, 2022).

Despite the growing body of literature on crisis management and leadership during the protracted COVID-19 pandemic (Haslam, Steffens, Reicher, & Bentley, 2021; Kaul et al., 2020; Wodak, 2021; Wu et al., 2021), the roles and behaviours changes in operational leadership in the MOG industries have not been well-identified. Most of the studies conducted during the sustained COVID-19 crisis focused on the healthcare or general organisational contexts (Blaszczyk, Popovic, Zajdel, & Zajdel, 2023; Dandalt, 2021; Kekec, Bilim, & Ghiloufi, 2022; Li et al., 2021). As a result, there is a need for sector-specific insights to shape best practices in crisis management for critical industries such as MOG sectors. In addition, there is a paucity of research that examines this emerging topic in a way that considers COVID-19 crisis four stages (the pre-COVID-19 period, the initial outbreak, the peak of the pandemic and the recovery phase) as shown in Table 1. The articles of Wittmer and Hopkins (2022), Dasborough and Scandura (2022), Eichenauer, Ryan and Alanis (2022), and Stoker et al. (2022) highlighted the adaptive roles of leaders during the pandemic. However, these studies were conducted during the initial stages of the pandemic and therefore, their findings cannot be generalised.

The COVID-19 pandemic affected countries differently, with restrictions varying across and within nations. For instance, Western Australia imposed hard border closures, while Victoria and New South Wales opted for softer measures. As a result, timelines vary across studies. The timelines shown in Table 1 were based on data from the Australian Government Department of Health. We acknowledged differences arise due to factors like national policies, socio-economic conditions and geographic location.

While the prolonged COVID-19 crisis might be over, the next crisis is just around the corner due to a number of global risks. Pfefferbaum and North (2020) revealed the long-term mental health impacts of COVID-19 crisis, which they argued could make organisations more vulnerable to future crises. In addition, historical patterns indicate that pandemics are recurrent, with experts predicting emergence of new infectious diseases (Morens & Fauci, 2020; Olshaker & Osterholm, 2017). Furthermore, the economic instability, geopolitical tensions, and climate change posed significant threats to worldwide industries (O'Brien & Leichenko, 2007; Schellnhuber, 2010). Cybersecurity risks and technological disruptions further amplify the potential for future crises (Bostrom, 2014). Therefore, MOG companies must remain vigilant and prepared because the next crisis is not a question of 'if', but 'when' (Pearson & Mitroff, 2019).

Considering the potential of the future crises and existing knowledge gap, understanding the operational leadership dynamics and adaptive roles and behaviours is vital for businesses continuity and resilience as well as employee wellbeing. Furthermore, the findings will enhance ACMT by examining how operational leadership in the Australian MOG industries rapidly adapted their roles and behaviours when the prolonged COVID-19 crisis progressed throughout four stages.

Table 1. Aligning the stages of COVID-19 with crisis phases

COVID-19 stage	Timeline (Australia)	Crisis management phase	Description	Key references
Pre-COVID-19	Before January 2020	Pre-crisis preparation/signal detection (Coombs, 2007); incubation period (Turner, 1976); Fink (1986)'s *prodromal stage;*	In the case of Australia, this period also encompasses a time prior to when COVID-19 was regarded as a probable risk. The first alarms rang in December 2019, but the main steps were taken only in January 2020.	Duckett and Stobart (2020), Pauchant and Mitroff (1992), Zhong et al. (2020).
Initial outbreak	January 2020–March 2020	Crisis recognition and response (Coombs, 2007); onset of crisis (Turner, 1976); Boin, Hart, Stern and Sundelius (2005).	Australia's first COVID-19 case was confirmed in Victoria on January 25, 2020. The first travel restrictions were implemented in February, followed by the lockdowns and restrictions in March 2020. The national emergency was declared on March 18, 2020.	Duckett and Mackey (2020), Kandel, Chungong, Omaar and Xing (2020), Sjödin, Wilder-Smith, Osman, Farooq and Rocklov (2020).
Peak of the pandemic	March 2020–Late 2020	Crisis escalation/chronic phase (Coombs, 2007), crisis escalation (Turner, 1976); Fink (1986)'s *acute crisis phase;* Kapucu (2008); Weick (1995); Mitroff and Pearson (1993).	Australia experienced multiple peaks. To combat the virus, the rules on social distancing were put into practice. It reached its highest levels in July and August 2020, in Victoria, but was largely prevented from spreading further by September 2020.	Blakely et al. (2021), Ranney, Grifeeth and Jha (2020), Nicola et al. (2020).
Recovery	Late 2020–Mid-2021 (Ongoing)	Post-crisis recovery (Coombs, 2007); crisis resolution (Turner, 1976); Quarantelli (1997); Fink (1986)'s *crisis resolution phase.*	Australia started its recovery process from the end of lockdowns in the third quarter of the year 2020 while the vaccination process commenced in February 2021. Recovery has been slow, with occasional lockdowns and limited travel until all citizens received the vaccines. By the second half of 2021, Australia began to reopen international borders.	Australian Government Department of Health (2021), Hale et al. (2021), Fornan et al. (2021), Hone et al. (2021).

Along with enriching ACMT, our study also extends Dasborough and Scandura's (2022) research by highlighting swift role changes and adaptations made by operational leaders during the prolonged pandemic period. Furthermore, it builds on the work of Wittmer and Hopkins (2022) which offered empirical evidence and realistic examples the influence of emotional intelligence on remote leadership. In addition, we expand on the research of Stoker et al. (2022) by highlighting the broader range of responsibilities shouldered by operational leaders in response to the crisis, particularly in the context of working from home. Moreover, in contrast to Eichenauer et al. (2022), we explore not only employee perceptions of supervisor leadership practices and gender differences but also the distinct challenges that operational leaders encounter during the different COVID-19 stages.

Literature review

Operational leaders' responsibilities during COVID-19

Crisis management literature emphasises the value of being flexible and continuously learning during the time of crisis (Bundy, Pfarret, Short, & Coombs, 2017; James, Wooten, & Dushek, 2011). The ability to adapt to changing conditions is highlighted as a key characteristic of resilient high-reliability organisations by Weick and Sutchliffe (2015). Boin and Mcconnel (2007) argue for the necessity of an ACMT approach, enabling organisations to learn and adapt during times of crisis. Mitroff (2004) stresses the critical role of leadership and the need for a proactive and adaptive mindset.

Operational leadership undoubtedly influences organisations in crisis situations through resiliency building, protection of organisation (business continuity), and employee wellbeing (Demiroz & Kapucu, 2012; Sadiq, Kapucu, & Hu, 2020; Stern, 2013; Zhuravsky, 2015). For instance, research that was conducted by Haddon, Loughlin and Mcnally (2015) and Walker, Earnhardt, Newcomer, Marrio and Tomlinson (2016) crystallised the essentiality of the leadership positions to the success of crisis management during the 2008 financial crisis (Haddon et al., 2015; Walker et al., 2016). Similar studies conducted amidst COVID-19 crisis also underscored the pivotal roles operational leaders played in the navigating the rapidly changing situation and subsequently managing complex intricacies of the crisis (Caringgal-go et al., 2021; Kaul et al., 2020; Kuckertz et al., 2020; Mather, 2020; Spinell & Pellino, 2020). Consequently, it is argued that the leaders' actions and behaviours can either aggravate or alleviate the impacts of crises on both individuals and organisations (Boin, 2003).

The modern theory of management leadership advocates for a reversal of the conventional crisis management hierarchy, with executives stepping back and operational leaders and lower-level leaders assuming forefront roles (Avolio, Luthans, & Walumbwa, 2004; Horner, 1997), highlighting the adaptable and dynamicity of leadership (Bajaba et al., 2021; Heifetz, Grashow & Linksy, 2009). For example, studies by Giousmpasoglou et al. (2021) and Heyden et al. (2020) illustrate how operational leaders were at the forefront of COVID-19 crisis and acted as gents for change, emphasising their roles in promoting innovativeness and resilience within the organisations. They devised novel methods for captivation and motivation of employees, while also demonstrating the capability of being flexible and adaptable to cope with the worst of times.

Adaptability was also observed when operational leaders departed from their usual responsibilities to respond, ensure smooth employee logistics and business continuity as well as promote employee wellbeing during the pandemic period (Bajaba et al., 2021, Blaszczyk et al., 2023; Terblanche, 2022). Another evidence was operational engaged in sense-making to assess the crisis severity (Crayne & Medeiros, 2021; Jong, 2017; Sobral, Carvalho, Łagowska, & Grobman, 2020). They responded by making decisions based on environmental scanning, aiming to guide their organisations through crises (Alkharabsheh, Ahmad, & Kharabsheh, 2014; Haddon et al., 2015; Sadiq et al., 2020).

Numerous studies during the sustained COVID-19 crisis have also demonstrated the perspective of leadership as a dynamic and adaptable process rather than a rigid collection of traits or behaviours (Terblanche, 2022; Garretsen, Stoker, Soudis, & Wendt, 2022; Vinberg & Danielsson, 2021). Operational leaders, making competent decisions, which are reinforced by information processing theory, adapt their internal structures to the COVID-19 crisis as illustrated by Phillips, Roehrich and Kapletia (2023) article.

As such, competent skills such as decision-making, adaptability, problem-solving, effective communication networks, and building strong relationships between leaders and followers were highlighted as crucial in operational leadership during the crises (Chanana, 2021; Forster & Heinzel, 2021; Haddon et al., 2015; Littlefield & Quenette, 2007; Nyenswah, Engineer, & Peter, 2016). Such an adaptation of new responsibilities during the COVID-19 increased workload and brought along a myriad of challenges such as family responsibilities and dynamic interplay of technological, physical, social, and economic influences (Bajaba et al., 2021, Dale Oen et al., 2022; Santra & Alat, 2022).

While the adaptability of leaders' roles and behaviours has been explored in the literature, there is a lack of research in the MOG sectors. Therefore, conducting this study is crucial to bridge the knowledge gap and enhance ACMT with real-world data. Through the application of ACMT, we explore how operational leaders in the Australian resources sector swiftly adjusted and effectively reacted to the pandemic by changing their roles and behaviours as the crisis moved from one stage to another (pre-COVID-19, initial stage, peak of the pandemic, and recovery stage).

Adaptive Crisis Management Theory

ACMT is a contemporary theory that emphasises flexibility, strategic adaptability, and responsiveness during times of crisis (Uy et al., 2023). Its draws on principles of complexity theory, system thinking, and adaptive leadership to better understand 'the dynamics of leadership in times of crisis' (Uy et al., 2023). The theory recognises that crises are characterised by uncertainty, complexity, and ambiguity, requiring adaptive responses that transcend pre-determined plans or strategies (Comfort, 2007, Weick and Sutcliffe, 2015). The proponents of ACMT critique traditional crisis management approaches for being static and hierarchical, and not suitable for modern complex crises (Mitroff, 2004; Pearson & Clair, 1998; Uy et al., 2023).

The ACMT is useful during adaptive and extreme events (Hannah, Uhl-bien, Avolio, & Cavarretta, 2009; Heifetz & Linksy, 2011). Adaptive events bring forth new challenges that cannot be addressed using existing knowledge, in contrast to technical challenges (Northouse, 2021). Extreme contexts impose overwhelming threats on organisational resources, both mentally and physically (Hannah et al., 2009; Santra & Alat, 2022). The significant impacts of COVID-19 crisis on Australian MOG industries were both adaptive and extreme (Asare, Robinson, Powell, & Kwasnicka, 2023; Basseal et al., 2023; Jowitt, 2020). The pandemic caused major disruptions to operating models of almost all the companies that engaged in these industries (Asare et al., 2021; Galas et al., 2021; Sattarvand, 2021).

The concept of ACMT underscores the important of gathering information and analysing – sense-making (Hale, Dulek, & Hale, 2005), rapid decision-making (Boin, 2003), adjusting of strategies and actions as situation evolved (Eriksson & Mcconnell, 2011; Somers, 2009), continue learning and adaptation (Teece, Pisano, & Shuen, 1997), and effective communication and collaboration with stakeholders (Ulmer, Sellnow, & Seeger, 2010). Such principles are key for understanding the adaptive strategies of leaders during the prolong COVID-19 crisis in Australian resources industry (Bajaba et al., 2021; Terblanche, 2022).

The COVID-19 crisis demanded rapid change in operational leaders' roles and behaviours rather than relying solely on technical solutions (Wu et al., 2021). However, little evidence exists on how operational leaders in MOG industries rapidly adapt their roles and behaviours to cope with multiple unprecedent challenges presented by the sustained COVID-19 crisis. Therefore, this study seeks to understand the shifts in roles and behaviours of operational leaders as the pandemic progressed from pre-COVID-19 stage to recovery stage. Understanding these changes will provide insight into the operational leaders' flexibility, strategic adaptability, and responsiveness which are key components of ACMT (Uy et al., 2023).

Method

Research design

This research adopted phenomenology, a philosophical method that focuses on investigating subjective experiences and revealing hidden meanings (Giorgi, 2009). This phenomenology was appropriate as it provides a methodological lens through which to understand participants' lived experiences, perceptions, and meanings related to the roles and behaviours of operational leadership in the Australian resources industry during the COVID-19 crisis (NeuBauer, Witkop, & Varpio, 2019).

Table 2. Sociodemographic characteristics of participants (*N* = 32)

Characteristic	*n*	%
Sex		
Male	26	81
Female	6	29
Position		
Manager	24	75
General manager	8	25
Australian States		
Western Australia	22	69
New South Wales	3	9
South Australia	3	9
Victoria	1	3
Queensland	3	9
Northern Territory	0	0
Tasmania	0	0
Industry		
Mining	27	84
Oil and gas	5	15

Sample

The participants for this study were identified using purposeful sampling (Fusch & Ness, 2015). The technique helps to select participants so that there would be diversity based on experiences and perceptions concerning operations during COVID-19 (Palinkas et al., 2015). The inclusion criteria and exclusion criteria were created to ensure a relevant and representative sample for the study (Campbell et al., 2020). Participants needed to have an operational role during the COVID-19 pandemic, which could include being general managers and managers. The participants who were purposely identified received invitations through word of mouth and private messages on social media.

The sample size for this research was determined using the principle of data saturation, whereby the data collection continues until no new themes or insights emerge from the interviews (Fusch & Ness, 2015). We sampled 32 operational leaders across different MOG companies that operate in Australia as shown in Table 2. The demographic distribution of participants shown in Table 2 illustrated that 26 of 32 interviewed participants were male. The Western Australia minerals industry was unsurprisingly heavily represented among the participants as this state has the highest number of the mining-related activities.

Data collection

Data was collected through qualitative methods, namely in-depth semi-structured interviews. We used semi-structured interviews because they offer flexibility while ensuring that key topics and questions related to the roles and behaviours of operational leaders were covered (Blee & Taylor, 2002). The interviews were conducted using video conferencing tools on virtual platforms, adhering to COVID-19 restrictions. Given that many resource sector operations were situated in remote areas, necessitating costly travel and accommodation, this approach helped mitigate expenses.

With the participants' consent, interviews were audio-recorded, each spanning approximately 45 to 60 minutes in duration. The interview guide includes questions about the role responsibilities and behaviours of operational leaders at different stages of the pandemic. Participants were asked about

their roles before the pandemic, at the initial stages of the pandemic, further into the pandemic, and emerging out of the pandemic. They were also asked to describe the impacts of changing job demands on their behaviours. The collection of data started on June 2023 and finished in August 2023.

Data analysis

The data were analysed using six steps of thematic analysis (Braun & Clarke, 2006). The 32 audio recordings were transcribed verbatim into word document format by leading author and transcripts imported into qualitative data analysis software (NVivo 12 Plus) for coding and analysis. Following this analytical approach, the first step was familiarisation with the data. We began by immersing ourselves in the data through reading the transcript several times and noting down our thoughts and ideas. This was followed by generating initial codes through sorting out statements that captured phrases, words, and sentences-related wellbeing challenges and coping mechanisms (Braun & Clarke, 2006). Several codes were generated and reviewed multiple times before we began organising them into potential themes.

Next, we reviewed the generated themes from the codes repeatedly to ensure accurate data representation (Kiger & Varpio, 2020). Following this, we consolidated several themes to form several central themes, with each core theme given a definition that captures their fundamental meaning. The findings were validated, and interpretations were ensured through member checking. Finally, the results were presented in a narrative format, supported by direct quotes from participants to illustrate key themes, as shown in the 'Results' section.

Trustworthiness

The steps in Table 3 were taken to increase the trustworthiness and reliability of the study.

Table 3. Criteria for trustworthiness and rigour

Criteria	Definition	Steps taken in this study
Criteria for trustworthiness and rigour (Nowell, Norris, White & Moules, 2017)		
Credibility	The confidence in accuracy, trustworthiness, and reflecting participants' true meanings and experiences	• *Prolong engagement*: The leading author spends sufficient time with operational leaders to understand the COVID-19 challenges and build trust. • *Peer debriefing*: The leading authors discuss the interview progress and preliminary findings with the co-authors.
Transferability	Relates to the ability to apply study findings to different contexts, settings, or groups.	• *Thick description*: We provide numerous quotes in the finding sections, which will help reader understand how we arrive to conclusions. We explain how the pandemic has impacted the roles and behaviours of leaders. • *Detailed methodology*: We offer a thorough research design to facilitate understanding of the context and conditions in which the findings were obtained.
Dependability	Refers to the reliability and consistency of the research process and outcomes over an extended period.	• *Code-recode*: The leading author analysed the transcripts, took a break, and then re-examined them to guarantee coding and themes stayed the same. • *Peer*-review: Other researchers continuously peer-reviewed the findings of the first author.
Confirmability	Relates to the ability of other researchers to confirm or support the study's outcomes.	• *Audit Trai*: The leading author kept a comprehensive record of interviews, coding decisions, and analytical memos. • *Member checking*: The leading author engages with colleagues during the analysis and interpretation, who constantly provide feedback on the confirmability of the results.

Results

The findings highlight the adaptive role played by operational leaders during the protracted COVID-19 crisis. They were able to respond quickly and effectively to changing circumstances, safeguarding employee wellbeing, and maintaining business operations. The findings also point to how leaders changed their roles and behaviours as the crisis moved from one stage to another. Our analysis generated five core themes as shown in Fig. 1 and Table 4, and number of supporting sub-themes as shown in Tables 5–9.

The central theme of operational leaders' roles and behaviours is supported by number of sub-themes identified in Table 5. Our analysis has demonstrated that these leaders before COVID-19 outbreak had well-defined responsibilities such as employee management, operational continuity, and compliance with safety and regulatory policies set by top leaders. These leaders displayed inclusive, empathetic, result-oriented, and directive behaviours.
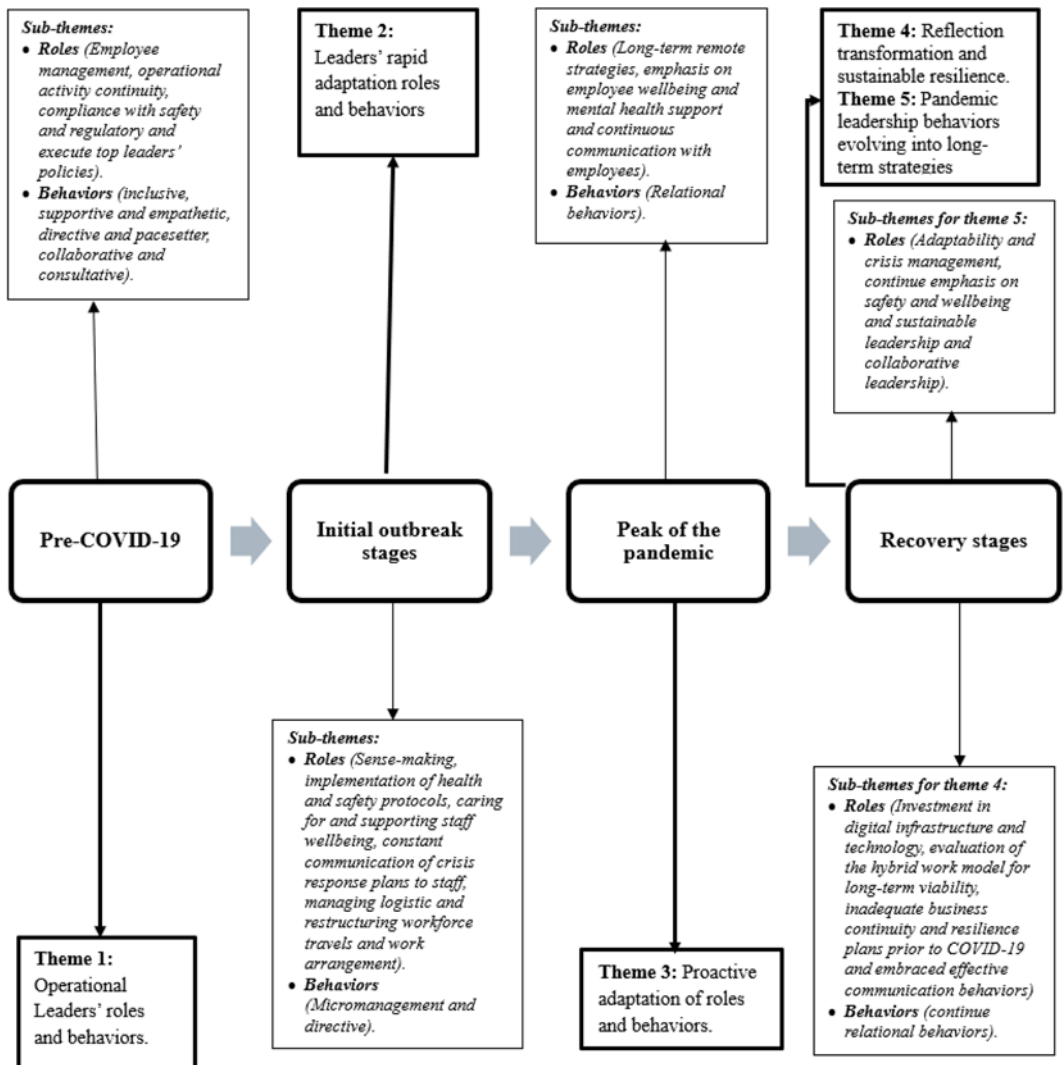

Figure 1. Themes and supporting sub-themes.

Table 4. Additional quotes of adaptive leaders' roles and behaviours during COVID-19 crisis

Themes	Description	Sample quotes
Pre-COVID-19		
Theme 1: Operational leaders' roles and behaviours	Operational leaders had well-defined roles and responsibilities before the outbreak of the COVID-19; people management, management of operational activities and compliance with safety and regulatory. Behaviours were inclusive, empathetic, and result-oriented and directive.	'You're managing everything from the safe arrival of people through to the day-to-day operations' (P11). '…. communicating working with the business to confirmed to them the company vision, the purpose, the values. Trying to make sure we're embodying the values in what we do …' (P28). 'I had a very open and decisive leadership style… I believe that you know, in today's world, you need to be clear and concise and the way you deliver messages and lead people' (P18).
Initial stages of COVID-19		
Theme 2: Leaders' rapid adaptation roles and behaviours	The operational leaders reported that their role responsibilities and behaviours were altered by the outbreak of the pandemic at the initial stages.	'…our top executives in Perth would get the announcements and the guidelines through from the you know from the government and the recommendations and that would be through might be through the Department of Mines… we had to consistently communicate with the work group… a lot more teams' meetings, a lot more communication' (P01). 'I did find that a lot of the management required was literally management. It was compliance, it was structural. It wasn't open for negotiation' (P01).
Peak of COVID-−19		
Themes 3: Proactive adaptation of roles and behaviours	Operational leaders highlighted that as the pandemic progressed further, their roles and behaviours changed again to meet new job demands. The leaders adapted relational behaviours.	.."the overarching wellbeing you know of all employees, and that's the entire time that they are employed, not just when they're at work, but when they're off work …. when they're at home (P11). … 'it becomes hard to measure if employees are doing the work that you want them to do. So, I think that there's a real danger in that and being able to measure work and effort and all those kinds of things becomes important…. I believe that my employees were doing the right thing also at their peer and colleague level. They must have to trust each other as well' (P06).
Recovery (Emerging out of COVID-19)		
Theme 4: Reflection transformation and sustainable resilience	As the operational leaders emerged from the pandemic, they learned that digital infrastructure and hybrid work models are important for the business continuity. Also, the pre-COVID-19 business continuity and resilience plan were inadequate to respond and manage the pandemic. Hence, resulted in further changed to or continue with the relational behaviours	… 'When I was asked to review in February before it really took off in March, would that have helped us? No. Because it was so much bigger…' (P07).
Theme 5: Pandemic leadership behaviours evolving into long-term strategies	This theme demonstrated how the prolonged COVID-19 crisis short-term solutions have evolved into long-lasting strategies that are shaping modern leadership.	'It presented opportunities for different businesses to look at different ways to operate or is he working from home as a different strategy or how to make use of people working remotely' (P02). 'It probably reinforced the checking in on your team so. We are making it, making it clear that that your employees wellbeing is number one. It was before COVID, but maybe this is something that sort of reinforced and sort of ingrained in our thought process now' (P05).

Table 5. Theme 1: operational leaders roles and behaviours pre-COVID-19: supporting sub-themes and quotes

Sub-themes	Description	Sample quotes
Employee management	Operational leaders take care of employees, give leadership, mentoring the team members, and ensuring a safe working environment before COVID-19 virus outbreak.	'My direct reports are the office managers and the contract managers who work at the customer sites, they reporting to me. So, it's working with them to make sure that they're supported' (P28).
Operational activity continuity	Companies rely on operational leaders to handle both the immediate and future operations activities. They cover various areas, including project management, scheduling, budgeting, and planning.	'I was the team lead for the operations team, so we were responsible for just day-to-day operations of the platform. Doing daily rounds… monitoring all the equipment, operational tasks…So we basically own and run the platform' (P30). 'I guess annual budgeting, forecasting, scheduling. And making sure they're compliant with the specifications of the design and overseeing a lot of the quality assurance and quality control' (P26).
Compliance with safety and regulatory and execute top leaders' policies.	Operational leaders make sure that all necessary statutory requirements are followed and met. Additionally, execute and convey the policies approved by the executives.	'That really covered everything, you know, traditional owner engagement, community engagement, all your environmental, you know, all your sort of safety and regulatory and sort of registered…' (P11). 'Obviously just make sure that we compliant to all relevant legislation' (P18).
Inclusive	Operational leaders discuss how they maintain inclusion, cultivate positive relationship and trust-building.	'I always try and build teams that are always like minded and then you get a wider variety of opinions. I think a consultant, rather than a dictator … I rather build a team of experts and then consult those experts on whatever the issue is at the time' (P09). 'I do have a quite an inclusive management style, probably in general' (P14). 'I've always been a leader who spent a lot of time understanding, you know perspective of the organisation from our frontline employees hearing' (P11).
Supportive and empathetic	Operational leaders highlighted that they enjoy interacting and supporting their team members. They concentrate on the development of the entire team and promote effective communication within the organisation.	'I always say people and improvement … When you say people safety is included in it and the culture is included in that. When you say in a continuous improvement then it's cost as an output. Continuous improvement … I think as a leader, and I always investigate people … what can make people happy or unhappy' (P10). 'I'm fairly laid back; I relate quite well with the operational team members. I'm a supportive leader that likes to sort of grow my team and I enjoy communicating with the team members and getting on the same level' (P03).
Directive and pacesetter	Several leaders emphasise the value of setting high standards, leading by example, and being passionate about driving high-performance teams. Furthermore, highlight the value of a direct and open approach to communication.	'I'm very structured and organised…because I work in project management, there's like kind of almost like a drum beat that you march to keep the team on time and on budget and cost and schedule' (P16). 'My leadership style is a very direct style. Believe in honesty and consistency, and there's no surprises' (P23). 'I have been more of a pacesetter type leader as well, so really like setting high standards leading from the front.… Quite like energetic, high paced and like, focused and passionate about driving high performance teams' (P30).

(*Continued*)

Table 5. (*Continued.*)

Sub-themes	Description	Sample quotes
Collaborative and consultative	Participants reported prioritising understanding, respect, direct engagement, and democratic participation during the decision-making process. The theme emphasises how leaders foster team affiliation or bring teams together to achieve a common goal.	'I would say it is collaboration through direct engagement…. I don't have time to talk around circles. It's listened to the issue.. coming up with a solution collaborative and then execute that solution' (P20). 'I have always been a consultative leader.. so try to engage with the team and get them on board before significant changes or key decisions are made and that involved giving them the context behind the change and trying to let them through as part of it and let them also be basically the chain management, the change managers and be able to drive' (P29).

Table 6 demonstrates how the initial stages of COVID-19 impacted operational leaders' roles and behaviours. Operational leaders changed from normalcy responsibilities and adapted reactive measures, leading them to adapt their behaviours to meet new job demands and uncertainties. The core of leaders' rapid adaptation roles and behaviours was identified in the initial stages of the pandemic and is supported by number of sub-themes identified below. The pandemic placed additional responsibilities on operational leaders and which in turn shifted their behaviours.

Table 6. Theme 2: leaders' rapid adaptation roles and behaviours at the initial stages of COVID-19: supporting sub-themes and quotes

Sub-themes	Description	Sample quotes
Sense-making	The focus was on how operational leaders were rapidly learning and adjusting to the situation. Their task involved gathering information from executives and government communications to respond and manage the situation more effectively. Participants noted that the decision-making process was characterised by a greater level of concentration and urgency.	'… also to answer something you get to like people in Perth are learning himself. So, when you are asking the question, you go, oh, that's a good question. I never thought about it. Everything's new to everyone's' (P07). 'A decision needs to be made and those were some of the changes that I had to make and adapt and keep the operation running. I wouldn't say I got it all the time, but I think we made the best out of it…. I think you look back and I think the outcome was great…There were a few mistakes that were made along the way…Making the decision is better than not making one …' (P29).
Implementation of health and safety protocols	The importance of adhering to government legislation and mandates as a critical aspect of navigating the pandemic. It suggests that compliance with official guidelines was a key part of the response.	'We took the approach of doing what the regulator says and no more. Because anything more than what the regulator said was obviously coming at cost. If the regulator said, you know we want 1.5 metres, we went 1.5 metres' (P19). '… all of the things were coming through from the government were all about people keeping people safe and keep people healthy. It was quite easy around the messaging, you know, social distancing. Is it a pain about? Yeah, absolutely. But it's in place for a reason. You know, yes, we all must sit, you know single seats on the plane or, you know, single seats at the airport. You know all these things, but they're all things that have been in place for a reason to keep people safe' (P22).

(Continued)

Table 6. (*Continued.*)

Sub-themes	Description	Sample quotes
Caring for and supporting staff wellbeing	Shift toward to strong employee health and safety as the pandemic situation escalate.	'There's a lot more for a leader in any role. You'll be doing a lot more, sort of that care and well-being support to individuals … large portion of that thought process into the wellbeing of individuals in the team.. probably become more of a focus than what it was previously. We sort of support individuals through all their different complexities' (P02). '… the overarching wellbeing you know of all employees, and that's the entire time that they are employed, not just when they're at work, but when they're off work …. when they're at home' (P11). 'Became a lot more involved with … checking in on people' (P08).
Constant communication of crisis response plans to staff	The level of communication between operational leaders and employees and top leaders was raised. Operational leaders regularly communicated changes and updates, while also conducting daily check-ins to inquire about employees' wellbeing.	'The first one was actually making sure that everyone agreed on a consistent message and information … and really concentrating on how that message, simplify it and make sure everyone's saying the same thing, because otherwise things can get really confusing' (P08). 'A lot of changing of communication because you know the strategy and the response would change. You know virtually, every day.. we had to be.. prepared to receive some of the fallout from that' (P05).
Managing logistic	Logistic management for operational leaders expanded to encompass COVID−19 precautions, including ordering preventative equipment, coordinating tests, tracking results, and managing travel.	.. 'Was a nightmare for logistics because all the changes in COVID−19 we must do so. Where's our mask? Oh, excuse me. It's delivering on site. You want us to wear masks, but there's only 500 here. We need, like, you know, 6000. Oh, sorry. We'll get another one up tonight …' (P07). 'The teams were split into half. They come on different buses, they had different work vehicles, they had different areas to work. They had different crib rooms. They were called the blue and the white team …' (P20).
Restructuring workforce travels and work arrangement	Operational leaders changed the feeding cycle of employees by developing and implementing new roster regiment leading to leaders to lead two distinct workforces.	'We had to change the whole feeding cycle of people. We couldn't have everybody sitting in the wet messes or the dry messes' (P11). … 'the rosters that the people worked also changed. So, the people who were working two weeks-on and one week-off were changed to four weeks-on and two weeks-off. So, they were on site for extended period compared to before COVID−19' (P20).
Micromanagement	The rapidly evolving situation and need for swift decisions as well as emergent of remote working led some of them to monitor and control aspects of their workforce activities	'We did have a check in call every day. That a way of monitoring work …. to make sure that we're ticking off the things that we needed to present and decisions that needed to be made …' (P06).
Directive	COVID-19 rules, policies, and mandates were not open to discussion or debate, leading operational leaders to exhibit heightened directive behaviour.	'… if the government said you must put a nappy on your head and put your shirt in. There's nothing we can do about that. That's what they wanted and that's the message that people got' (P23).

At the peak of crisis stage, operational leaders' work/behaviour shifted from the rapid adaptive measures and behaviours to more strategic planning as shown in Table 7. Our findings illustrated

shifts to development of long-term remote strategies, emphasis on employee wellbeing and mental health support, and continuous communication with employees, and highlighted the relational leadership behaviours exhibited by operational leaders to drive these adaptations. The core themes of proactive adaptation of roles and behaviours were identified further into the pandemic, and it is supported by sub-themes highlighted in Table 7.

As the operational leaders emerged out of the COVID-19 crisis, Table 8 show that they shifted their roles and behaviours again to focus on recovery, trust and building sustainable resilience. They reflect on lessons and opportunities created by the crisis and how they can be translated into long-term

Table 7. Theme 3: operational leaders' proactive adaptation of roles and change in behaviours further into COVID-19: supporting sub-themes and quotes

Sub-themes	Description	Sample quotes
Long-term remote strategies	Many participants reflected how they embraced the development of long-term remote strategies and digital transformation initiatives to adapt to the new realities imposed by the pandemic. This included developing and refining strategies for sustained remote working, recognising that this new arrangement will be the new norm in the future.	'So, we did have some people who needed to work from home rather than on-site so that we did require to have extra catch ups with those people working from home because they were no longer available to be at the site. So, I kind of back to those less interactions with people because they were no longer at site' (P12).
Emphasis on employee well-being and mental health support	Increased emphasis on providing mental health support and fostering a supportive work environment as the pandemic progressed.	'There's a lot more for a leader in any role. You'll be doing a lot more, sort of that care and well-being support to individuals … large portion of that thought process into the wellbeing of individuals in the team.. probably become more of a focus than what it was previously. We sort of support individuals through all their different complexities' (P02). 'Became a lot more involved with … checking in on people' (P08).
Continuous communication with employees	Increased continuous communication with employees as the pandemic progressed, ensuring transparency, and maintaining a sense of connection despite physical distance. Also, adapted collaboration to enhance efficiency and effectiveness in navigating the challenges of remote work and digital transformation	'We did do have a check in call every day. That is a way of monitoring work and developing that to make sure that we're ticking off the things …' (P06). 'A lot of changing of communication because you know the strategy and the response would change. You know virtually, every day.. we had to be … prepared to receive some of the fallout from that' (P05).
Relational behaviours	The operational leadership adapted relational behaviours such as empathy, support, inclusivity, collaboration, consultation, and empowerment.	'… a large portion of that thought process into the wellbeing of individuals in the team, that's probably become more of a focus than what it was previously. We sort of support individuals through all their different. Whether they're not even issues but just their different complexities. And so, you sort of look more into that and not judging someone on their work outputs. Seems to be a lot more focus on the care of individuals and then obviously …' (P02). 'We had a tracker or whatever so that all the supervisors we made sure they called all the people that were off site for whatever reason or working at home or off site because they couldn't be on site and inform them or ask them or tell them or whatever to include in that information' (P06).

Table 8. Theme 4: operational leaders reflection transformation and sustainable resilience emerging out of COVID-19: supporting sub-themes and quotes

Sub-themes	Description	Sample quotes
Investment in digital infrastructure and technology.	The implementation of applications such as Zoom, and Microsoft Teams was observed to increase greatly by operational leaders during and following COVID-19. Essentially, these tools helped create a smooth-running work environment. On the other hand, the pandemic became a door for many companies in introducing automation and innovations.	'I think the big thing was the use of technology, so it showed that for me especially as it's and a lot of non-beliefs as well, it showed that. You don't have to be on site to know what's happening … because there's enough technology there with data, instantaneous data on production and what not, planes rail, you know, port the ships and processing plants and stuff like that to be able to analyze data remotely and then utilising teams' (P23).
Evaluation of the hybrid work model for long-term viability.	One opportunity created by pandemic was the ability to blend remote work and on-site/office work. Non-essential workers were allowed to work away from the office. Participants reported the need to evaluate the benefits of blending working from home and office for long-term sustainability.	'It taught us that we could all work more remotely. You know, like we're doing currently online, that was a big a big plus I think, and it gives people more flexibility in their personal life' (P09).
Inadequate business continuity and resilience plans prior to COVID–19.	Operational leaders learned during COVID-19 that their emergency plans or business continuity plans (BCPs) and resilience plans were inadequate for the scale and magnitude of COVID-19.	'The importance of business continuity planning without question. We had certainly had different forms of BCP's, but I don't think we had ever properly, you know that's something that was going to have…. Impact…. When I was in Canada as an example working there, we used to run simulations. We would have a tuberculosis outbreak in the camp because that was a real and present thing. But in the Pilbara. You really didn't have anything of that sort of nature' (P11).
Embraced effective communication behaviours.	The leaders give great emphasis on transparency and responsive communication between the organisation leadership and employees to achieve recovery goals. They utilise different communication platforms like virtual meetings, town halls and digital portals to make the information easily accessible by every member of a team	'So efficient communications and how to achieve efficient and effective communications. Certainly, it has been a massive lesson' (P19). 'I think the other thing though that we did do well and is important in crisis management is communicating really clearly despite the uncertainty' (P30).
Continue relational behaviours	Leaders continue with relational behaviours (empathetic, supportive and inclusive behaviours).	'I'm back to that Inclusive style … there's a resource shortage. I think everyone's mindful of their leadership. I think companies are trying to develop leaders more than ever because of the importance of hanging on to people and reducing turnover.. as you know, the industry is hot now' (P01).

strategic practices. Operational leaders recognised the significance of investing in digital infrastructure and adapting hybrid work models. Also, they identified the gap in the pre-COVID-19 business continuity and resilience plans and how they can be improved. The theme of reflection transformation and sustainable resilience emerged consistent during the analysis and supported by the sub-theme reported in Table 8.

In addition to the lessons learned and opportunities presented the prolonged COVID-19 crisis, the theme of 'pandemic leadership behaviours evolving into long-term strategies' emerged as prominent during the thematic analysis. Our study revealed that the operational leaders acknowledged adopting

the COVID-19 crisis short-term responses and management strategies into the long-term tactics. This major theme is supported by the sub-themes provided in Table 9.

Discussion

The ACMT emphasises that leaders need to develop an ability to tackle and navigate complex crises without solely relying on predefined technical solutions (Coombs & Laufer, 2018; Pearson & Clair, 1998). Instead, they should implement adaptive strategies that emphasise rapid decision-making, effective communication, and flexible responses to ensure stability and recovery (Bundy et al., 2017; Wotten & James, 2008). In this regard, our research showed that operational leaders promptly changed their roles and behaviours in response to the evolving pandemic, prioritising quick

Table 9. Theme 5. Pandemic leadership behaviours evolving into long-term strategies: supporting sub-themes and quotes

Sub-themes	Description	Sample quotes
Adaptability and crisis Management	Australian mining, oil and gas leaders have developed stronger crisis management and adaptability skills as a direct result of the pandemic	'I would say my leadership style has changed. I guess my reaction to dealing with that kind of last-minute communications have probably changed. I try and be clear and concise on how I approach those and now I make a point of asking for the information as soon as I'm aware something's going on' (P12). 'Post COVID, just the more conscious of how many people you have that live out of state and international to make sure that you balance the teams…Just things like that I suppose would be the one thing be conscious when Once upon a time you didn't think too much about where people lived' (P23). 'What COVID are showing us is we need to be flexible and adjust … you could change your rooster panels, you could change your start times, you could change your ship times and still get the same outcome' (P29). 'We need to be looking to the futurists to be saying what is that next crisis that's going to come? What is that thing that we you know that we're unprepared for now, but that we need to be really, you know, really aware of and we need to actually build that into our BCP's and start to do some simulation. … We saw so much disruption in supply chain, are we building that into our BCP's … future crises' (P11). 'Allow the company to review its operating model and become even leaner because. You know, with the lockdowns and with, you know, you're looking at essential services, a lot of the, the people that weren't classed as an essential service in their role, you realise that you can actually do without that role. So, it's probably, yeah. Allowed the company to operate from a leaner structure than before' (P18).
Continue emphasis on safety and wellbeing	Australian mining, oil, and gas leaders secure long-term focus on safety by integrating wellbeing into their leadership strategies.	'I've always a pretty genuine care for people, so I feel like that is just pretty much amplified…during the COVID phases' (P22). 'It enabled me to be a little bit more empathetic towards people.. particularly people in different circumstances and it's I guess it's also probably really highlighted the importance of just checking' (P26).

(Continued)

Table 9. (*Continued.*)

Sub-themes	Description	Sample quotes
Sustainable leadership and collaborative leadership	Operational leaders in Australian mining, oil, and gas industries were not only prioritising environmental sustainability but are also fostering more inclusive decision-making processes	'I've just seen some improvements in how we run meetings…It's such an inclusive way of getting everybody to actually to participate…. Innovative leaders have been able to take advantage of that …' (P06). 'You probably had to trust their decision making. A bit more. Then before COVID because you know, they had more information and sometimes than I did because they were, they were sitting next to the stakeholders' (P05). 'I try and have a balance between shared and direct sometimes particularly when you have two different panels…I would possibly post COVID rely on the team to do things a bit more themselves' (P05).

action, stabilisation, and recovery. Through analysing real-life instances of ACMT, our study provides valuable insights for theory that also have implications for best practice. Indeed, the study offered profound insights into the theory's relevance and efficacy (Pearson & Clair, 1998; Uy et al., 2023).

Initial outbreak stage of the COVID-19 pandemic

The analysis of the pre-COVID-19 operational leaders' roles has demonstrated that they balanced the responsibilities of team management and safety compliance as well as operational continuity. Additionally, our findings showed that these leaders displayed diverse behaviours such as inclusivity, empathy, focus on results, and being directive. However, when the COVID-19 pandemic outbreak in 2020, the nature of operational leaders' roles and behaviours were rapidly adapted to meet the demands. The immediate adaptive strategies adopted by the operational leaders include sense-making and implementation of new government and top leaders COVID-19 respond protocols. Moreover, operational leaders were tasked with the responsibility of overseeing logistics, which includes coordinating the movement of personnel, equipment, and supplies in challenging remote or offshore locations (Atkins, Zhang, & Yu, 2010). The ability of these leaders to swiftly adapt to new roles showcased their agility and resilience, both essential for ACMT (Uy et al., 2023).

Operational leaders not only fulfilled their sense-making and policy implementation duties but also promptly modified their responsibilities to prioritise the wellbeing of employees. Employees pre-COVID-19 work, and travel arrangements were restructured. Leaders changed workforce working rosters, working hours, adopting working from home, and so on. Also, as part of risk management, operational leaders were required to identify a minimum number of onsite personnel and adjust transportation methods such as buses and planes, to prevent cross-contamination among employees. By prioritising employee's health and safety, operational leaders provide stability and helped build long-term resilience of their companies. Our findings complement and expand multiple studies conducted during the COVID-19 pandemic that highlighted the significance of adaptive crisis management in protecting employee wellbeing (Bartsch, Weber, Buttgen, & Hubber, 2021; Caringgal-go et al., 2021; Spagnoli et al., 2020). The shift in priorities and behaviours at the initial stages of the pandemic underscore the importance of rapid adaptative and supportive actions which aligned with the ACMT.

In addition, one of the key components of ACMT is effective communication (Lynn Perry & Erika Hayes, 2008). Our study determined that maintaining transparency, trust, and alignment during pandemic uncertainties relies heavily on continual and effective communication from the start (Guan et al., 2020). Operational leaders had to frequently communicate with their employees, giving them updates on crisis response plans, safety protocols, and organisational changes. The pandemic

compelled operational leaders to adapt swift decision-making approach, flexibility, problem-solving, and clear and regular communication to ensure business continuity and staff wellbeing (Terblanche, 2022). This finding confirms the significance of open and transparent communication in establishing trust, minimising uncertainty, and cultivating resilience within organisations (Dale Oen et al., 2022).

The shifting of roles at the initial stages of the pandemic led to additional job demands among operational leaders, requiring them to adopt more directive and micromanagement tactics. Our findings align with work of Sadiq et al. (2020) which demonstrated that leaders in multiple sectors (e.g., healthcare and business) took an active and directive approach at the beginning of the crisis to quickly fix the problem. The shift towards these behaviours reflects the need for close oversight and control to ensure adherence to health protocols, government directives, and operational efficiency during uncertain times. This study demonstrated that leaders need to adjust their behaviours to manage the crisis and maintain the orderliness of the organisation.

Peak of COVID-19 crisis

As the pandemic progressed further, the theme of 'proactive adaptation of roles and behaviours' emerged consistently. Operational leaders in MOG industries redirected their attention towards long-term remote strategies, digital transformation, and the evaluation of hybrid work models for long-term sustainability as the pandemic continued. Leaders noted value in flexible remote work and technologies (Acciarini, Boccardelli, & Vitale, 2021). Consequently, leaders initiated the development of clear performance measures and effectiveness criteria for work in non-traditional work environments, while simultaneously cultivating trust among geographically dispersed employee teams (Ng et al., 2021). This emphasises the significance of being strategically agile and innovative in ACMT, acknowledging that leaders must adapt strategies to keep up with evolving challenges and opportunities (Blaszczyk et al., 2023; Stoker et al., 2019).

In addition, our study has revealed a continuous focus on employee wellbeing, mental health support, and inclusive behaviours reflecting the importance of employee-centric leadership within adaptive crisis management theory. The results demonstrated that operational leadership prioritised effective communication, empathy, and support to foster trust and resilience among employees. Operational leaders realised that assisting staff in the hard times was of paramount importance and consequently implemented policies aimed at safeguarding the personnel's physical and mental wellbeing as well as their productivity (Delfino & Van Der Kolk, 2021; Li et al., 2021). This accords with studies focusing on the positive effect of wellbeing support, positive relationship and inclusivity on the psychological wellbeing and work engagement of employees during crisis periods (Ahmed, Zhao, & Faraz, 2020; Kusumwardani, Arquisola, Amin, & Restiawati, 2023), thus bridging the knowledge gap concerning leader behaviours in crisis. This underscores the role of leaders in building trust, promoting collaboration, and empowering teams to navigate challenges effectively.

Recovery stage (emerging out) of COVID-19

The emergence from the COVID-19 pandemic has provided the opportunity for operational leaders to reflect on the challenges and opportunities. Theme of 'reflection transformation and sustainable resilience' has emerged from the analysis. Developing through difficulties of the pandemic, Australian MOG industries have gained invaluable experience in being resilient and sustainable. The stand of the operational leaders on building the foundation for resiliency and readiness for the future undeniably shows the significance of strategic planning and adaptation at the long-term stage which is a hallmark of ACMT (Jong, Duckers, & Velden, 2016; Van Wart & Kapucu, 2011). Current operational leaders were assessed with concern to their capacity to identify business continuity plans, invest in digital assets, and analyse the sustainability of remote work models to augment organisational resilience towards future shocks. This shows the significance of leaders for looking ahead and being prepared

for whatever challenges might emerge while sustaining an environment of flexibility and ability to withstand any difficulties inside these organisations (Wotten & James, 2008).

Furthermore, operational leaders' focus on digital transformation and innovation mirror the way the nature of work and business operations have been altered because of the pandemic (Blaszczyk et al., 2023; Li et al., 2021). The leaders of the MOG industries have adopted digital technologies and built digital infrastructure, while at the same time changing work practices are being evaluated to create organisational resilience and adaptability (Bartsch et al., 2021). This narrows down the role of technology in ACMT, where leaders get to use technology to drive agility as well as be open for innovation (Bartsch et al., 2021; Pearson & Mitroff, 1993).

Additionally, the attention to organisational resilience and change management is provided as leaders remain exposed to the challenges of uncertainty and change management. Leaders committed to creating flexible working hours, strengthen crisis management skills and establishing an atmosphere of resilience to survive the pandemic world (Pearson & Clair, 1998). This highlights the significance of suitable change management practices that are rooted in ACMT, because leaders must not only manage changes but also minimise disruptions and maximise resilience (Fener & Çedikci Çevik, 2015; Grint, 2020).

Emerging from the pandemic, our findings also shown that some of operational leaders shift behaviours to support recovery, trust, and resilience. While effective communication remains, the emphasis was on communication of the long-term strategy and organisational goals. The purpose was to promote transparency with employees and build trust among them. The role of efficient communication in overcoming the post-pandemic orientation was championed by the operational leaders. Good communications practices advanced organisational resilience and trust in crises through research (Barua & Bhattacharya, 2023; Muir et al., 2023).

In addition, supportive behaviours were sustained or adopted to assist employees in transitioning back to the workplace and addressing any lingering challenges from the pandemic. However, there was a greater emphasis on sustaining employee morale and motivation as employees adjust to new work norms and expectations. Empathy and support remain crucial in the post-pandemic world as organisations transition to new ways of working. Study by Liu, Gong, Zhou and Huang (2020) highlight the positive impact of supportive leadership behaviours on employee wellbeing and organisational performance. Operational leaders continue to prioritise employee welfare by offering flexibility, recognising individual needs, and providing resources for mental health support.

During this latter stage of the pandemic, some operational leaders emphasised more inclusive behaviours. Leaders acknowledged that inclusive behaviour was need in this period to promote sense of belonging and innovation in diverse work environment. This finding is line with number of studies conducted which demonstrated the nexus between the inclusive leadership behaviours, teamwork, and innovation thinking which is required in this period of new working arrangements (Flemming, 2022; Kusumwardani et al., 2023; Sokro, Obuobisa-Darko & Zungbey, 2023).

While the initial stages and further stages (peak) into COVID-19 were reactive, many of the strategies and behaviours adopted in these periods have become part of operating models and embedded in the everyday leadership practices of Australian MOG industry leaders. This agrees with the theoretical perspective of Bass and Avolio's transformational leadership whereby the leaders initiate massive change considering external pressures (Bass & Avolio, 1994).

During the recovery stage, the theme of adaptability and crisis management became prominent among the participants. The participants acknowledged that the pandemic enhanced their capacity to respond quickly to crises. This is in line with existing literature on leadership in high-risk industries, emphasising the importance of adaptability and resilience (Bajaba et al., 2021; Cote, 2022; Dulewicz & Higgs, 2005). Operational leaders in Australian MOG industries are better prepared for a range of disruptions compared to pre-COVID-19 crisis. The long-term adoption of adaptability reflects a broader shift towards proactive, rather than reactive, leadership. These leaders acknowledged that flexibility

is crucial in resources industry where crises are common, and they continue to apply this mindset in everyday decision-making.

The concern for the health of the workers has also created better safety systems in MOG industries. Operational leaders remain committed in complementing health check, wellness programs and mental health support to promote employee wellbeing. The physical, psychological and emotional health has positive correlation with work output and organisational performance (Anitha, 2014; Krekel, Ward & Neve, 2019). This shift in focusing on safety makes it clear that the pandemic has left a lasting mark on leadership approaches to human capital. Thus, the integration of wellbeing into leadership approaches means that safety stays a priority in the long term to increase retention and lessen operational hazards for mining leaders.

The study further explained the emergent issue of sustainable leadership and collaborative leadership. Operational leaders in the Australian MOG industries promote more inclusive decision-making processes. These behaviours learned during the pandemic, follow the current trends of ethical leadership and corporate social responsibility (Carrol, 2016; Markey, Ventura, Donnell, & Doody, 2021; Porkodi, 2022). In this regard, mentality, which began to form during the pandemic, including increased concern for global problems and the ability to build resistance, becomes the long-term basis for ethical and sustainable leadership.

Theoretical implications

The study showed that operational leaders in Australian MOG industries promptly adapted their strategies and behaviours throughout the various stages of the pandemic to meet immediate demands and ensure business continuity. This result contributes the development of ACMT (Howitt & Leonard, 2009). Fink (1986) introduced this concept, emphasising the necessity for businesses to make real-time adjustments instead of relying solely on pre-established crisis plans. The theory posits that crises can be overcome through continuous learning and adaptation (Boin & Mcconnel, 2007). Traditionally, the roles of leaders have been depicted to be static (Drabek & Mcentire, 2003; Quarantelli, 1998). However, the results from this study do not support such a narrative and point to adaptive responses in each phase of crisis (Comfort, 2007; Paton & Johnston, 2017). In the four stages of the COVID-19 crisis, we have shown that operational leaders change their strategies along with duties and behaviours (Heifetz et al., 2009; Heifetz & Linksy, 2017).

Practical implications

This study's findings have practical applications for MOG industries operational leadership. The study urges companies to promote a culture of proactive sense-making (Kervinen, 2021). It is advisable for leaders to constantly assess and analyse the external environment, identifying emerging signals of change or crisis (Weick, 1995). This allows organisations to respond rapidly to new challenges. Companies should train leaders in sense-making techniques (Weick, 1995). Also, businesses should enhance their crisis preparedness by accepting the changes in responsibilities and roles at each stage of a crisis. This entails developing and continually updating crisis response plans that incorporate elements such as policy implementation, communication tactics, logistics, and employee welfare. Companies require regular crisis simulation exercises, fine-tuned response plans and familiarisation of employees with protocols. In addition, wellbeing should be a focus for leaders as they implement programs that promote positive mental health, support, and flexible working.

Limitations and future research

Our study illuminates the changes in operational leaders' roles and behaviours during the COVID-19 pandemic in Australia's MOG sectors, but we must acknowledge its limitations. First and foremost, it is crucial to recognise that interview data reflects the subjective viewpoints and experiences of operational leaders, rather than providing objective accounts of reality (Terblanche, 2022). Future

research can benefit from using multiple methods to collect data and examine differences in operational leaders' perceptions across organisational levels and industries (Onwuegbuziw & Leech, 2004). Furthermore, the outcomes were obtained from the Australian oil, gas, and mineral field, indicating that cultural variations in responding to and handling the COVID-19 crisis may result in diverse perceptions of operational leaders across nations. Also, future research should examine the role of senior leaders in resourcing and committing to necessary adaptions in strategy and operational actions.

Conclusion

The thematic analysis showed how operational leaders' roles and behaviours changed during the four stages of the COVID-19 pandemic. Our findings indicate that there was a marked shift in leaders' roles and behaviours during the initial chaotic stages of the pandemic, while their overall core operational responsibilities were largely unchanged. The pandemic created additional duties and responsibilities, which resulted in leaders' behavioural adaptation. The analysis also revealed that the roles of leaders established in the early stages of the pandemic became regular practices further into the crisis, with certain aspects being emphasised. Additionally, the findings indicate that crisis has presented future opportunities for adoption such as remote work and tech-enhancement. These insights show how crises such as the COVID-19 pandemic can add extra pressure on leaders, potentially resulting in negative effects on their mental and emotional wellbeing.

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