

Total Quality Management in Crisis: How Can Total Quality Management Strategies Enhance the Resilience of the Jordanian Aviation Industry After COVID-19?

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Declaration

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Abstract

This study explores how Total Quality Management (TQM) principles can enhance crisis resilience within the Jordanian aviation sector, emphasising leadership, culture, and employee well-being during COVID-19–level disruptions. Using an interpretivist qualitative case study within a Middle Eastern MNE airline operating within the Jordanian aviation sector, the research gathered data through semi-structured interviews, non-participant observations, and document analysis. Findings reveal that crisis-driven pressures often led to top-down decision-making, poor communication, and insufficient crisis-specific or mental-health training, undermining TQM’s participatory ethos. Cultural norms, such as hierarchical leadership and strong deference to seniority further marginalised frontline staff, highlighting the fragility of TQM principles under acute stress. The study underscores the importance of ‘soft’ TQM elements, including psychological support, inclusive leadership, and transparent feedback loops, which are key to sustaining operational continuity and employee morale. By showing how organisations can regress into autocratic practices when pressured, the findings enrich TQM and crisis-management theory, stressing the need for culturally sensitive adaptations and systematic crisis planning. Practical recommendations include combining technical and people-centric strategies, embedding mental-health resources, and creating open channels for timely dialogue. Policy directives that mandate agile, evidence-based protocols and ongoing staff input can strengthen crisis readiness while respecting local cultural values. The research concludes that TQM, if adapted to cultural and crisis contexts, can significantly boost airline resilience, supporting the calls for broader investigations across multiple airlines, including longitudinal analyses of crisis-driven reforms, and the integration of digital tools for robust, people-centred operations.

Keywords: Total Quality Management (TQM), Crisis Management, COVID-19 Pandemic, Jordanian Aviation Industry, Organisational Resilience, Leadership and Employee Engagement, Socio-Technical Systems Theory (STST), Contingency Theory, Qualitative Case Study, Cultural Adaptation in Middle Eastern Context.

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Abbreviations

CAQDAS	Computer-Assisted Qualitative Data Analysis Software
CARC	Civil Aviation Regulatory Commission
CCOM	Cabin Crew Operating Manual
COVID-19	Coronavirus Disease 2019
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IMF	International Monetary Fund
JD	Jordanian Dinar
MoH	Ministry of Health
NCSCM	National Centre for Security and Crisis Management
PPE	Personal Protective Equipment
PDCA	Plan–Do–Check–Act (cycle)
PCR	Polymerase Chain Reaction
RQ	Research Question
SARS	Severe Acute Respiratory Syndrome
SPSS	Statistical Package for the Social Sciences
STST	Socio-Technical Systems Theory
TQM	Total Quality Management

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Chapter. 1 Introduction

1.1 Context and Rationale

Crises, be they pandemics, natural disasters, or political upheavals, pose consistent challenges to contemporary organisations in a myriad of ways. Within the aviation industry, the global spread of COVID-19 prompted an especially severe disruption, including lockdowns, and border closures. This was coupled with rapidly shifting health regulations forcing airlines to ground large segments of their fleets, reconfigure safety procedures, and contend with an unprecedented collapse in passenger demand (Donthu & Gustafsson, 2020; Sigala, 2020). While many industries encountered similar hurdles, aviation's safety-critical nature and reliance on cross-border mobility accentuated the scale of both operational and managerial difficulties (Martin et al., 2023). This heightened vulnerability has reinvigorated scholarly interest in crisis management, organisational resilience, and leadership best practices within the aviation sector (Devroop & Israel, 2021; Ritchie & Jiang, 2019).

Positioned at the intersection of management, crisis studies, and organisational behaviour, this thesis critically examines how Total Quality Management (TQM) principles can bolster airline resilience during crises. Briefly, TQM was originally developed to enhance process efficiency and customer satisfaction and has steadily expanded into a broader organisational philosophy emphasising continuous improvement, leadership commitment, and employee engagement (Deming, 1993; Oakland, 2014). However, debates persist about whether TQM frameworks, which were traditionally designed for stable or incrementally changing environments, are sufficiently agile or robust to support organisations through abrupt, large-scale crises (Zyphur & Pierides, 2020). Aviation's unique safety imperatives and cross-functional operations make it a compelling context for investigating TQM's resilience, particularly under 'non-traditional' crises such as pandemics (Pasmore et al., 2019; Reason, 2016).

The recent pandemic underscores why studying organisational resilience and TQM in aviation is so timely. Although COVID-19 was unprecedented in its global reach, scholars caution that pandemics, like other 'black swan' events may recur with accelerating frequency due to factors such as increased travel, urban density, and climate change (Delardas et al., 2022; Verma & Gustafsson, 2020). In other words, unique events might become commonplace. Importantly,

the speed and magnitude of the pandemic's impact, which ranged from crew quarantine requirements to reconfigured passenger procedures, exposed latent vulnerabilities in airline management structures (Coombs et al., 2020). Issues of leadership style, communication breakdowns, and employee well-being surfaced as critical levers for either crisis adaptation or organisational failure (He & Harris, 2020). Consequently, this crisis illuminated the extent to which TQM's participatory ethos and continuous-improvement cycles can, or cannot, be readily adapted to extraordinary, rapidly changing conditions (McKinsey, 2023).

Against this backdrop, the present research narrows its focus to the Jordanian aviation industry as an exemplar of Middle Eastern aviation more generally. Although Jordan is a middle-income country, its airline sector has historically played a major role in economic development, tourism facilitation, and regional connectivity (Alafeshat & Tanova, 2019; IATA, 2017). Yet the country's geopolitical location, alongside regional conflicts and limited infrastructural resources, added complexity to airline operations (Hana Naghawi, 2019). Furthermore, COVID-19 intensified these strains, forcing Jordanian carriers to rapidly recalibrate staffing, safety measures, and cost structures. The gap between TQM's aspirational promises (e.g., stakeholder engagement, continuous improvement) and real-world pressures (e.g., layoffs, abrupt rule changes) appeared especially stark within such an environment (Zbaracki, 1994). Moreover, Jordanian cultural norms, marked by respect for hierarchy, communal responsibility, and loyalty, can either reinforce or impede TQM-inspired autonomy, participatory leadership, and openness to change (Al-Khawaldeh et al., 2024; Hofstede, 2001). Examining how these national and organisational dynamics shape crisis responses therefore became a critical, underexplored area of scholarship (Khan & Law, 2018).

While TQM research is extensive, there was a poverty of understanding regarding aviation organisations confronting acute, biologically driven crises (Oakland, 2014; Zairi, 2013). Even fewer studies attempted to rigorously integrate an interpretivist methodology to capture frontline narratives about leadership, culture, and crisis adaptations under TQM frameworks (Denzin & Lincoln, 2011). This being said, conventional crisis-management research does recognise the importance of communication, agility, and staff well-being but this is often at the expense of underestimating the interplay with TQM's system-wide processes (Child, 1984; Donaldson, 1995). Notably, socio-technical systems theory (STST) (Emery & Trist, 1960) and contingency theory (Burns, 1961) suggest that organisations must align social and technical subsystems to remain resilient. Troublingly, empirical evidence on how these theories converge

with TQM in a crisis context, particularly in Middle Eastern aviation, remains sparse. This research therefore addresses these gaps by blending TQM principles with broader organisational theories and qualitative methods, thereby uncovering where classic management models either succeed or falter under extreme disruption (Butler & Brown, 2023).

Finally, Jordan's aviation sector not only faces operational pressures common in many developing economies, such as infrastructural shortcomings and regulatory intricacies, but also operates within distinct cultural norms that shape managerial behaviour, communication styles, and employee expectations (Hofstede, 2001; Khan & Law, 2018). Analysing airline responses in this setting highlights how TQM processes may require cultural adaptation to foster genuine empowerment and learning (Schein, 2002). Equally relevant is Jordan's reliance on government subsidies during crises, an arrangement that brings added complexity to decisions about resource allocation, strategic autonomy, and organisational accountability (IMF, 2021). By situating its case study in Jordan, this thesis offers insights that look beyond Western-centric TQM assumptions, illuminating how global frameworks intersect with local realities.

1.2 The Research Problem Statement

In the context of the Jordanian aviation industry, the central problem this thesis seeks to address is the lack of a cohesive and resilient TQM framework capable of sustaining operational effectiveness, including employee well-being, and organisational adaptability during and after large-scale crises such as COVID-19. Although TQM promises continuous improvement, participatory leadership, and robust safety cultures (Deming, 1986a; Oakland, 2011), the pandemic has exposed significant gaps between theoretical ideals and everyday practices. Interviews with frontline cabin crew and managers revealed frequent breakdowns in communication, inconsistent policy enforcement, insufficient crisis-specific training, and a pervasive mismatch between top-down directives and the lived realities of employees. These discrepancies underscore a larger structural and cultural disconnect that undermines TQM's intended benefits when organisations face heightened financial, regulatory, and health-related pressures. Briefly, the key challenges impacting multiple stakeholder groups within this industry include:

- *Frontline Employees (Cabin Crew, Ground Staff)*: Under crisis conditions, they report inadequate training, high stress, and limited decision-making autonomy. Their sense of psychological and job insecurity intensifies whenever leadership focuses primarily on short-term cost-cutting rather than employee welfare (He & Harris, 2020).
- *Mid- and Upper-Level Managers*: Although they strive to align operational goals with regulatory demands, they often rely on hierarchical, top-down directives, inadvertently stifling frontline feedback and empowerment (Burnes, 2004; Child, 1984). Consequently, they struggle to maintain consistent communication flows and adapt TQM processes to rapidly shifting circumstances.
- *Passengers and the Wider Public*: As airline operations fluctuate, service quality and safety perceptions suffer. Inconsistent protocols (e.g., unclear quarantine rules, last-minute policy changes) can diminish passenger confidence, implicating the broader tourism and travel ecosystem (Sigala, 2020).
- *Industry Regulators and Policymakers*: Current approaches, such as sporadic bailouts or ad hoc safety advisories do not fully integrate TQM-based continuous improvement cycles or address the root causes of organisational fragility (Citaristi, 2022; Donaldson, 1995).

Despite various crisis-management attempts, and for example, partial government subsidies, quick adaptations like ‘Corona Manuals,’ remote work protocols, these efforts remain largely reactive and fragmented. They rarely incorporate frontline feedback loops or robust training modules that attend to both technical and psychosocial dimensions of a crisis. This piecemeal approach fails to mitigate core issues of unclear communication, uneven policy compliance, and overlooked employee well-being, all hallmarks of an under-optimised TQM system (Deming, 1993). Addressing this problem holds significant ramifications for:

- *Societal and Economic Stability*: Given aviation’s outsized influence on employment, tourism, and national connectivity in Jordan (IATA, 2017), fostering a resilient TQM culture is vital for preserving economic momentum and public trust during future disruptions.
- *Organisational Best Practices*: By refining crisis-oriented TQM strategies, such as culturally attuned leadership, comprehensive training, and continuous feedback,

airlines can develop sustainable, high-reliability operations that withstand global shocks (Pasmore et al., 2019; Reason, 2016).

- *Policy Development:* Findings can inform regulatory bodies (e.g., Civil Aviation Regulatory Commission, Ministry of Health) to craft agile, evidence-based guidelines that not only mandate technical compliance but also incentivise participatory management and staff empowerment.
- *Advancement of TQM Scholarship:* Crises challenge the universal applicability of TQM frameworks, particularly in hierarchical or collectivist cultures (Hofstede, 2001). This research extends existing theory by illustrating how TQM can falter and be recalibrated under extreme disruptions, offering new conceptual lenses for crisis-responsive quality management.

In sum, the problem involves bridging the gap between TQM's aspirational ideals and real-world constraints within Jordanian aviation, especially under crisis pressures. Failing to address these structural and cultural tensions may compromise not only airline performance but also workforce morale, passenger confidence, and broader industry resilience.

1.3 Research Objectives and Questions

Building on the problem statement that underscores a gap between the theoretical ideals of TQM and the practical realities exposed by the COVID-19 pandemic within Jordanian aviation, this section articulates the overarching research objectives and the specific research questions that guide this investigation. These objectives and questions emerged from the interplay of organisational culture, crisis responsiveness, and TQM principles identified throughout Chapters 1 and 2, as well as the methodological considerations outlined in Chapter 3.

Given the critical need for adaptive, stakeholder-driven management in Jordan's aviation sector (Donaldson, 1995; Pasmore, 1988), this study seeks to achieve the following four overarching objectives:

- Examine TQM's applicability in crisis contexts:

- *Rationale:* While TQM has a robust legacy in stable environments (Deming, 1986a), its efficacy under extreme disruptions (e.g., pandemics) remains less empirically explored (Oakland, 2014; Pfister et al., 2023). This objective addresses how TQM principles, such as continuous improvement, employee empowerment, and stakeholder alignment, manifest (or fail to manifest) during large-scale crises.
- Evaluate the impact of COVID-19 on operational, cultural, and leadership practices.
 - *Rationale:* Jordanian aviation's structural vulnerabilities, ranging from high fixed costs to hierarchical management norms were magnified by the pandemic (Istaiteyeh, 2023). By critically assessing these vulnerabilities, the study aims to reveal how they intersect with TQM-driven reforms, shaping or obstructing desired outcomes (Sigala, 2020).
- Identify leadership and organisational culture dynamics that facilitate or hinder TQM adoption.
 - *Rationale:* Effective leadership and an enabling culture form the bedrock of TQM (Deming, 1993; Schein, 2002). This research seeks to map the tensions and synergies between Jordan's hierarchical work culture and TQM's participatory ethos, especially as crisis pressures accelerate decision-making (Child, 1984; Khan & Law, 2018).
- Develop context-specific enhancements to the TQM framework.
 - *Rationale:* Adopting TQM in a Middle Eastern, crisis-prone environment requires adaptations that account for local cultural norms and pandemic-driven demands. By integrating findings from human factors, contingency theory, and socio-technical systems perspectives, the study aspires to propose a refined, 'crisis-responsive' TQM model relevant for Jordanian aviation sector and beyond (Burnes, 2004; Pasmore, 1988).

In sum, these objectives collectively address how TQM can bolster the resilience of an industry confronted by unprecedented disruptions, what structural or cultural impediments complicate this process, and which strategic interventions can sustain continuous improvement under volatile conditions, or not as the case may be.

To operationalise these objectives, this study formulates five specific Research Questions (RQs). Each question derives logically from the overarching aims and addresses a distinct but interrelated facet of TQM's crisis applicability:

- RQ1: Which core TQM principles are most relevant for crisis management in the aviation sector, and how were they operationalised (or not) during the COVID-19 pandemic?
 - *Link to Objective 1:* Illuminates the breadth and depth of TQM usage under emergency conditions, pinpointing which elements of TQM (e.g., employee empowerment, continuous feedback loops) translated into tangible crisis-management practices.
- RQ2: How did COVID-19 contingencies, both external (e.g., rapidly changing health regulations) and internal (e.g., financial pressures) impact operational aspects of Jordanian aviation sector?
 - *Link to Objective 2:* Focuses on the nexus between crisis-driven constraints and operational decision-making, shedding light on how cost-cutting, regulatory shifts, or workforce adjustments shaped TQM-oriented reforms.
- RQ3: In what ways did leadership approaches and employee engagement dynamics contribute to, or hinder, effective crisis response, as measured against TQM ideals?
 - *Link to Objective 3:* Zeroes in on how leadership style and cultural norms either aligned with TQM's collaborative ethos or reverted to more autocratic paradigms under pressure, affecting frontline engagement and resilience (He & Harris, 2020).
- RQ4: What enhancements or adaptations to conventional TQM models are warranted, given the crisis experiences observed in the Jordanian aviation sector?
 - *Link to Objective 4:* Seeks to propose evidence-based modifications, incorporating local cultural factors and crisis-specific stressors, that strengthen TQM's applicability and longevity in volatile environments.
- RQ5: What policy recommendations, at both organisational and industry-wide levels, emerge from this study to reinforce sustainable, employee-centric, and quality-driven practices?

- *Link to Objectives 2 and 4:* Integrates micro- (organisational) and macro- (regulatory/policy) perspectives, aiming to inform future strategies on training, employee welfare, crisis communications, and leadership development.

By addressing these questions in tandem, the research offers a holistic exploration of TQM's crisis functionality, bridging conceptual frameworks and field-level insights. Collectively, the answers to RQ1–RQ5 build an integrated narrative of how TQM principles can be deployed, adapted, or challenged by unprecedented disruptions like COVID-19.

- Answering RQ1 helps clarify the scope and limits of TQM in a crisis context, enriching the academic debate on whether TQM's continuous-improvement cycles can remain robust under acute pressures (Burnes, 2004; Oakland, 2014).
- Answering RQ2 dissects the real-world impact of pandemic-induced constraints on airline processes, showing how operational systems become more (or less) adaptive when TQM meets external shocks. This has direct implications for operations management literature (Skinner, 1974) and contingency theory (Donaldson, 1995).
- Answering RQ3 illuminates the pivotal role of leadership and organisational culture in shaping TQM outcomes. Understanding these dynamics is particularly relevant for Middle Eastern carriers, where hierarchical norms may clash with TQM's participatory ethos (Khan & Law, 2018).
- Answering RQ4 establishes the modifications needed for a crisis-responsive TQM model, synthesising the empirical gaps identified during COVID-19. This outcome is crucial for evolving TQM scholarship to better incorporate socio-technical systems perspectives (Pasmore et al., 2019) and crisis-management principles (Donthu & Gustafsson, 2020).
- Answering RQ5 culminates in actionable recommendations, contributing to policy discourse on aviation safety, workforce well-being, and regulatory frameworks. It underscores how TQM-based reforms, if sensitively adapted, can foster long-term resilience beyond the immediate emergency.

To summarise, these research objectives and questions serve as the strategic backbone for the qualitative inquiry. By systematically addressing each question, the study integrates theoretical debates on TQM, socio-technical systems, and crisis management with empirical insights from Jordanian aviation. As such, it aims to advance both scholarly understanding of TQM's crisis potential and offer pragmatic solutions for industry stakeholders navigating future disruptions.

1.4 Significance and Contribution

This section explains how the research both advances theoretical debates in TQM and provides actionable insights for practitioners, policymakers, and other stakeholders in the aviation industry. By examining the role of TQM under the severe disruptions caused by COVID-19, the thesis aims to bridge gaps in existing crisis-management literature while proposing context-specific adaptations relevant to the Jordanian aviation sector.

1.4.1 Theoretical Significance

A central contribution of this research is its focus on TQM implementation during a global crisis, rather than under stable conditions. While seminal TQM frameworks by Juran and Gryna (1988), Deming (1986a), and Crosby (1979) emphasise continuous improvement, stakeholder engagement, and standardised quality control, most established studies explore TQM in relatively predictable business environments. In contrast, the COVID-19 pandemic introduced rapid changes, widespread uncertainty, and unprecedented pressures on both operational and human factors (Donthu & Gustafsson, 2020; Sigala, 2020). By analysing how TQM principles were challenged or adapted under these volatile conditions, this thesis extends current theory to incorporate 'crisis-responsive' TQM models, echoing calls by Pfister et al. (2023) for more flexible and context-aware quality strategies.

Beyond classical TQM, the study synthesises insights from Contingency Theory (Donaldson, 1995) and (STST) (Emery, 1959; Pasmore, 1988). Although prior research occasionally treats TQM, contingency frameworks, and STST as separate lenses, this thesis demonstrates how Jordanian aviation sector navigated the pandemic by drawing on all three. Findings show that

organisational adaptability, per contingency theory, depends on a socio-technical alignment where employee empowerment and technical protocols are congruent (STST), yet also subject to TQM's emphasis on continuous improvement. This tri-theoretical integration refines each theory by revealing both synergies and tensions, while highlighting the challenge of balancing top-down mandates (a necessity in crisis) with TQM's call for employee-driven quality initiatives.

A recurring theme in TQM scholarship involves positioning leadership and organisational culture as cornerstones of successful quality management (Deming, 1993; Hofstede, 2001). However, few studies systematically examine how these factors play out in Middle Eastern contexts where hierarchical traditions, collectivist values, and military-influenced management styles can reshape extant Western centric norms and the adoption of TQM principles (Al-Khawaldeh et al., 2024; Khan & Law, 2018). Furthermore, by highlighting cultural adaptation, informal support networks, and team cohesion within the Jordanian aviation sector, this thesis confirms the importance of culturally astute leadership and refines existing theories on TQM-driven transformation under non-Western conditions. In so doing, it addresses a research gap on how national culture moderates TQM uptake and success during crises (Burnes, 2004).

1.4.2 Practical Significance

At a practical level, the findings contribute to numerous aviation industry stakeholders, including airlines, civil aviation authorities, and airport management, and in so doing, identify salient concrete measures to strengthen future sector resilience. For instance, the thesis underscores the need for holistic training programs that integrate technical, psychological, and crisis-response components. Developing scenario-based drills and mental health resources, as recommended by Pasmore et al. (2019), can bolster frontline readiness, reduce errors, and improve the speed at which airlines adapt to disruptions. Moreover, clear communication protocols and participatory decision-making structures can mitigate confusion, enhance morale, and prevent operational breakdowns, which are of course vital lessons for any industry susceptible to 'black swan' events.

From a policy perspective, the research offers strategic insights for government bodies, including Ministries of Transport, Civil Aviation Regulatory Commissions, responsible for

ensuring aviation safety and economic stability. By highlighting policy and procedural compliance challenges during COVID-19, the thesis advocates for agile regulatory frameworks that can evolve with shifting health mandates and industry needs. This includes establishing rapid feedback loops between airlines and regulators to keep guidelines both consistent and culturally sensitive. In terms of leadership, the study demonstrates how supportive supervision and empowering managerial styles can curb employee turnover and safeguard service quality, meeting TQM's principles of employee well-being and continuous improvement (Oakland, 2011).

Airlines worldwide can benefit from the case-specific insights on accountability, risk management, and employee engagement under crisis pressures (Reason, 2016; Sigala, 2020). The thesis delineates practical frameworks for implementing temporary crisis squads or 'war rooms' that draw on TQM's collaborative ethos, ensuring decisions are data-driven, yet inclusive of frontline expertise. Equally, the research underscores the financial and reputational costs of neglecting workforce concerns, corroborating calls by Donthu and Gustafsson (2020) to maintain ethical business practices and transparent communication even under extreme stress.

1.4.3 Unique Perspective and Methodological Contribution

Unlike earlier TQM-centric studies, this research adopts a multi-theoretical lens, drawing on TQM, contingency theory, and STST, within the Jordanian aviation sector context. This integrative approach offers a richer conceptual toolkit than using TQM alone, capturing how cultural, structural, and technological elements concurrently shape crisis responses. It thus refines mainstream TQM frameworks by demonstrating where cultural adaptation and flexible structures are essential for sustaining quality during large-scale disruptions.

Much TQM research relies on either quantitative surveys or Western-based case studies (Meredith, 1993; Pfister et al., 2023). By adopting an interpretivist paradigm and an in-depth qualitative case study in Jordan, this thesis provides contextually grounded insights into how employees and managers perceive, negotiate, and apply TQM principles in an Arab cultural environment. This perspective is particularly valuable given the limited qualitative, Middle

East-focused TQM literature, offering fresh empirical evidence and thematic depth that quantitative metrics alone may overlook.

Methodologically, the research employs a thematic analysis (Braun & Clarke, 2022) with Cohen's Kappa Inter-Coder Reliability checks to ensure consistency and rigour in code generation. This level of systematic qualitative validation is less common in TQM studies, where anecdotal or descriptive approaches can prevail. By combining inductive and deductive coding (Fereday & Muir-Cochrane, 2006), the thesis both tests existing frameworks and uncovers new patterns, demonstrating a balanced approach that enhances the credibility of the findings. Such methodological transparency can guide future researchers seeking to replicate or extend the study in similar or different cultural contexts.

In essence, this thesis pushes TQM theory forward by revealing how a biologically driven crisis can disrupt long-assumed organisational routines, underscoring the need for agile yet people-centred quality management. It challenges existing notions that TQM is inherently robust across all contexts, instead arguing for crisis-responsive adaptations and cultural alignment. Practically, the study's policy and operational recommendations aim to help airlines, regulators, and industry associations develop more resilient, human-focused responses to future shocks. Finally, its unique methodological approach, an interpretivist, in-depth case study incorporating rigorous thematic analysis, offering a replicable template for scholars interested in the social dynamics of TQM under high-pressure conditions.

1.5 Research Boundaries and Delimitations

Effective doctoral research requires defining clear boundaries that focus investigative efforts and ensure methodological rigour (Creswell & Creswell, 2017). This section specifies the contextual, methodological, and theoretical delimitations of the present study. Such transparency aids readers in interpreting the study's findings and in gauging how broadly these insights may be transferred to other settings (Yin, 2018).

A key delimitation of this study is its geographic focus on the Jordanian aviation sector. Although the Jordanian aviation sector is global, Jordan's specific regulatory, cultural, and

economic conditions shape organisational strategies in ways that may not generalise to carriers in different regions (Al-Khawaldeh et al., 2024). By homing in on Jordan, the study can probe deeply into locally relevant dynamics, such as government subsidy mechanisms, hierarchical managerial norms, and sociocultural expectations of employee loyalty, and how these intersect with TQM principles during crises.

Another boundary is the time frame encompassing the onset of the COVID-19 pandemic (2020) through to the gradual resumption of commercial flights and partial recovery (late 2022). This period captures the most acute disruptions to aviation, including grounded fleets, repatriation flights, and rapid safety protocol shifts, which afford a concentrated lens on how TQM was tested under ‘non-traditional’ crisis conditions (Donthu & Gustafsson, 2020). While this focus underscores crisis-specific lessons, it also means the research does not cover post-pandemic stabilisation phases that might reveal longer-term organisational adaptations.

Conceptually, the investigation orbits around TQM frameworks, Contingency Theory, and STST. Although numerous other theoretical perspectives, such as Lean Six Sigma and Institutional Theory might illuminate aspects of aviation management, the thesis purposefully prioritised TQM’s interplay with crisis management, human factors, and organisational culture. This choice is grounded in prior scholarship suggesting TQM’s relevance for agility and resilience (Deming, 1993; Oakland, 2011), and the desire to explore TQM’s practical application in a high-stakes, safety-critical environment (Reason, 2016).

1.6 Overview of Methodology

Building on the research gaps identified in the literature review, this study employs an interpretivist and qualitative research design to examine how TQM principles can enhance the resilience of the Jordanian aviation industry in the wake of COVID-19. While previous scholarship has often applied quantitative or positivist models to TQM, recent debates underscore the complexity of crisis environments and the need for rich, context-specific insights that interpretivist methodologies provide (Denzin & Lincoln, 2011; Pfister et al., 2023).

A qualitative case study approach underpins this research, focusing primarily on semi-structured interviews, non-participant observations, and document analysis (Yin, 2018). This approach is well-suited to answering the how and why questions central to TQM's practical implementation during a crisis (McCombes, 2023; Meredith, 1993). Specifically:

- Semi-structured interviews capture subjective experiences and perceptions of frontline crew and managers, essential for uncovering the interplay of leadership, culture, and human factors during COVID-19 (Kazancoglu et al., 2023).
- Non-participant observations offer real-time glimpses into the operational environment, validating or challenging self-reported data and ensuring the research reflects the daily realities of airline processes (Bate, 1997).
- Document analysis (annual reports, internal memos, policy manuals) triangulates and contextualises interview findings, shedding light on official TQM guidelines and regulatory constraints (Sigala, 2020).

Through interpretivism, reality, or at least our perception of it is seen as socially constructed, which is particularly relevant in high-stakes, people-centric contexts such as aviation, where culture, beliefs, and leadership styles shape operational choices and decision-making (Denzin & Lincoln, 2011; Lincoln & Guba, 1985). Consequently, this paradigm allows for deeper theoretical exploration of TQM's 'soft' dimensions (e.g., employee empowerment, collaborative culture), which are often under emphasised in positivist or purely quantitative research (Deming, 1993; Schwandt, 2001).

Importantly, this methodological design directly addresses the study's key questions:

- *RQ1 & RQ2 (TQM principles & crisis contingencies)*: Interviews and observations reveal real-time adaptations in safety protocols, communication flows, and leadership structures.
- *RQ3 (Leadership & Engagement)*: The interpretivist lens captures how managers and crew interpret leadership decisions, bridging formal TQM ideals and on-the-ground experiences.

- *RQ4 (Enhancements to TQM)*: A qualitative case study enables inductive theory-building, illustrating the specific organisational constraints that either foster or hinder TQM reforms.
- *RQ5 (Policy Recommendations)*: By integrating participant narratives and document review, the approach pinpoints policy gaps such as minimal crisis training or inconsistent rule enforcement leading to actionable recommendations.

The organisation of choice for this study was selected on the basis of ease of access, potential to answer the research question, and having extensive regional and global routes. Of further importance was:

- *Strategic Relevance*: Its central role in Jordan's economic and aviation policies (Khraim, 2013a).
- *Access and Feasibility*: The researcher's insider position as a former crew member facilitated recruitment and allowed firsthand contextual understanding (Bell et al., 2022; Bryman, 2016).
- *Crisis Intensity*: The airline faced acute COVID-19 disruptions, including flight cancellations, regulatory hurdles, which made it a compelling exemplar case to study TQM adaptability in a 'non-traditional' crisis (Donthu & Gustafsson, 2020).
- *Cabin Crew and Management*: A purposive sample was drawn from different operational levels, including, frontline staff, mid-level supervisors, and senior decision-makers to provide multiple perspectives on TQM processes (Silverman, 2019).
- *Document Archives*: Annual reports, health and safety manuals, policy guidelines, and corporate memos formed a secondary data corpus, offering official statements on TQM initiatives, risk protocols, and HR policies (ICAO, 2023).

Focusing on a single airline ensures depth of analysis, vital for interpretivist case studies, but limits broad statistical generalisation (Yin, 2018). Still, the detailed, context-specific insights gleaned from interviews and thematic analysis illuminate how TQM might be recalibrated for crisis readiness in similar safety-critical industries (Oakland, 2014).

This methodology is anchored in the interpretivist and socio-technical perspectives underpinning TQM, contingency theory, and STST:

- TQM's 'soft' pillars, such as leadership style, employee empowerment, and open communication, which demand qualitative exploration to capture lived experiences (Crosby, 1979; Deming, 1993).
- Contingency theory posits that organisational designs vary with environmental volatility (Donaldson, 1995). Studying the focal airline via in-depth interviews reveals how hierarchical norms and cultural practices evolve when confronted with pandemic crises.
- Socio-technical theory underscores the interdependency of social and technical factors (Pasmore et al., 2019). The researcher's observational insights detail how flight operations, training modules, and employee morale interacted dynamically during COVID-19.

The chosen methodology yields rich empirical data on day-to-day operational challenges, workforce anxieties, and leadership decisions, guiding actionable reforms:

- *Policy Innovations:* Ground-level narratives highlight policy blind spots (e.g., incomplete crisis training) that can inform regulators and management on how to refine protocols for future emergencies.
- *Leadership Development:* The interview-based evidence illuminates best practices in supporting staff welfare under duress, influencing HR strategies in TQM.
- *Global Transferability:* While concentrating on Jordan, the in-depth case study design allows other airlines, especially in culturally similar regions to benchmark their TQM frameworks against the sample airline's experiences.

In summary, a qualitative case study rooted in interpretivist philosophy and supported by semi-structured interviews, observations, and document analyses offers a coherent, in-depth lens for examining TQM processes under the extreme disruption of COVID-19. This approach not only aligns with the scholarly calls for context-rich, human-centric research on TQM but also produces insights with direct implications for industry practice and policy-making in Jordan's aviation sector and beyond.

1.7 Thesis Structure

This thesis is divided into six chapters, each building on the previous ones to present a coherent narrative of how TQM principles can enhance resilience in the Jordanian aviation industry under crisis conditions:

- *Chapter 1: Introduction:* This opening chapter provides a concise overview of the research problem, namely, the unprecedented disruptions caused by COVID-19 to the Jordanian aviation sector and situates it within the broader landscape of TQM theory and crisis management. Drawing on initial indicators of operational challenges, it underscores why a qualitative, interpretivist inquiry is warranted and delineates the five research questions guiding the study. By situating the research problem in Chapter 1, the thesis foregrounds why COVID-19 presents a ‘non-traditional crisis’ demanding new managerial approaches (Brown et al., 2023).
- *Chapter 2: Literature Review:* Here, the thesis establishes the conceptual foundations by synthesising key debates on crisis management, TQM, STST, and contingency theory. Drawing on Donthu and Gustafsson (2020) for insights into pandemic-induced economic upheavals and Emery (1959) for STST imperatives, the review highlights how Jordan’s aviation sector, marked by hierarchical cultures and strong state involvement, requires adaptive, participatory frameworks. It concludes by identifying specific gaps (e.g., limited qualitative studies on TQM under crisis) that shape the research agenda. Chapter 2 then contextualises the study within academic debates covering TQM’s pillars, socio-technical complexities, and cultural considerations thereby enhancing the reader’s grasp of how theory informs the study’s design.
- *Chapter 3: Research Methodology:* This chapter explains the philosophical and methodological scaffolding of the study, justifying the interpretivist paradigm over positivism, as recommended by Lincoln and Guba (1985) in socially constructed environments. It describes the qualitative case study design focusing the organisation of choice, and the rationale for using semi-structured interviews, non-participant observations, and document analysis to capture complex human factors (Denzin & Lincoln, 2011). Ethical considerations, coding procedures, and reliability checks (such

as Cohen's Kappa tests) are also detailed to ensure methodological rigour. The methodological choices in Chapter 3 become more transparent once readers understand the intricacies of TQM and crisis literature, clarifying why an interpretivist, case-oriented approach is suitable for capturing organisational nuances.

- *Chapter 4: Findings:* Building upon the data collection strategy, this chapter presents the empirical thematic analysis results. Ten interrelated themes emerge, ranging from communication gaps to training deficiencies, each shedding light on how TQM ideals (e.g., continuous improvement, stakeholder engagement) were actualised or constrained during COVID-19. The chapter integrates relevant industry data (e.g., IATA operational reports) and staff testimonies to illustrate how organisational cultures, leadership decisions, and regulatory pressures intersected. Chapter 4 showcases the real-world manifestations of the challenges and opportunities hypothesised in earlier chapters, offering data-driven evidence of TQM's strengths and limitations in a Jordanian aviation setting.
- *Chapter 5: Discussion & Conclusion:* This chapter interprets the findings in relation to the core research questions, drawing connections back to the conceptual frameworks discussed in Chapter 2. It assesses how effectively TQM principles guided crisis responses and where they faltered, referencing Reason (2003) on safety culture and Deming (1993) on continuous improvement. The chapter articulates practical recommendations for airline executives, such as developing robust crisis-communication protocols and culturally attuned leadership training, as well as theoretical contributions to TQM scholarship, particularly regarding crisis-resilient models. The Discussion and Conclusion (Chapter 5) evaluates these findings through multiple theoretical lenses, synthesising them into coherent lessons for policymakers, industry leaders, and scholars, thereby addressing the research questions in a focused manner.
- *Chapter 6: References and Appendices:* The thesis concludes with comprehensive bibliographic details of all cited works, followed by appendices that include interview guides, consent forms, and supplementary materials (e.g., ethics approval letter). Finally, References and Appendices ensure academic rigour and transparency, allowing

readers to verify sources, review research instruments, and appreciate the ethical considerations that underpinned the data collection.

This structure ensures that research can follow a logical progression from background to theory, from theoretical frameworks to methodology, and finally from empirical findings to critical analysis. This incremental organisation mirrors best practices in qualitative research (Creswell & Poth, 2016; Yin, 2018), guiding the audience from broad contextual insights to in-depth analysis. It provides both a high-level overview for non-specialists who seek quick comprehension of the study's implications and detailed sections for experts requiring depth, citations, and methodological detail.

1.8 Chapter Conclusion

The far-reaching impact of COVID-19 on global industries, and on aviation in particular, has illuminated the need for robust managerial paradigms that can withstand sudden, large-scale disruptions. As airlines grappled with border closures, quarantine mandates, and financial uncertainty, it became increasingly clear that TQM, enhanced by perspectives from contingency theory and STST, offers a promising framework for aligning rapid crisis responses with long-term quality goals. Yet the degree to which TQM principles can be applied in 'non-traditional' crisis environments remains an open question, especially in culturally distinctive and highly regulated sectors like Jordan's aviation industry.

The researcher's overarching motivation for this thesis, therefore, is to bridge the gap between theoretical ideals of TQM, often conceptualised in stable or Western contexts, and the on the ground challenges faced by an airline under severe operational strain. By focusing on leadership styles, organisational culture, and employee well-being, this research aims not just to expand our understanding of TQM in emergent crisis scenarios, but also to offer actionable insights into how the sample organisation, and similarly situated carriers, can incorporate continuous improvement, participatory decision-making, and stakeholder engagement into their strategic playbooks.

Building on this introduction, the subsequent chapters will critically examine the extent to which TQM ideals were upheld, or compromised, when COVID-19 disrupted normal operations. Through an interpretivist lens and qualitative case study methods, the researcher will highlight how inconsistent communication channels and reactive leadership decisions shaped frontline experiences, sometimes at odds with TQM's commitment to trust-based collaboration. At the same time, empirical data will reveal pockets of adaptive innovation, where crews and middle managers found inventive ways to maintain service quality despite unprecedented constraints. Ultimately, these findings will illuminate new pathways for integrating TQM, contingency thinking, and STST within crisis-management frameworks, providing practitioners and policymakers alike with evidence-based strategies for resilience and sustained competitiveness in a post-pandemic aviation landscape.

Chapter. 2 Literature review

2.1 Introduction

The global COVID-19 pandemic has posed unprecedented challenges to industries around the world, and the aviation sector stands out for the scale of its disruption and the complexity of its required responses (Abate et al., 2020). In Jordan, where the airline industry has historically been a critical contributor to economic development, tourism, and regional connectivity, the ramifications of COVID-19 have tested not only operational strategies but also deeper questions of leadership, organisational culture, and employee well-being (JSF, 2021). This literature review provides the theoretical and conceptual grounding for understanding how TQM principles, together with insights from contingency theory and STST, can be leveraged to navigate a so-called non-traditional crisis. In doing so, it critically examines human factors, organisational culture, and leadership philosophies, highlighting the alignment, and at times misalignment, between classical management models and more modern, participatory frameworks required for resilience and sustained performance.

The chapter begins by outlining the global economic impact of COVID-19, situating it within broader literatures on crisis management, macroeconomic policy, and stakeholder-focused adaptation. It then provides an historical overview of the aviation industry, emphasising pre-pandemic vulnerabilities and growth trajectories that contextualise the current crisis. Drawing on the Jordanian aviation sector as a case in point, the review explores how unique local dynamics, such as infrastructural constraints, privatisation debates, and government interventions, create both challenges and opportunities for implementing TQM-driven solutions. COVID-19 is then reframed as a non-traditional crisis, illuminating why its biological underpinnings and rapid global spread differentiate it from more familiar exogenous shocks like economic recessions or natural disasters.

The chapter then transitions to discussing human factors in aviation, with an emphasis on safety culture, leadership structures, and the relationship between top-down management protocols and frontline empowerment. Subsequently, key theoretical frameworks including, contingency theory, and STST, are explored in detail. Each framework is positioned as complementary, offering unique lenses through which to view crisis responses. TQM, for instance, underscores

continuous improvement and stakeholder engagement; contingency theory insists on adaptable organisational configurations suited to volatile environments; and STST highlights the interdependencies of social and technical elements within an organisation. By weaving together these theoretical strands, this review establishes the academic basis for an interpretivist inquiry into how Jordanian aviation sector have navigated the COVID-19 crisis, as well as how they can further strengthen their resilience through TQM-oriented reforms. The chapter concludes by synthesising the multifaceted literature into a coherent set of research gaps, questions, and propositions, thereby laying the groundwork for the qualitative case study approach detailed in Chapter 3.

Table 1 provides an overview of the key thematic sections of the literature review, ensuring that readers can quickly identify the main focus, related citations, and central arguments within each subsection. By organising the topics into a concise, two-column format, one for the headings and one for the principal discussion points, this table clarifies the chronological and conceptual flow from the global impact of COVID-19 to the specific socio-technical, cultural, and managerial dynamics in Jordan's aviation sector. Additionally, the table's concise bullet points and cited references highlight the most relevant studies, theories, and empirical findings that shape each discussion. In doing so, it underlines how TQM, crisis management, and local cultural factors intersect across different aspects of the literature.

Section & Heading	Key discussion points
2.2 Global Impact of COVID-19 (Baldwin & Di Mauro, 2020).	• Worldwide economic freeze affecting aviation and tourism (Donthu & Gustafsson, 2020). • Government bailouts, subsidies, and debates on market distortions (Fedyk et al., 2022; Sigala, 2020) • Resilience and stakeholder trust as strategic imperatives (Adavade, 2022). • Aligns with TQM emphasis on continuous improvement and transparent communication (Crosby, 1979; Deming, 1986b).
2.3 Pre-COVID-19 status of aviation (Sehl, 2020).	• Steady growth, global connectivity, and technological advances (Bidaisee & Sieunarine, 2021). • History of shocks (Gulf War, 9/11, financial crises) but rapid rebound (Aman & Altass, 2021). • Structural vulnerabilities: high fixed costs, complex regulations (Dube, 2023; Reason, 2016). • TQM perspective highlights missed opportunities for stakeholder alignment (Oakland, 2014).
2.4 Significance of the aviation industry in Jordan.	• Economic driver for tourism and trade (Alafeshat & Tanova, 2019; IATA, 2017). • Government involvement, privatisation trends, and regional competition (Khraim, 2013a; Williams, 2010). • Cultural norms: hierarchical leadership, communal responsibility (Al-Khawaldeh et al., 2024). • Relevance of TQM in balancing safety, efficiency, and service quality (Wren & Bedeian, 2023).
2.5 COVID-19 as non-traditional crisis (Ragab et al., 2020).	• Biologically driven threat with uncertain end dates (Rangel et al., 2022). • Multi-stakeholder coordination: airlines, health bodies, governments (Weiss-Laxer et al., 2022). • Magnified structural weaknesses and accelerated digital transformations (Grant & Wilson, 2022). • TQM's system-wide perspective for coordinated crisis response (Devroop & Israel, 2021).
2.7 Human factors in aviation during crises.	• Shift from blaming individuals to examining systemic vulnerabilities (Dekker, 2017b; Reason, 1990). • TQM promotes trust, open communication, and blame-free reporting (Argyris & Schön, 1997). • COVID-19 led to fatigue, rapid protocol changes, and morale issues (Dube, 2023). • Socio-technical solutions emphasising employee empowerment (Muecklich et al., 2023).
2.8 Operations management in crises context.	• Traditional OM: process optimization and cost control (Skinner, 1974; Tariq et al., 2021). • Pandemic challenges: volatile schedules, health protocols, supply chain disruptions (Coombs et al., 2020). • TQM synergy: balancing standardisation with frontline adaptability (Oakland, 2014). • Data-driven decisions and flexible cross-functional teams (Radnor & Boaden, 2004).
2.9 Contingency theory in crises management.	• No single best structure; must align with environmental volatility (Burns, 1961; Child, 1984; Donaldson, 1995). • Rigid hierarchies can fail under rapid changes (Salah et al., 2023).

	• TQM's iterative improvement fosters decentralised problem-solving (Deming, 1986a). • Cultural norms in Jordan: balancing top-down safety with needed adaptability (Ammirato et al., 2023).
2.10 Socio-technical systems theory (STST) (Emery, 1959; Pasmore, 1988).	• Harmonising social (people, culture) and technical (tools, processes) subsystems • COVID-19 stresses socio-technical interfaces: new digital tools, dynamic schedules (Reason, 2016). • TQM complements STST by integrating employee feedback and continuous improvement (Juran & Gryna, 1988). • Potential for cross-skilled teams and adaptable workflows (Pasmore et al., 2019).
2.11 Operational changes and adaptations (COVID-19).	• Parking fleets, pivoting to cargo, contactless check-ins (Suau-Sanchez et al., 2020). • TQM lens: short-term 'firefighting' vs. structured, iterative improvement (Oakland, 2014). • Crew fatigue, shifting guidelines, and the need for staff engagement (Moe et al., 2021). • Cross-functional 'crisis squads' vs. rigid command structures (Budd et al., 2020).
2.12 Effective leadership and employee engagement.	• Transformational vs. transactional leadership styles (Bass & Avolio, 1994) . • TQM requires open dialogue, supportive supervision, and risk-free feedback (Deming, 1986a; Mayo, 1930). • Balancing hierarchical tradition and participatory leadership in Jordan (Al-Khawaldeh et al., 2024). • Sustaining morale amid prolonged crisis (He & Harris, 2020).
2.13 Organisational culture and employee perception.	• National vs. organisational culture (Hofstede, 2001; Schein, 2002). • Jordan's hierarchical ethos and potential tensions with TQM empowerment (Khan & Law, 2018). • Diversity in airline workforces and risk of miscommunication (Li & van Knippenberg, 2021). • Leveraging collectivist values for collaborative improvement (Mehta & Shah, 2005).
2.14 Synthesis: TQM, crises adaptation & Jordan aviation industry.	• Integrating TQM, contingency theory, and STST (Donaldson, 1995; Emery & Trist, 1960). • Local cultural norms shaping leadership and decision-making (Hofstede, 2001). • Under-researched area: TQM in Middle Eastern aviation under crisis • Justifies interpretivist, case-study approach in subsequent chapters

Table 1 Overview of the key thematic sections of the literature review.

2.2 Global Impact of COVID-19 on Business and Economy

From early 2020 onward, COVID-19 has reshaped economic landscapes worldwide (Baldwin & Di Mauro, 2020). Countries scrambled to enact strict public-health measures, including border closures, quarantine orders, and travel bans to contain the viral spread, leading to a deep freeze of numerous economic sectors, particularly those reliant on mobility and personal contact (Donthu & Gustafsson, 2020). Airlines, hotels, and tourism-related services experienced an abrupt contraction of demand, further intensified by public fear of contagion and fluctuating government mandates (Sigala, 2020). Scholars like Martin et al. (2023) underscore that while some industries, such as digital technology and online retail, have capitalised on shifting consumer behaviours, service-intensive fields like aviation have endured the brunt of revenue losses.

Central banks and governments worldwide responded to this crisis with large-scale fiscal and monetary interventions, ranging from direct subsidies and bailouts to low-interest loans, wage-support schemes, and even partial re-nationalisation in certain cases (Fedyk et al., 2022). The International Monetary Fund (IMF) has called these measures both necessary and transformative, indicating that the pandemic has expanded the role of governments in market stabilisation beyond prior norms (Citaristi, 2022). These macroeconomic interventions have provoked debates about long-term sustainability, potential distortions in market competition, and the creation of ‘zombie’ firms (Sigala, 2020). Nonetheless, these policies also highlight an important synergy with TQM, namely, the call for transparent communication, inclusiveness in decision-making, and ongoing stakeholder engagement (Crosby, 1979; Deming, 1986a).

Beyond immediate mitigation, the pandemic has amplified calls for resilience as a central strategic goal for both governments and private enterprises (Verma & Gustafsson, 2020). McKinsey (2023) identifies resilience as the capacity not merely to absorb shocks but also to adapt operationally, rebuild quickly, and emerge stronger. Resilient organisations demonstrate agility in reconfiguring supply chains, adopting new safety protocols, and maintaining stakeholder trust even amid widespread turbulence. In the context of TQM, resilience dovetails with the principle of continuous improvement and the necessity of stakeholder alignment. If TQM focuses on refining processes, clarifying quality standards, and involving employees in

iterative enhancements, resilience emerges as its crisis-hardened counterpart: the ability to absorb major disruptions without losing the essence of organisational effectiveness.

Furthermore, trust and transparent communication are increasingly recognised as indispensable for resilience (Adavade, 2022). Industries with frequent customer touchpoints, such as airlines, must consistently communicate flight cancellations, regulatory changes, and safety measures to maintain public confidence. Scholars note that effectively managing misinformation and rapidly shifting protocols is as crucial to brand integrity as any financial cushion or direct state subsidy (Asadi et al., 2022). Through a TQM lens, these insights point to the importance of robust internal communication structures and a culture that values frontline feedback, ensuring that employees understand and co-own crisis strategies.

Epidemiologists have long warned that pandemics are not isolated phenomena but recurring challenges linked to global population density, mobility patterns, and zoonotic spillovers (Delardas et al., 2022). Accordingly, firms must view COVID-19 not as a one-off calamity but as part of a broader set of potential high-impact, low-frequency events that can cripple entire industries. Donthu and Gustafsson (2020) emphasise the importance of learning from historical precedents, such as the 1918 Spanish Flu or the 2003 SARS outbreak, while acknowledging that each new pathogen may carry unique modes of transmission, virulence, and socio-political ramifications. For the aviation sector, such recognition justifies the integration of pandemic-readiness into strategic planning, operational protocols, and leadership training, aligning with TQM's call for anticipatory quality and safety processes (Deming, 1993; Oakland, 2014).

COVID-19 has prompted reflection on corporate social responsibility and ethical business practices, reinforcing ideas that crises can trigger moral, social, and environmental recalibrations (He & Harris, 2020). Chesbrough (2020) discusses open innovation during the pandemic, including collaborations across universities, governments, and private firms to develop vaccines or address supply chain bottlenecks, as an example of crisis-induced synergy that can outlast the immediate emergency. Meanwhile, organisations that neglect employee welfare or undermine health guidelines risk reputational damage, eroding long-term stakeholder trust. TQM's core values focused on collaborative problem-solving, employee empowerment, and stakeholder well-being often align with an ethical pivot in business strategy, stressing that higher-level commitments to quality and safety can yield durable reputational benefits.

To summarise, the macro-level disruptions wrought by COVID-19 set the stage for a reimagining of managerial priorities. As the pandemic spurred extensive state interventions, heightened calls for resilience, spotlighted repeated large-scale crises, and forced ethical introspection, it also underscored the potential synergy between TQM's core principles and the emergent concept of adaptive, stakeholder-centered governance. Against this backdrop, the aviation industry's experience, particularly in contexts like Jordan, offers a microcosm of how these global shifts manifest within specific organisational and cultural settings.

2.3 Pre-COVID-19 Status of the Aviation Industry

The global aviation sector has long been susceptible to exogenous shocks, including major geopolitical events, terrorist attacks, economic recessions, and epidemics (Sehl, 2020). Each event, such as the Gulf War, the attacks of September 11 in 2001, and the 2008 financial crisis, temporarily reduced passenger demand and revenue streams, forcing airlines to adapt through capacity cuts, fleet downsizing, or mergers (Aman & Altass, 2021). In many cases, the industry exhibited a capacity to rebound, supported by strong consumer demand for air travel, deregulated market structures, and government interventions. For example, the SARS crises, led to improvements in health checks and cabin disinfection protocols (Wilder-Smith, 2006).

Pre-pandemic, the aviation sector was generally on an upward growth trajectory, driven by globalisation, rising middle-class incomes in emerging markets, and technological progress such as fuel-efficient aircraft and increasingly automated air-traffic management systems (Bidaisee & Sieunarine, 2021). Industry data reflected a steady annual passenger growth rate surpassing global GDP growth, supporting job creation for over 65 million people and generating around 3.6% of global GDP (Shah, 2021). Notably, ongoing pilot shortages, environmental concerns, and infrastructural strains tempered some optimism, but the sector largely saw itself as resilient due to historically short recovery times after downturns (Aman & Altass, 2021).

Leading up to 2019, several airlines began embracing digitalisation and, to a lesser extent, autonomous flight operations (Murray & Green, 2023). Innovations like e-ticketing, biometric

boarding, and advanced revenue-management algorithms were already reshaping the passenger experience and cost structures (Bidaisee & Sieunarine, 2021). Additionally, the looming pilot shortage, coupled with rising labour costs, led carriers such as United Airlines to invest in technology that could eventually enable partial autonomy or single-pilot operations in certain phases of flight. These moves reflected a broader tension between classical, hierarchy-bound operating models and more flexible, technology-driven paradigms that some aviation commentators liken to TQM's ethos of continuous, data-informed improvements (Oakland, 2011).

Despite these technological and process enhancements, airlines entered the COVID-19 crisis with inherent structural weaknesses, which were exposed by this pandemic:

1. *High Fixed Costs and Thin Margins:* The airline business model typically involves high upfront investment in aircraft, airport leases, maintenance, and training. Coupled with generally low or volatile operating margins, many airlines faced cash flow crises when travel demands plummeted in early 2020 (Dube, 2023).
2. *Regulatory Complexity:* Aviation operates in a labyrinthine regulatory environment, spanning international agreements (e.g., ICAO, IATA) and local safety guidelines. These structures, while necessary for maintaining safety standards, can slow adaptive change when emergencies demand swift operational shifts (Reason, 2016).
3. *Employee Vulnerabilities:* Unions, legacy pension obligations, or precarious short-term contracts can create employee-relations complexities. Prior to COVID-19, a labour shortage in certain categories (e.g., pilots, trained mechanics) coexisted with unsustainable working conditions for lower-skilled roles, highlighting inequalities and potential morale issues (Aman & Altass, 2021).
4. *Environmental Pressures:* Increasingly aware of climate change and carbon footprints, airlines began contending with public and regulatory scrutiny on sustainability metrics. Prior to the pandemic, discussions around 'flight shaming' and carbon-offset programs were on the rise, creating reputational risks that required more integrated strategic planning (Bidaisee & Sieunarine, 2021).

From a TQM standpoint, these weaknesses underscore a lack of comprehensive stakeholder alignment: while airlines typically design robust safety procedures, their approach to workforce engagement, cost management, and environmental stewardship has often been reactive or

short-term. Hence, the pandemic's arrival accentuated structural flaws in a system that, for all its routine resilience, had not fully internalised a continuous-improvement mindset across all business processes.

2.4 Significance of the Aviation Industry in Jordan

Jordan, a middle-income country in the Middle East, relies heavily on its services sector, including tourism, to drive economic growth (Alafeshat & Tanova, 2019). Air transport has been instrumental in facilitating trade, fostering diplomatic ties, and connecting Jordan to regional and global markets. Estimates suggest that the aviation and related tourism industries together support around 70,000 jobs in Jordan (IATA, 2017). Government efforts such as granting subsidies, entering foreign direct investment partnerships, and upgrading airport infrastructures, demonstrate national-level recognition of aviation's strategic value (Istaiteyeh, 2023).

Nevertheless, consistent capacity problems, such as congestion at Amman's Queen Alia International Airport, signal infrastructural shortfalls that could hamper longer-term expansion (Hana Naghawi, 2019). Furthermore, Jordan's geopolitical location, proximate to regional conflicts and unpredictable security environments, imposes additional operational constraints on airlines, often inflating insurance premiums and deterring certain high-value routes. In such conditions, TQM's emphasis on strategic alignment, systematic planning, and continuous operational refinements takes on heightened relevance, offering potential solutions to balance safety, efficiency, and customer experience (Wren & Bedeian, 2023).

The Jordanian aviation sector has historically been shaped by strong government involvement. Over recent decades, however, privatisation trends and open-skies agreements have introduced competitive pressure from Gulf carriers, such as Emirates, Etihad, and Qatar Airways, known for deep capital reserves and global hub networks (Williams, 2010). This intensifying competition has manifested in price wars on key routes, pressuring national airlines to refine cost structures, differentiate service offerings, and explore new revenue streams (Khraim, 2013a).

At the same time, government subsidies remain crucial during crises, most evident when COVID-19 grounded flights and threatened the survival of multiple carriers (Abate et al., 2020). Such interventions are double-edged: while they ensure short-term solvency, they can also reduce impetus for structural reforms. TQM's continuous-improvement approach potentially offers a balanced path, encouraging organisational autonomy and accountability even under partial state support.

Beyond structural factors, Jordan's sociocultural milieu influences managerial styles, employee relations, and acceptance of hierarchical authority. Scholars note that Jordan's national culture often foregrounds loyalty, respect for seniority, and an emphasis on communal responsibility (Al-Khawaldeh et al., 2024). In many cases, the military ethos, including discipline, clear command hierarchies, and protocol-driven processes extends into the civil aviation context. While beneficial for safety and procedural compliance, these norms may limit bottom-up innovation and flexible problem-solving (Khan & Law, 2018). TQM, with its participatory values, might require cultural adaptation to gain traction, emphasising leadership that respects tradition but still fosters open feedback channels, employee empowerment, and iterative improvements (Hofstede, 2001; Schein, 2002).

Jordan's aviation history and its adherence to international conventions, such as the Chicago Convention of 1944, underscore the country's commitment to global standards (ICAO, 1970). In addition, regional agreements like the Arab Air Transit Agreement (1963) reflect Jordan's broader involvement in Middle Eastern aviation policy, though practical implementation has often lagged behind rhetorical commitments (Khairy, 1970). These legal frameworks shape operational norms, establishing guidelines for safety, routes, and alliances. Any TQM initiative seeking to reform internal processes must therefore integrate with external regulatory obligations, illustrating how global, regional, and local contexts intersect in the Jordanian aviation sector.

Collectively, Jordan's aviation context showcases an industry pivotal to national development yet constrained by geopolitical fragility, infrastructural limitations, growing competition, and managerial cultures favouring hierarchy. Addressing these multi-layered challenges calls for a nuanced application of TQM principles, sensitive to local norms, mindful of global best practices, and flexible enough to navigate real-time crises such as COVID-19.

2.5 COVID-19 as a Non-Traditional Crisis

While aviation has weathered terrorism, wars, and financial downturns (Doganis, 2009), the COVID-19 pandemic introduced a biologically driven crisis that disrupted core assumptions about travel safety and consumer confidence (Ragab et al., 2020). Contrasted with hurricanes or economic recessions, COVID-19 lacked a clear ‘end date’, with waves of infections and variants extending uncertainties. As Rangel et al. (2022) note, the virus’s ‘invisibility’ complicated risk perception among passengers and employees alike. Given that TQM underscores risk management, worker well-being, and stakeholder communication, the pandemic offers a particularly challenging but revealing domain to test TQM’s crisis applicability.

COVID-19’s severity demanded orchestrated responses from numerous stakeholders: public health authorities, local governments, international regulatory bodies (ICAO, IATA), and, of course, airlines themselves (Weiss-Laxer et al., 2022). The effectiveness of this collective approach remains debatable; some scholars highlight success stories of swift policymaking and resource pooling, while others criticise fragmented guidelines and inconsistent enforcement (Brown et al., 2023). Within TQM frameworks, this underscores the need for cross-functional collaboration and an iterative feedback process. However, the practical feasibility of managed escalation, in which public agencies and private firms co-manage a rolling crisis, requires more empirical exploration (Devroop & Israel, 2021). The Jordanian airline sector, coordinating with the National Centre for Security and Crisis Management (NCSCM) and the Ministry of Health, faced a steep learning curve to align evolving health protocols with operational realities.

Despite calls labeling COVID-19 unprecedented, some commentators argue for a longer historical arc, noting that influenza pandemics (e.g., 1918, 1957, 1968) have periodically exacted heavy tolls (Phillips, 2020). However, the unprecedented element here lies in global interconnectedness: modern aviation networks can spread pathogens worldwide within days, intensifying the crisis’s scale. Furthermore, the aviation industry’s financial underpinnings heavily reliant on passenger volume, succumbed more drastically during COVID-19 than in earlier pandemics, revealing structural vulnerabilities (Ullah & Ferdous, 2022). Reassessing historical patterns thus enriches TQM with lessons on how continuous improvement models

must incorporate worst-case scenarios, expanded stakeholder dialogues, and scenario-based planning.

A non-trivial dimension of COVID-19 is how it accelerated digital transformation in business and governance. Lockdowns and contact restrictions spurred airlines to introduce contactless check-in, digital health passes, and remote working for many administrative roles (Grant & Wilson, 2022). The demands for data-driven decision-making, whether to forecast passenger loads or coordinate staff quarantines, sharpened. TQM's iterative approach could be harnessed to ensure these digital tools align with workforce readiness, regulatory compliance, and evolving passenger expectations.

By portraying COVID-19 as a non-traditional crisis shaped by biology, stakeholder multiplicity, historical lessons, and digital leaps, this section frames the pandemic as a unique stress-test for both conventional airline operations and more collaborative, quality-centric paradigms. It also offers a vantage point for how interpretivist analysis can uncover the organisational narratives, leadership dilemmas, and employee experiences that quantitative data might overlook.

2.6 Total Quality Management: Foundational Perspectives

TQM has been significantly shaped by the seminal work of W. Edwards Deming, Joseph Juran, Philip Crosby, and Kaoru Ishikawa (Crosby, 1979; Deming, 1986b; Ishikawa, 1985; Juran & Gryna, 1988). Although each of these thinkers emphasises a distinct dimension of quality, their collective insights foreground leadership commitment, systemic thinking, continuous improvement, and front-line engagement as indispensable elements of a truly quality-centric organisation (Oakland, 2014). Such principles gain particular importance in the aviation sector, which is characterised by heightened safety regulations, complex operational requirements, and, in the case of Jordan, a deeply rooted hierarchical ethos and susceptibility to external shocks (Al-Khawaldeh et al., 2024; O'Connell & Williams, 2010). The relevance of these gurus' contributions becomes especially salient in the face of crises such as COVID-19, which has introduced unprecedented operational volatility (Donthu & Gustafsson, 2020).

W. Edwards Deming is often credited with founding the modern philosophy of TQM, having introduced the Plan–Do–Check–Act cycle as a means of fostering iterative improvements and systematic problem-solving (Deming, 1986a). His emphasis on statistical process control and integrated organisational structures underscores the idea that minor inefficiencies in any one part of an airline’s operations can propagate rapidly and lead to major disruptions if not properly managed (Reason, 2016). In Jordan’s aviation sector, where flight routes, health protocols, and passenger behaviours can shift abruptly, Deming’s cycle offers a repeatable framework for evidence-based adaptation. Frequent rounds of planning, implementation, review, and recalibration help airlines mitigate the risks associated with uncertain pandemic regulations, as seen in the global decline in passenger volumes following COVID-19 travel restrictions (Sigala, 2020).

Joseph Juran’s contributions complement Deming’s systems-based approach by emphasising the role of strategic planning and managerial accountability (Juran & Gryna, 1988). His trilogy of Quality Planning, Quality Control, and Quality Improvement requires top management to integrate quality objectives into the organisation’s broader strategic vision (Juran, 1964). This emphasis proves invaluable in Jordan, where airlines must frequently negotiate external constraints such as governmental regulations, security concerns, and economic instabilities (Istaiteyeh, 2023; Khraim, 2013b). By placing final responsibility for quality at the highest executive levels, Juran’s framework enables a shift from short-term or purely tactical solutions toward a more structured approach that prioritises sustainable processes and resource allocation. His concept of the cost of poor quality clarifies the risk of accruing financial and reputational damages when training, maintenance, or workforce development are neglected for immediate cost savings (Juran, 1964).

Philip Crosby is well known for contending that ‘quality is free’, a provocative statement intended to illustrate how consistent standards and error prevention may eventually lower overall costs (Crosby, 1979). This argument challenges a prevailing assumption that quality drives up budgets and emphasises that the net effect of defect prevention is financial saving in the long run. It has particular currency in a context like Jordanian aviation, where limited resources and narrow margins can amplify organisational vulnerability during crises (Aman & Altass, 2021). By advocating a zero-defects philosophy, Crosby underscores the significance of developing a shared organisational mindset in which every employee, from senior managers to front-line staff, aims to reduce mistakes before they occur. In a highly regulated and safety-

critical sector such as aviation, this proactive orientation not only preserves operational stability but also reinforces passenger confidence, which is easily eroded by media scrutiny of safety lapses (Dube, 2023). Crosby's perspective thereby aligns with Jordan's cultural emphasis on communal responsibility, although it necessitates a cultural shift away from purely hierarchical control structures to a more team-based ethos (Khan & Law, 2018).

Kaoru Ishikawa's contributions are centred around grassroots participation and user-friendly analytical techniques (Ishikawa, 1985). His development of cause-and-effect diagrams, commonly known as fishbone diagrams, and his championing of quality circles have facilitated more inclusive forms of problem-solving. This localised and collective approach to identifying and addressing performance gaps matches the realities of Jordanian aviation, where employees at the ground level often possess vital knowledge about operational challenges but may be reluctant to challenge authority figures in top-down settings (Hofstede, 2001; Merritt & Helmreich, 1995). By formalising processes in which these front-line perspectives can be aired and acted upon, Ishikawa's methods encourage an environment of open communication and continuous improvement, which is especially relevant during a crisis like COVID-19 that demands rapid, informed responses. Where many organisational norms in Jordan discourage subordinate-led dialogue, the institution of quality circles offers an explicit channel for upward feedback, fostering agility and resilience in the face of fluctuating regulations and passenger anxieties (Muecklich et al., 2023).

Guru	Core Contributions and Ideas	Major Works	Relevance to the Jordanian Aviation Context
W. Edwards Deming	Recognised for introducing the Plan–Do–Check–Act cycle (Deming, 1986a) and for emphasising iterative, data-informed improvements that treat organisations as integrated systems (Reason, 2016). His 14 Points for Management underline the need to eliminate fear in the workplace, break down departmental barriers, and pursue leadership commitment to quality (Deming, 1993).	Out of the Crisis (Deming, 1986b). The New Economics (Deming, 1993).	Particularly pertinent during COVID-19, as the PDCA cycle guides Jordanian aviation sector in refining safety protocols and adapting rapidly to changing travel restrictions (Dube, 2023; Sigala, 2020). Deming’s holistic approach also highlights how collaborative crisis management can prevent minor operational failures from escalating into systemic disruptions in a sector governed by stringent regulations and passenger safety concerns (Reason, 2016).
Joseph Juran	Introduced the Quality Trilogy Quality Planning, Quality Control, and Quality Improvement. Placing ultimate responsibility for quality on top management (Juran & Gryna, 1988). Argued that strategic alignment of organisational goals and quality measures is essential for sustainable performance, urging leaders to track the cost of poor quality to illuminate hidden inefficiencies (Juran, 1964).	Managerial Breakthrough (Juran, 1964). Quality Control Handbook (Juran & Gryna, 1988).	In Jordan’s often hierarchical aviation industry, Juran’s insistence on managerial accountability can reduce reactive approaches to crisis management by embedding long-term planning in everyday decision-making (Istaiteyeh, 2023; Khraim, 2013b). This ensures that resource allocation, staff training, and maintenance protocols remain strategically consistent, even under sudden shifts in passenger demand or government interventions (Fedyk et al., 2022).
Philip Crosby	Advanced the notion that ‘quality is free’ by contending that preventive action ultimately lowers total costs (Crosby, 1979). Promoted a zero-defects philosophy designed to shift organisational culture toward error prevention and conformance to requirements, reinforcing the idea that quality	Quality Is Free (Crosby, 1979). Quality Without Tears	Offers a compelling rationale for Jordanian aviation sector to invest in rigorous training, standardised procedures, and robust safety measures, especially during a prolonged crisis such as COVID-19 (Aman & Altass, 2021). Crosby’s stance that prevention yields greater returns than corrective action resonates with Middle Eastern cultural emphases on communal responsibility and collective well-being, while

	should never be compromised by short-term financial pressures (Crosby, 1984).	(Crosby, 1984).	challenging traditionally top-down command structures to adopt more proactive quality management.
Kaoru Ishikawa	Advocated democratised quality control by popularising cause-and-effect diagrams (Ishikawa, 1985) and quality circles that enable frontline workers to identify, analyse, and solve recurring problems. Emphasised that broad access to quality tools fosters collaboration and encourages everyday problem-solving across all tiers of the organisation (Oakland, 2014).	What Is Total Quality Control? (Ishikawa, 1985).	In a Jordanian aviation sector marked by hierarchical norms, Ishikawa's method for frontline inclusion helps overcome barriers that discourage open dialogue (Hofstede, 2001; Merritt & Helmreich, 1995). Quality circles offer a structured channel for operational insights from cabin crew, ground staff, and technicians, ensuring that decisions on safety, scheduling, or customer service incorporate the valuable perspectives of those closest to daily operations (Muecklich et al., 2023).

Table 2 Overview of four TQM gurus and their core contributions.

These foundational theories lend themselves particularly well to crisis-adaptive and systemic approaches. Deming's holistic perspective aligns with contingency theory's stress on the need for organisations to modify their structures when faced with volatile environments (Donaldson, 1995). Juran's top management focus resonates with socio-technical systems theory, given the centrality of leadership decisions to how human and technical subsystems integrate (Pasmore, 1988). Crosby's prevention-first message offers a strategic blueprint for high-stakes industries seeking to avoid errors that can escalate costs or damage reputations (Crosby, 1979). Ishikawa's ground-up tactics further reinforce socio-technical principles by recognising the crucial relation between technological workflows and human ingenuity (Ishikawa, 1985). In an airline industry that is simultaneously grounded in compliance-driven routines and confronted by exogenous shocks such as COVID-19, the aggregate lessons from these TQM pioneers clarify how meaningful change must involve all levels of the organisation, be guided by robust leadership, and evolve through iterative reflection.

In the Jordanian context, where hierarchical leadership patterns often prevail (Al-Khawaldeh et al., 2024), harnessing the value of Deming's cyclical approach, Juran's planning-oriented framework, Crosby's cost-based rationale, and Ishikawa's participatory tools can require certain cultural adaptations. Yet, these adaptations do not negate the continuing relevance of TQM for non-traditional crises, particularly because thorough employee engagement, systematic alignment of objectives, and data-informed process controls are proven cornerstones of resilience in uncertain conditions (Verma & Gustafsson, 2020).

2.7 Human Factors in Aviation During Crises

Aviation's traditional stance on safety management often homed in on individual lapses, the 'bad apple' theory, treating errors as anomalies solvable via tighter supervision, standardised procedures, or additional training (Dismukes, 2010). This classical method aligns with hierarchical management, assuming top-down control as the optimal route to reduce risk. Yet as major accidents and near misses have shown, i.e., Tenerife in 1977 or the deep inquests following TWA Flight 800 in 1996, systemic factors often precede individual mistakes (Hudson, 1999; Reason, 2003).

From TQM's perspective, an overemphasis on individual blame stifles open communication and organisational learning (Argyris & Schön, 1997). Instead, TQM posits that systemic design, collaborative feedback loops, and leadership that fosters trust collectively build a safety culture. The pandemic, which mandated rapid changes in flight protocols, health guidelines, and staff rosters, further highlights the futility of command and control alone; employees needed situational awareness, real-time adaptability, and the psychological safety to report emerging problems without reprisal (Oakland, 2011).

Reason (1990) Swiss Cheese Model or the Generic Error Modeling System (GEMS) framework underscores that failures stem from latent organisational vulnerabilities such as misaligned incentives, flawed procedures, or communication gaps, rather than isolated acts of negligence. Over time, NASA, ICAO, and multiple national aviation authorities have embedded this system view into incident investigations. Yet actual adoption within corporate contexts remains varied, shaped by cost pressures, union negotiations, and managerial philosophies. Culture also matters: in settings where employee voice is culturally discouraged, even well-written safety guidelines may yield insufficient real-time compliance (Fried & Robinaugh, 2020).

COVID-19 amplified these tensions. Airlines in Jordan, for instance, had to incorporate new cleaning regimens, social distancing on board, and flexible scheduling for quarantined crew. Such tasks demanded not only management directives but also employee buy-in, local improvisation, and robust communication channels to uncover and fix loopholes. Socio-technical solutions, where technology, processes, and human autonomy converge proved more adaptable than purely top-down instructions (Muecklich et al., 2023). This synergy resonates strongly with TQM's notion that consistent, organisation-wide quality emerges from a balance of standardised best practices and decentralised learning feedback (Womack, 1996).

Aviation is well acquainted with how fatigue, stress, and communication breakdowns trigger operational mishaps (Dekker, 2017a). COVID-19 deepened these vulnerabilities: quarantines prolonged duty cycles for available crew, remote or hybrid training sessions introduced new complexities, and repeated flight cancellations hammered morale (Dube, 2023). Under TQM, managers are encouraged to see these frontline struggles not as a cost factor but as a barometer of broader organisational dysfunction. By systematically collecting employee feedback, setting

up a blame-free error-reporting system, and encouraging collaborative problem-solving, TQM's emphasis on employee engagement can mitigate the compounding effects of fatigue and uncertainty (Salas et al., 2018).

Classical methods, influenced by Taylorism, typically revolve around standard operating procedures and hierarchical controls (Taylor, 2004). While such models can deliver short-term consistency and clarity, they often struggle with unanticipated complexities or fast-evolving crises. In contrast, TQM frameworks invite iterative improvement, cross-functional team input, and employee empowerment, facilitating a culture where 'work as imagined' and 'work as done' can be reconciled through continuous reflection (Reason, 2016). In an industry as safety critical as aviation, ensuring that real-world practices reflect or surpass official procedures is vital, especially under high-pressure events like pandemics.

Hence, the broader shift toward systems-thinking and STST (Emery & Trist, 1960; Pasmore, 1988) complements TQM's impetus to integrate technical complexity with social dynamics. The Jordanian context, with its hierarchical biases and distinct cultural norms, further illuminates how a global crisis might reshape the relationship between top-down instructions and bottom-up ingenuity, revealing both the promise and pitfalls of TQM-based human factor strategies.

2.8 Operations Management in Crisis Context

Operations management (OM) traditionally focuses on designing, running, and improving production systems to achieve efficiency and quality (Skinner, 1974). Whether in manufacturing or service contexts, OM theories highlight the importance of process optimisation, resource allocation, and cost control (Tariq et al., 2021). Aviation offers a quintessential setting for OM research, with schedules, fleets, crew assignments, and maintenance protocols tightly integrated. Any disruption, including weather events, mechanical failures, or in this case a global pandemic, reverberates across a complex chain of subsystems (Varghese et al., 2021).

As Flory (2022) and Seddon (2000) argue, many operational failures stem from system design flaws rather than operational staff incompetence. In a stable environment, airlines might rely on routine flight schedules, standardised training, and linear supply chains. However, crises like COVID-19 question these assumptions, forcing rapid schedule modifications, untested health protocols, and unscripted financial measures (Dube, 2023). The concept of an open system, introduced by Emery (1959), underscores that aviation cannot isolate its operations from broader market forces, health mandates, and passenger sentiment.

Contemporary research points to intelligent automation (Coombs et al., 2020) and advanced analytics as levers for adaptive operations. For example, airline route planning may use real-time passenger demand data to determine which flights remain viable. Meanwhile, TQM principles emphasise that any technology adoption or advanced analytics must still align with employee readiness, clarity of roles, and continuous learning cycles. This synergy resonates with an interpretivist perspective, where technology is not simply ‘plugged in’ but socially constructed and negotiated among diverse stakeholders (Dale, 1997).

COVID-19 vividly illustrated the vulnerabilities of global supply chains and just-in-time processes, once lauded for their efficiency (Hitt et al., 1998). Airlines reliant on quick turnaround times, dense passenger loads, and streamlined staffing suddenly found these setups unsustainable. TQM invites a reexamination of such paradigms, encouraging a more holistic approach that values slack resources, redundancy, and flexible cross-training in anticipation of unpredictable surges in sick leave or passenger restrictions.

Moreover, classical process management emphasises uniformity, while TQM allows for strategic adaptability if grounded in robust employee involvement (Kozioł-Nadolna & Beyer, 2021). Indeed, where strictly top-down approaches limit staff decision-making, crises can paralyse operations. By contrast, a TQM environment fosters decentralised authority, empowering frontline employees to make local optimisations, such as reorganising boarding procedures or adjusting in-flight service to match updated safety guidelines (Radnor & Boaden, 2004).

Central to the discussion is the tension between traditional hierarchical management, with supervisors tightly controlling tasks, and new models that champion team autonomy (Womack, 1996). In the Jordanian context, a hierarchical approach is often justified by safety imperatives

and regulatory constraints. Nevertheless, TQM literature (Keng Boon et al., 2005; Usilaner, 1993) demonstrates how excessive top-down control can erode frontline engagement and hamper continuous improvement efforts. As the pandemic required frequent, context-specific decisions, like how to space passengers in transit lounges or quickly re-staff flights, organisational cultures that recognised and trusted frontline expertise often adapted faster (Dorsey, 2023).

However, moving too rapidly toward autonomous teams, especially under crisis pressures, can introduce role ambiguity, communication gaps, and confusion about accountability (Moe, 2021). TQM's structured improvement cycles (Plan–Do–Check–Act) can mitigate these risks by providing a framework for reflection, guidance, and boundary-setting, ensuring that autonomy does not devolve into chaos (Deming, 1993). Determining the 'right' level of autonomy likely depends on each airline's cultural readiness, leadership training, and historical approach to safety management.

2.9 Contingency Theory in Crisis Management

Contingency theory posits that there is no single best way to organise; rather, effective structures and processes hinge on environmental conditions (Donaldson, 1995). In stable markets, mechanistic forms such as centralised decision-making and rigid hierarchies may suffice, whereas volatile environments require 'organic' forms characterised by decentralised authority, fluid roles, and robust communication channels (Burns, 1961). For the aviation sector, COVID-19 magnified environmental volatility, travel restrictions could shift weekly, with passenger volumes unpredictable. This dynamic environment put heightened demands on airline management to pivot from top-down procedures to more adaptive, cross-functional strategies. Under contingency theory, organisations that align internal capabilities with external volatility exhibit superior performance (Child, 1984).

Within crisis episodes, the 'fit' logic is not static but must be continuously reassessed. TQM's PDCA routines provide the micro-level mechanism for this reassessment, while STST ensures that any structural move toward more organic coordination is matched by appropriate skills, tools, and workflow redesign; without such coupling, structural shifts generate the very misfits

and work-as-imagined/work-as-done gaps highlighted in safety research (Deming, 1993; Donaldson, 1995; Oakland, 2014; Reason, 2016).

In crisis, alignment may entail reconfiguring management layers for quicker decision-making, building flexible rosters for flight crews, or adopting new digital tools for advanced analytics (Yusuf et al., 2023). TQM complements this adaptive stance by foregrounding iterative improvements, workforce empowerment, and consistent feedback (Deming, 1993). Jordan's airlines, operating in a culturally hierarchical context, face the challenge of adopting flexible structures without undermining safety or flouting regulatory mandates. Thus, contingency theory points to the possibility of designing hybrid management systems, leveraging TQM's decentralised ethos for frontline problem-solving but retaining centralised oversight for safety-critical tasks.

Donaldson (1995) and Child (1984) warn that structural misfits, like rigid hierarchies in fast-changing markets can erode performance, hamper morale, and lead to delayed or poor-quality decisions. The pandemic exemplified such risks: airlines with bureaucratic processes found it harder to expedite new health protocols or coordinate staff quarantines, resulting in confusion and inefficiencies (Salah et al., 2023). This resonates with TQM's stance on the penalties of poor organisational design (Child, 1984), which include morale breakdown, cost overruns, and suboptimal service quality.

Although contingency theory encourages managers to adjust organisational structures to external changes, cultural norms and historical legacies, particularly in Jordan may inhibit radical redesign (Ammirato et al., 2023). Stakeholders might perceive too much decentralisation as chaotic or unsafe. Meanwhile, bridging TQM's empowerment ethos with the demands of a high-risk industry also requires comprehensive training, trust-building, and mindful change management (Burnes, 2004; Lewin, 1947). The synergy of contingency theory and TQM thus underscores that adaptive success depends not solely on structural geometry but also on leadership skill in orchestrating cultural buy-in.

To summarise, contingency theory provides a conceptual scaffold for explaining why certain organisational designs succeed or fail amid COVID-19's volatility. When integrated with TQM's systemic improvement and workforce engagement, it becomes a powerful lens through

which to interpret how airlines in Jordan might better align management practices with the evolving demands of a pandemic-influenced marketplace.

2.10 Socio-Technical Systems Theory (STST) in Aviation

Socio-technical systems theory (STST), developed by Emery (1959), contends that optimal organisational performance arises from harmonising the social subsystem (people, culture, relationships) with the technical subsystem (tools, processes, technology). In high-stakes industries, the relation between human operators and complex technical systems is often critical to safety and efficiency (Pasmore, 1988). For airlines, this covers everything from cockpit automation to ground-handling processes, all embedded in a culture that shapes how employees handle disruptions (Reason, 2016).

Central to STST is the concept of ‘internal fit’, whereby social and technical elements mutually reinforce each other (Emery, 1959). In an airline setting, flight-crew training cannot be isolated from the design of cockpit instrumentation, nor can passenger service protocols be separated from the digital check-in infrastructure or passenger-flow analytics. Achieving ‘internal fit’ means equipping staff with skills, authority, and organisational support to adapt tasks to local conditions without sacrificing overarching safety or quality standards (Pasmore et al., 2019). TQM buttresses this synergy by insisting on continuous improvement cycles that integrate frontliner feedback (Juran, 2010).

In practice, STST’s ‘internal fit’ becomes actionable in crises when linked to TQM routines that surface local knowledge and stabilise emergent procedures, and when calibrated by contingency decisions about who decides, how quickly, and at what level. Self-managed teams can be empowered for service and scheduling adaptations, while safety-critical decisions remain centralised under regulatory oversight an integrated design that shortens the loop between sense-making and response without compromising safety (Deming, 1986a; Donaldson, 1995; Pasmore, 1988; Radnor & Boaden, 2004; Reason, 2016).

COVID-19 has tested these socio-technical interfaces, imposing new sanitation protocols, remote collaboration needs, and dynamic flight cancellations. Many airlines pivoted quickly,

but systemic friction, such as staff confusion over changing safety guidelines or inadequate digital tools for rescheduling flights, caused breakdowns. STST frames these breakdowns as an imbalance between social readiness (e.g., staff willingness, sense of trust, leadership clarity) and technical complexity (e.g., new software, reconfigured cabin layouts). TQM's inclusive orientation can help realign these elements by encouraging problem-solving teams, staff training, and iterative refinement (Hackman, 1980; Oakland, 2014).

One hallmark of STST is its preference for whole tasks, multi-skilling, and self-managed teams. In aviation, this might translate into cross-trained staff capable of filling multiple roles, particularly valuable when absenteeism rises during a health crisis (Salas et al., 2018). However, implementing such STST-based designs requires structural changes, leadership buy-in, and cultural shifts toward decentralised authority. Jordanian carriers, already operating under hierarchical paradigms, may find it challenging to adopt new teaming structures swiftly. TQM interventions can mitigate these hurdles by systematically introducing pilot projects, building trust, and ensuring that new roles do not undermine safety protocols (Reason, 2016).

STST is highly relevant for non-traditional crises like COVID-19 because it emphasises adaptability and resilience. In this view, resilience arises not just from redundancy in technical systems but from employees' capacity to reconfigure tasks amid chaos (Pasmore et al., 2019). STST's notion of a 'learning organisation' resonates with TQM's iterative improvement cycles, fostering a culture where employees continuously refine practices based on real-time data and local insights. By exploring the specific socio-technical challenges of the Jordanian aviation sector, this thesis aims to uncover how TQM might strengthen organisational resilience under protracted uncertainty.

2.11 Operational Changes and Adaptations During COVID-19

At the onset of COVID-19, airlines worldwide faced an existential threat (Suau-Sanchez et al., 2020). Passenger volumes plummeted, leading carriers to park large portions of their fleets, furlough staff, and slash overheads (Coombs et al., 2020). Many pivoted to cargo operations as a short-term financial lifeline. Others engaged with health authorities to set up repatriation flights, requiring extraordinary coordination and risk assessment. TQM literature would view

these abrupt transitions as ‘firefighting’ responses unless integrated into a structured framework of problem identification, root-cause analysis, and staff-driven improvements (Oakland, 2014). Indeed, some carriers, especially smaller or financially fragile ones, struggled to systematically learn from each adaptation.

Contactless check-in kiosks, digital health passports, remote work for administrative teams, and advanced scenario-modeling became mainstream. As flight cancellations, regulatory notices, and changing passenger behaviours demanded near-real-time decision-making, data analytics emerged as a crucial enabler (Grant & Wilson, 2022). TQM logic underscores the importance of standardising data protocols, ensuring the staff are trained to interpret analytics, and embedding a culture that values data-driven experimentation (Deming, 1993). However, purely technical solutions that ignore staff acceptance or fail to incorporate frontline knowledge risk overshoot or underuse.

Operating under pandemic conditions introduced new layers of complexity, such as on-board social distancing, elimination of meal services, and personal protective equipment (PPE) guidelines. Crew schedules also required greater flexibility to accommodate quarantine or travel restrictions, occasionally leading to crew fatigue or morale issues (Moe et al., 2021). TQM-based transformations emphasise staff consultation in designing these new routines, using a systematic approach to measure effectiveness, including: customer feedback, incident rates, cost–benefit analyses, to refine protocols iteratively (Scholtes, 1998).

Amid these upheavals, the debate about hierarchical vs. autonomous teams resurfaced. Some airlines capitalised on multi-functional ‘crisis squads’ that combined flight crew, operations managers, and IT specialists to solve immediate problems (Budd et al., 2020). This quasi-autonomous approach aligns with TQM’s cross-functional teams. Conversely, carriers steeped in rigid hierarchies faced bottlenecks and slower responses. The difference in results highlights how classical command structures can falter in emergent crises, while TQM-driven frameworks promote agility, provided adequate role clarity and leadership support exist (Radnor & Boaden, 2004).

Drawing upon Keng Boon et al. (2005) and Eskildson (1994), the ‘soft’ aspects of TQM-like engagement, leadership, and culture, are pivotal for sustained transformations. As COVID-19 lengthened from weeks to months to years, short-term morale boosters gave way to deeper

employee exhaustion and anxiety (Al-Ababneh et al., 2022). Maintaining cohesion required empathetic leadership, transparent communication of financial or operational uncertainties, and inclusive problem-solving sessions. Where these elements were lacking, staff disenchantment grew, and service quality faltered (Shah et al., 2023). The Jordanian experience, in particular, underscores how local cultural norms interplay with these ‘soft’ TQM strategies, reinforcing or impeding their adoption.

2.12 Effective Leadership and Employee Engagement

Elton Mayo’s foundational work shifted management science toward a human-centered focus, advocating that employee morale, recognition, and social integration are as important to productivity as technical process optimisation (Mayo, 1930). Deming (1993) later integrated these insights with quality-focused philosophies, championing continuous improvement, reduction of fear, and worker empowerment. Contemporary scholars like Mazzetti and Schaufeli (2022) confirm that engaged, supported workers exhibit higher resilience and innovative capacity, attributes vital for crisis adaptation. In the Jordanian aviation environment, leadership styles that incorporate respect for hierarchical traditions while fostering supportive interactions can help employees feel valued (Al-Khawaldeh et al., 2024).

A wealth of leadership literature distinguishes between transactional reward-based exchanges and transformational vision-led, inspirational approaches (Bass & Avolio, 1994). In safety-critical environments, a transformational style can be especially beneficial, fostering team synergy and a sense of shared mission (Bradley & Alamo-Pastrana, 2022). The TQM ethos aligns more with transformational leadership, leaders encourage risk-free feedback, champion cross-functional learning, and model continuous improvement. Transactional aspects, such as performance-based pay, remain relevant but must be balanced with relationship-building and empowerment. Crisis contexts like COVID-19 intensify the need for leaders who can rapidly pivot strategies while maintaining trust (He & Harris, 2020).

Studies show that in uncertain or complex tasks, autonomous or semi-autonomous teams can outperform strictly supervised teams, provided they have clear goals, resources, and supportive leadership (Bakker & Albrecht, 2018). TQM frameworks similarly highlight how cross-

functional and self-managed teams drive continuous improvement by capitalising on diverse perspectives (Scholtes, 1998). However, autonomy without accountability or well-defined boundaries can lead to friction and diluted responsibility (Lucas, 1998). In a crisis-laden environment, top leadership must calibrate the extent of autonomy, ensuring staff neither feel abandoned nor micromanaged (Druskat & Wheeler, 2004). This balance is especially delicate in Jordan, where employees may be unaccustomed to voicing opinions that challenge hierarchical protocols (Khan & Law, 2018).

Leadership style profoundly shapes organisational culture, particularly in high-stakes fields like aviation. If leaders penalise errors severely, employees withhold concerns, stifling the open dialogue TQM depends on (Reason, 2016). Alternatively, if leaders only pay ‘lip service’ to quality or safety, staff quickly realise that organisational rhetoric outruns actual practice. TQM scholars stress that leaders must actively demonstrate commitment through supportive policies, visible engagement in quality circles, and transparent resource allocation (Deming, 1986a). The Jordanian experience likely exemplifies these dynamics, where formal statements about safety or quality must intersect with daily supervisory practices to truly influence employee perceptions.

As the pandemic tested aviation at multiple levels, leadership and employee engagement emerged as a lever for either survival or failure. In TQM parlance, effective leadership fosters a culture of shared accountability and continuous learning, allowing teams to respond nimbly to evolving mandates. Conversely, autocratic or indifferent leadership sows distrust and undermines the collaborative ethos needed to handle a crisis that demands collective, agile solutions. The interpretivist approach of this thesis will explore how leadership in Jordan’s airlines navigated these tensions, revealing how TQM-based or alternative frameworks influenced workforce resilience under COVID-19.

2.13 Organisational Culture and Employee Perception

Organisational culture comprises shared beliefs, values, and behavioural norms that evolve over time, shaped by history, leadership, and external environments (Schein, 2002). Hofstede (2001) distinguishes between ‘national culture’ influenced by societal traditions and

‘organisational culture’ molded by leadership philosophies and strategic objectives. In Jordan, particular emphasis on authority, communal responsibility, and loyalty can significantly impact how employees perceive top-down directives and whether they feel free to question or innovate (Al-Khawaldeh et al., 2024). TQM’s success often hinges on an open, improvement-oriented culture, raising the question of how Jordan’s cultural context might modulate TQM strategies in aviation.

Historically, Jordan’s civil aviation has carried over organisational customs from military models steeped in discipline and hierarchical command structures (Al-Hyari, 2013; Khan & Law, 2018). On the positive side, this fosters disciplined compliance with safety rules and a readiness to follow official instructions. On the negative side, it may dampen frontline initiatives or the free exchange of error reports if employees fear retribution (Merritt & Helmreich, 1995). Effective TQM adaptation requires that leaders carefully integrate rigorous safety standards with open channels for staff feedback, bridging the gap between formal authority and collaborative problem-solving.

Jordanian aviation organisations also employ foreign staff, including pilots or flight attendants from various cultural backgrounds, adding complexity to internal cultures (Petrovic, 2023). Cultural diversity can enhance creativity and resilience but can also exacerbate miscommunication if staff bring different assumptions about hierarchy, collectivism, or risk tolerance (Li & van Knippenberg, 2021). TQM emphasises standardised quality principles, but these must be sensitively conveyed in culturally diverse settings, ensuring that shared goals do not override the nuances of interpersonal relations.

Kennedy and Bewley (2013) highlight how Jordan’s national heritage, including the role of aerial archaeology projects, tangentially influenced the sector’s development. The result is a cultural tapestry where aviation is seen not merely as functional transport but as an extension of national pride and identity. This identity factor can galvanise staff loyalty but also introduce political or nationalistic overtones into internal decision-making. TQM aims to align employee motivations with quality outcomes, an alignment that can leverage these identity narratives, provided they do not overshadow objective performance metrics (Gerhardt et al., 2023).

In principle, TQM benefits from collectivist values, given that a sense of group harmony can encourage teamwork and shared responsibility (Mehta & Shah, 2005). However, TQM’s

empowerment rhetoric can clash with paternalistic leadership if managers are reluctant to concede decision-making power. The question, then, is whether the Jordanian aviation sector can adapt TQM in ways that harness local cultural strengths, discipline, loyalty, collective ethos, while counteracting potential downsides, such as risk aversion or reluctance to challenge superiors.

As the subsequent methodology chapter will show, interpretivist research enables a fine-grained look at how these cultural and historical legacies intersect with day-to-day operational realities. By examining staff narratives, leadership approaches, and organisational documents, the thesis aims to elucidate how TQM-based ‘soft culture’ initiatives can realistically embed themselves in Jordan’s aviation sector, especially under the acute stressor of a pandemic.

2.14 Synthesis: TQM, Crisis Adaptation, and the Jordanian Aviation Context

TQM can be viewed as a cohesive philosophy integrating continuous improvement, leadership commitment, employee empowerment, and customer-focused metrics (Crosby, 1979; Deming, 1986a; Juran & Gryna, 1988). The pandemic scenario spotlights TQM’s relevance, as organisations must pivot swiftly while maintaining quality and safety. TQM also dovetails with interpretivist methodologies, as it underscores the subjective dimensions of culture, leadership, and collective learning.

The concurrency of contingency theory and STST with TQM reveals a cross-theoretical synergy. Contingency theory provides the structural logic, explaining how organisational forms must adapt to external volatility, while STST underscores the internal alignment of social and technical components. TQM merges these insights with explicit process-improvement cycles and stakeholder-focused measures, ensuring that structural changes remain grounded in actual performance feedback and staff engagement. This multi-frame perspective supports a holistic analysis of how Jordanian aviation organisations might reorganise in response to crisis conditions (Donaldson, 1995; Emery & Trist, 1960; Pasmore, 1988).

The integrated framing is warranted because each lens resolves a different class of problems that becomes acute under crisis. Contingency theory specifies how organisational forms must

be matched to environmental volatility, requiring timely shifts between more mechanistic and more organic arrangements as conditions change (Burns, 1961; Child, 1984; Donaldson, 1995). STST ensures that such structural choices are viable by aligning the social subsystem (roles, skills, culture) with the technical subsystem (procedures, tools, information flows), thereby achieving ‘internal fit’ (Emery, 1959; Pasmore, 1988; Pasmore et al., 2019). TQM provides the routines that translate these design choices into day-to-day action through iterative learning (e.g., PDCA), error-reporting, and participative problem-solving, which are essential when protocols change frequently in a biologically driven, multi-actor crisis (Deming, 1986a; Ragab et al., 2020; Rangel et al., 2022; Weiss-Laxer et al., 2022).

Operationally, the integration works as a micro–macro coupling. At the micro level, TQM’s PDCA cycles and quality-circle practices surface frontline knowledge, generate quick experiments, and stabilise emergent routines (Deming, 1986a; Oakland, 2014; Radnor & Boaden, 2004). These micro-insights then inform macro choices about structure and coordination predicted by contingency theory (e.g., when to decentralise rostering decisions or create cross-functional ‘crisis squads’), while STST guides the accompanying socio-technical redesign (e.g., re-allocating tasks, re-skilling, or adapting digital tools) so that ‘work as imagined’ and ‘work as done’ converge (Emery, 1959; Pasmore, 1988; Reason, 2016; Womack, 1996)

The approach is also complementary under aviation’s boundary conditions. In safety-critical tasks, centralised authority and standardisation remain non-negotiable, but adjacent service and scheduling activities can be delegated to semi-autonomous teams to reduce response latency a balance that contingency theory legitimises and TQM stabilises through standard work and feedback loops (Deming, 1993; Donaldson, 1995; Oakland, 2014). STST adds the requirement to equip teams with the skills, tools, and authority commensurate with their remit; otherwise, decentralisation without joint optimisation simply reproduces failure at a lower level (Pasmore, 1988; Reason, 2016). In the Jordanian context, where hierarchical norms and deference to authority are culturally salient, empowerment must be carefully bounded and explicitly trained to preserve safety and procedural integrity (Hofstede, 2001; Schein, 2002).

Crises unfold over time. Early acute phases typically require tighter centralisation to establish safe baselines, whereas stabilisation and recovery phases benefit from wider participation to adapt processes and rebuild trust. TQM’s iterative learning supports these shifts; contingency

theory explains when and why to re-tune structural levers; and STST keeps the social and technical elements aligned as practices ‘refreeze’ into new standards (Burns, 1961; Deming, 1993; Lewin, 1947). This temporal layering clarifies why single-theory prescriptions are insufficient in pandemic conditions and why a coupled TQM, Contingency, and STST frame is proportionate to the complexity faced by Jordanian airlines (Oakland, 2014; Reason, 2016).

TQM’s participatory leanings may not naturally resonate in contexts used to hierarchical power dynamics, though Jordan’s communal orientation could facilitate collaboration if skillfully harnessed (Hofstede, 2001). Managerial willingness to share decision-making authority, train and trust employees, and handle constructive dissent will likely shape TQM’s success. Additionally, local norms around conflict avoidance or strong loyalty to superiors might complicate open feedback loops. The synergy of TQM and local culture thus hinges on carefully modulated leadership approaches, potentially bridging mainstream TQM frameworks with Jordan’s national and organisational cultures (Schuit & Scott, 2021).

Another recurrent thread is the centrality of leadership in orchestrating crisis response. Whether leaning toward transformational or situationally adaptive styles, leaders in the Jordanian aviation context must internalise TQM’s ‘soft’ dimension, listening to staff, encouraging safe spaces for problem reporting, balancing accountability with empathy. As the pandemic extends stress horizons, employees need consistent reassurance, clarity about new procedures, and genuine involvement in problem-solving (Rafferty & Tapsell, 2001). Absent these, TQM devolves into procedural checklists rather than a living, resilient framework. Table 3 consolidates the argument that structural agility (contingency) must be enacted through disciplined learning routines (TQM) and made socio-technically viable (STST), especially under safety and cultural constraints characteristic of Jordanian aviation (Deming, 1986a; Donaldson, 1995; Hofstede, 2001; Oakland, 2014; Reason, 2016; Schein, 2002).

Theory	Crisis-relevant focus	Primary mechanisms in this thesis	Boundary conditions in aviation (Jordan)	Complementarity with other lenses
TQM	Rapid learning and stabilisation of new practices amid volatility.	PDCA cycles; quality circles; blame-free error reporting; standard work with iterative refinement (Deming, 1993; Deming, 1986a; Oakland, 2014).	High safety salience requires standardisation; hierarchical expectations may suppress voice without explicit leadership support (Hofstede, 2001; Schein, 2002).	Operationalises contingency-driven structural choices; supplies routines that enact STST's joint optimisation.
Contingency Theory	External fit between structure and environmental turbulence.	Calibrating centralisation/decentralisation; temporary cross-functional teams; shorter decision cycles (Donaldson, 1995).	Regulatory oversight limits discretion in safety-critical domains; decentralisation must be bounded and trained.	Directs <i>where</i> flexibility is required; TQM shows <i>how</i> to deliver it; STST checks socio-technical viability.
STST	Internal fit of social and technical subsystems.	Multi-skilling; role redesign; alignment of tools, workflows, and culture; whole tasks (Emery, 1959; Pasmore, 1988; Pasmore et al., 2019).	Digital readiness and skill profiles constrain feasible redesigns; trust and psychological safety shape uptake (Reason, 2016).	Ensures changes prescribed by contingency and enacted via TQM do not create new misfits.

Table 3 Integration map linking TQM, Contingency Theory, and STST under crisis conditions.

In sum, the integration operates through three coupled mechanisms. First, a TQM procedural mechanism maintains improvement discipline under time pressure by accelerating PDCA cycles and keeping standard work visible and iterative; this sustains learning despite frequent protocol shifts (Deming, 1986a; Oakland, 2014). Second, a contingency mechanism matches structural choices to volatility tightening coordination and decision rights in acute phases, then relaxing them to restore participation and adaptability during stabilisation and recovery (Burns, 1961; Child, 1984; Donaldson, 1995). Third, an STS mechanism safeguards human performance by aligning tools, tasks, and roles with the emergent design, ensuring that ‘work as imagined’ and ‘work as done’ converge as procedures evolve (Pasmore, 1988; Reason, 2016; Womack, 1996). Together, these mechanisms explain how organisations can change quickly without degrading safety or trust.

The complementarity is strongest in safety-critical contexts such as aviation. Contingency theory legitimises bounded decentralisation where time-critical service interactions occur; TQM then stabilises those delegated domains through standard work and feedback loops; and STS ensures that reallocations of responsibility are matched by commensurate skills, tools, and authority (Deming, 1993; Donaldson, 1995; Pasmore, 1988). In the Jordanian setting, cultural norms of hierarchy mean empowerment must be trained, time-boxed, and scaffolded to preserve procedural integrity; leaders must frame participation as a disciplined component of safety rather than a challenge to authority (Hofstede, 2001; Schein, 2002)

Finally, the integration is phase-contingent. During acute disruption, central coordination creates safe baselines while TQM shortens ‘Plan/Do’ and protects ‘Check/Act’ through brief debriefs and micro-audits; as uncertainty declines, decision latitude widens and STS redesign consolidates new routines, thereby rebuilding trust. This logic pre-figures the thesis’s Crisis-Responsive TQM (CRTQM) in Chapter 5, where accelerated PDCA, contingency-triggered playbooks, and STS guardrails are combined into a deployable model for crisis conditions (Deming, 1993; Oakland, 2014; Reason, 2016)

Importantly, several gaps in the literature have been identified, including:

While numerous studies address TQM in manufacturing or stable service contexts (Keng Boon et al., 2005; Oakland, 2014), fewer explore TQM's application in crisis conditions for heavily regulated, safety-critical industries like aviation. Even fewer examine cultural-specific influences that might facilitate or hinder TQM adoption in Middle Eastern contexts. The relation between hierarchical, discipline-based norms (often associated with the Jordanian or broader Arab management style) and TQM's collaborative ethos requires deeper interpretivist analysis. Additionally, while general contingency theory and STST scholarship underscore the value of adaptive organisational forms, the Jordanian aviation experience under COVID-19 remains under-researched, specifically regarding how leadership, culture, and human factors collectively evolve.

This lacuna justifies the interpretivist, case-study approach employed in the present thesis. By examining the Jordanian aviation market and other sector actors, the research aims to uncover the lived realities behind policy documents, official statements, and academic frameworks. Through an in-depth qualitative lens, the study will illuminate how TQM resonates (or fails to resonate) with staff and managers under crisis pressure, how local cultural norms shape organisational responses, and how airline operations can be recalibrated to embed resilience in the face of ongoing and future disruptions.

This literature review has traversed multiple disciplinary streams, including crisis management, human factors, organisational culture, contingency theory, STST, and TQM to build a conceptual scaffolding for analysing how Jordanian aviation organisations navigate the COVID-19 pandemic. By framing COVID-19 as a non-traditional crisis, the discussion highlights unique stressors that test the viability of classical hierarchical controls and underscore the potential value of participatory, quality-driven frameworks. Meanwhile, local cultural dynamics in Jordan, including the imprint of military values and hierarchical traditions, either challenge or complement TQM's ethos, depending on how leadership mediates these influences.

Critical themes to be examined include:

- Resilience and Stakeholder Engagement: COVID-19's macroeconomic consequences foreground resilience as a core strategic aim, dovetailing with TQM's emphasis on continuous stakeholder involvement and iterative learning.
- Human Factors and Safety Culture: The industry's historical reliance on top-down error management is increasingly replaced by system-oriented views that TQM and STST advocate, spotlighting open communication and employee empowerment as prerequisites for high reliability.
- Contingency and Structural Adaptation: Rapid environmental shifts push airlines to adopt more flexible organisational designs, prompting synergy with TQM's push for incremental improvement cycles. However, local cultural norms can accelerate or impede these realignments.
- Leadership and Culture: The tension between hierarchical management systems and TQM-inspired autonomy remains central. In the Jordanian context, understanding how leaders reconcile paternalistic traditions with the demands of a crisis can reveal key success or failure factors for TQM-based interventions.
- Underexplored Research Gap: Scholarly treatments of TQM in the aviation sector often focus on stable conditions or Western contexts; studies rarely integrate a Middle Eastern lens, crisis conditions, and an interpretivist methodology. This gap underwrites the need for an in-depth qualitative exploration of how Jordanian aviation organisations actualise or resist TQM principles when upended by COVID-19.

Subsequent chapters in this thesis will detail the interpretivist paradigm and case-study design used to investigate these dynamics in Jordanian aviation sector. Through semi-structured interviews, document analyses, and thematic coding, the research will attempt to distill how TQM, STST, and contingency theory collectively inform or deviate from real-world organisational practices under crisis, thereby offering both academic and managerial insights.

2.15 Chapter Summary

This chapter investigates how TQM principles, alongside key theoretical constructs such as contingency theory (Donaldson, 1995) and STST (Emery, 1959), can enhance the resilience of the Jordanian aviation industry when facing the unprecedented disruptions caused by the COVID-19 pandemic. It opens by outlining the wide-ranging economic repercussions of COVID-19, drawing on Martin et al. (2023) and Donthu and Gustafsson (2020) to demonstrate how public health emergencies can trigger global recessions and destabilise industries with extensive supply chains, such as commercial aviation. Government interventions, including direct financial support and re-nationalisation of airlines (Sigala, 2020), altered competitive dynamics and amplified debates on transparency, stakeholder engagement, and continuous improvement, all of which are central concerns in TQM frameworks (Crosby, 1979; Deming, 1986a; Juran & Gryna, 1988).

The discussion then shifts to the pre-pandemic status of the aviation industry, emphasising its capacity to adapt to events such as the global financial crisis and regional conflicts, yet highlighting how COVID-19's scale and longevity revealed structural weaknesses that were not as evident in earlier disruptions. In Jordan, the aviation sector plays a significant role in economic development and tourism, but infrastructural deficits and overcrowded facilities have raised urgent questions about strategic planning and operational stability (Alafeshat & Tanova, 2019; Istaiteyeh, 2023). Consequently, this portion of the chapter lays bare the industry's ongoing tension between capacity constraints and the necessity for modernisation, issues that serve as a backdrop to the arguments about how TQM might foster greater resilience. By reviewing the historical evolution of Jordanian aviation organisations, the text situates organisational practices within a broader narrative of geopolitical volatility and frequent leadership changes, highlighting why agility and strong internal processes are vital.

Subsequent sections recast COVID-19 as a non-traditional crisis rooted in a biological threat whose severity and unpredictability far exceed previous health emergencies. Referencing Rangel et al. (2022) and Ragab et al. (2020), the text underscores the pandemic's unusual characteristics for aviation, which depends on open borders and consistent passenger movement. This accentuates the need for flexibility in leadership and workforce management, drawing parallels with contingency theory's insistence that organisations must align their structures with fluctuating external conditions (Burns, 1961; Child, 1984). It also invokes STST

(Emery, 1959; Pasmore, 1988) to argue that crisis responses often fail if they neglect either the human element or the technical frameworks that sustain aviation operations.

Attention then turns to human factors, focusing on leadership, communication, and error management. Building on Reason (1990), the text critiques the traditional tendency to regard errors as isolated failures, emphasising TQM's view that systemic flaws necessitate continuous improvement and collaborative decision-making. Deming (1986b) principle of employee involvement, for instance, aligns with Emery (1959) assertion that balancing social and technical aspects is critical for long-term effectiveness. This argument resonates with Mayo's work on human relations, highlighting that supportive leadership and positive social dynamics bolster a more resilient culture in high-risk, regulated industries such as aviation. The text contends that top-down, blame-oriented management structures undermine trust and stifle knowledge sharing, ultimately reducing the sector's capacity to respond proactively in non-traditional crises.

The review further explores the tension between bureaucratic management systems, rooted in Taylorism (Taylor, 2004), and contemporary frameworks where autonomous teams, empowered employees, and two-way communication (Mehta & Shah, 2005) are seen as indispensable for operational agility. This debate is situated within the Jordanian context, where long-standing military values, hierarchical norms, and regulatory stringencies coexist with growing calls for innovation and service excellence (Hofstede, 2001; Schein, 2002).

Studies by Burnes (2004) shed light on how culture and leadership can either inhibit or promote the principles of TQM, especially during periods of market volatility and consumer anxiety. By alluding to research on employee empowerment (Bakker & Albrecht, 2018) and organisational learning (Argyris & Schön, 1997), the chapter highlights pathways through which a supportive organisational culture can align with TQM-based strategies, while acknowledging the additional complexities of crisis response.

In addressing operations management, the text refers to Skinner (1974) notion that well-orchestrated operational systems can become a competitive asset. Yet it cautions that changes imposed by COVID-19, such as abrupt cost reductions, workforce downsizing, or new safety protocols, risk destabilising organisational structures if they fail to incorporate contingency plans and worker feedback. The emphasis on balancing economic imperatives with quality and

safety resonates with Ishikawa (1985) and Crosby (1979) advocacy for comprehensive stakeholder engagement, which helps sustain service standards under volatile conditions.

Finally, the chapter returns to the central contention that TQM offers a unifying framework for integrating risk management, operational stability, and cultural sensitivity. Drawing insights from Lewin (1947) three-step change model and from Burnes (2004) on incremental versus punctuated strategies, it concludes that organisations must adapt both structurally and culturally to withstand future disruptions. In the Jordanian aviation sector, adopting TQM-based crisis management, rooted in socio-technical alignment (Pasmore et al., 2019), stands out as a viable approach for sustaining performance excellence. These theoretical explorations thus pave the way for the empirical and methodological focus in subsequent chapters, where TQM's practical application in the Jordanian aviation sector and other industry actors can be examined in greater depth.

Chapter. 3 Research Methodology

This chapter explains the philosophical and methodological foundations of the study, beginning with a discussion of the research paradigm to justify the choice of interpretivism over positivism and realism. It then describes the overall research design, including the rationale for applying a case study approach in the Jordanian aviation context. Subsequent sections detail procedures for data collection and analysis, focusing on the use of semi-structured interviews, non-participant observations, and thematic analysis.

These qualitative methods capture the complexities of human factors, organisational culture, and managerial practices within a high-pressure industry environment. The chapter further addresses issues of reliability, validity, and ethical considerations. By establishing the interpretivist framework and outlining the methodological procedures, it provides the groundwork for examining how TQM principles can be effectively explored and applied in the face of real-world crises.

Figure 1 presents an overview of this study's methodological framework, highlighting how each component from the chosen interpretivist philosophy to case study boundaries, data collection, analysis, and eventual transferability is interlinked. The interpretivist philosophy box emphasises why a qualitative, socially constructed viewpoint is best suited for investigating TQM in a high-pressure industry setting. Next, case study design and boundaries clarifies why a single airline in Jordan (with certain exclusions) was selected for in-depth exploration.

The data collection methods box then lays out the semi-structured interviews, non-participant observations, document reviews, and ethical approvals used to capture the real-time complexities of airline operations. The data analysis approach section explains the thematic process, supported by NVivo software, iterative coding, and inter-rater reliability checks (Cohen's Kappa). Ethical and quality considerations illustrate how confidentiality, informed consent, member checking, and reflexive practices ensure rigour and participant well-being throughout the research. Finally, transferability and delimitation addresses the context-specific nature of findings, including their broader relevance to other safety-critical sectors and the rationale behind focusing on a single case.

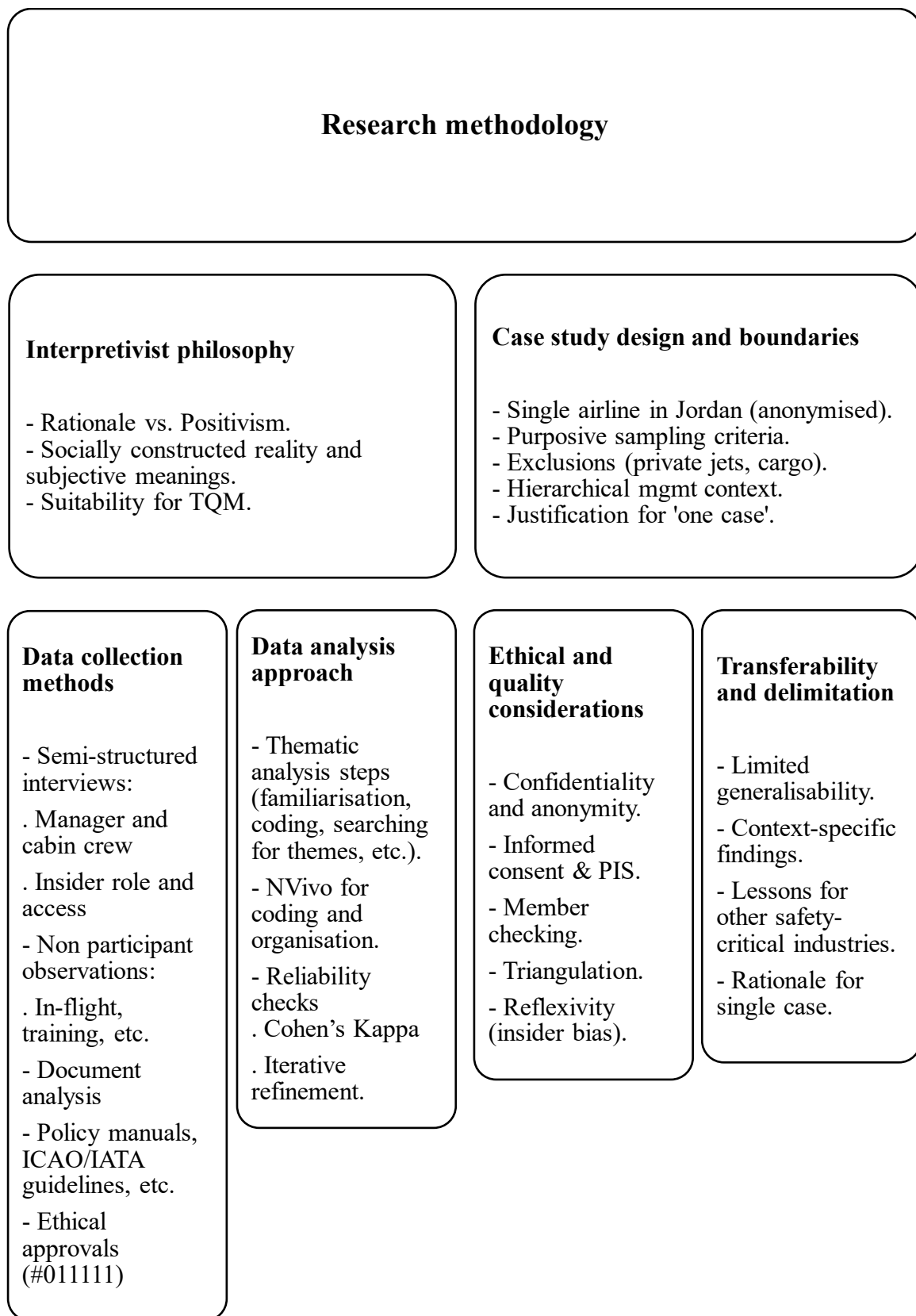


Figure 1 Visual representation of the Research Methodology.

3.1 Research Philosophy

The choice of research paradigm used is critical for how research is undertaken, particularly in relation to the philosophical foundations embraced and assumptions utilised. Exploring philosophical paradigms in research methodology, especially positivism and interpretivism, is crucial for advancing TQM knowledge within crisis environments like the Jordanian aviation industry (Ryan, 2018). This discussion critically assesses the foundational philosophies underlying research approaches, highlighting the rationale for favouring an interpretive methodology over positivism for this study.

The debate between positivism and interpretivism represents a fundamental dichotomy in research philosophy. Positivism, focuses on quantifiable data, assumes an objective observable reality (Krauss, 2005). Conversely, interpretivism emphasises subjective experience and observation, with the perception of reality socially constructed through individual cognition and language (Lincoln & Guba, 1985). Realism attempts to reconcile these views by acknowledging an external reality but accepting that human limitations of cognition make it difficult to perceive this reality fully, and linguistically present it in an absolute sense (Bhaskar, 2013). In other words, through realism, reality is believed to exist in an independent ontological sense, but the perception of it is limited by our imperfections of cognitive being.

Recent studies underscore the importance of adopting an interpretive approach in TQM research, especially within crisis contexts where human factors and organisational dynamics are pivotal (Kazancoglu et al., 2023). Given TQM's multifaceted nature, a methodological framework that surpasses the limitations of purely quantitative approaches is essential (Pfister et al., 2023). Organisational culture, leadership, and human factors often cannot be fully explained through statistics alone (Denzin & Lincoln, 2011). As Meredith (1993) notes, qualitative designs are indispensable for theory generation in TQM, allowing deeper, more nuanced exploration.

Figure 2 illustrates how interpretivists collect information, form categories, and develop theories inductively or compare emerging patterns with established frameworks. By contrast,

positivists begin with a predetermined theory, test hypotheses, and employ instruments to measure variables. This visual comparison clarifies their fundamental differences and highlights the potential integration of qualitative and quantitative methods. Within this thesis context, investigating TQM in the high-stakes environment of the Jordanian aviation industry, the figure underlines why an interpretive stance is particularly appropriate for capturing human factors, leadership, and organisational culture while also acknowledging the value of quantitative validation (Zyphur & Pierides, 2020).

Positivism has faced criticism for its inability to fully capture TQM complexities (Swamidass, 1991). While valuable for hypothesis testing, it often struggles when subjective experiences and perceptions critically shape outcomes (Ajzen, 1991). Such assumptions of a purely objective reality can overlook the social constructions inherent in organisational life. In contrast, the interpretivist paradigm recognises that the perception of reality is socially constructed, placing human consciousness at the core of understanding phenomena (Lincoln & Guba, 1985). By emphasising observational methods, interpretivism fosters a more nuanced comprehension of TQM in crisis contexts (Parkhe, 1993). However, multiple causal relationships and subjective interpretations require careful epistemological consideration and methodological rigour (Miles et al., 2014). Despite these complexities, interpretivism provides insight into how TQM, culture, and human factors interact, advocating for its use in this study.

The interpretivist approach brings certain complexities, particularly in navigating multiple causal relationships and dealing with the inherently subjective nature of interpretation. Miles et al. (2014) noted that these factors require careful consideration of epistemological issues and a commitment to stringent methodological rigour. Nevertheless, the benefits of adopting an interpretive stance, such as its capacity to reveal the complex interaction of TQM, cultural influences, and human factors, advocate for its use in this study. The distinctions between positivist and interpretivist frameworks and the trade-offs they present are illustrated in Figure 3. This figure emphasises how the two paradigms differ in assumptions, methods, outcomes, and the roles of researchers, reinforcing the argument that an interpretive approach is better suited for capturing the nuanced realities of TQM in crisis-prone, human-centered environments.

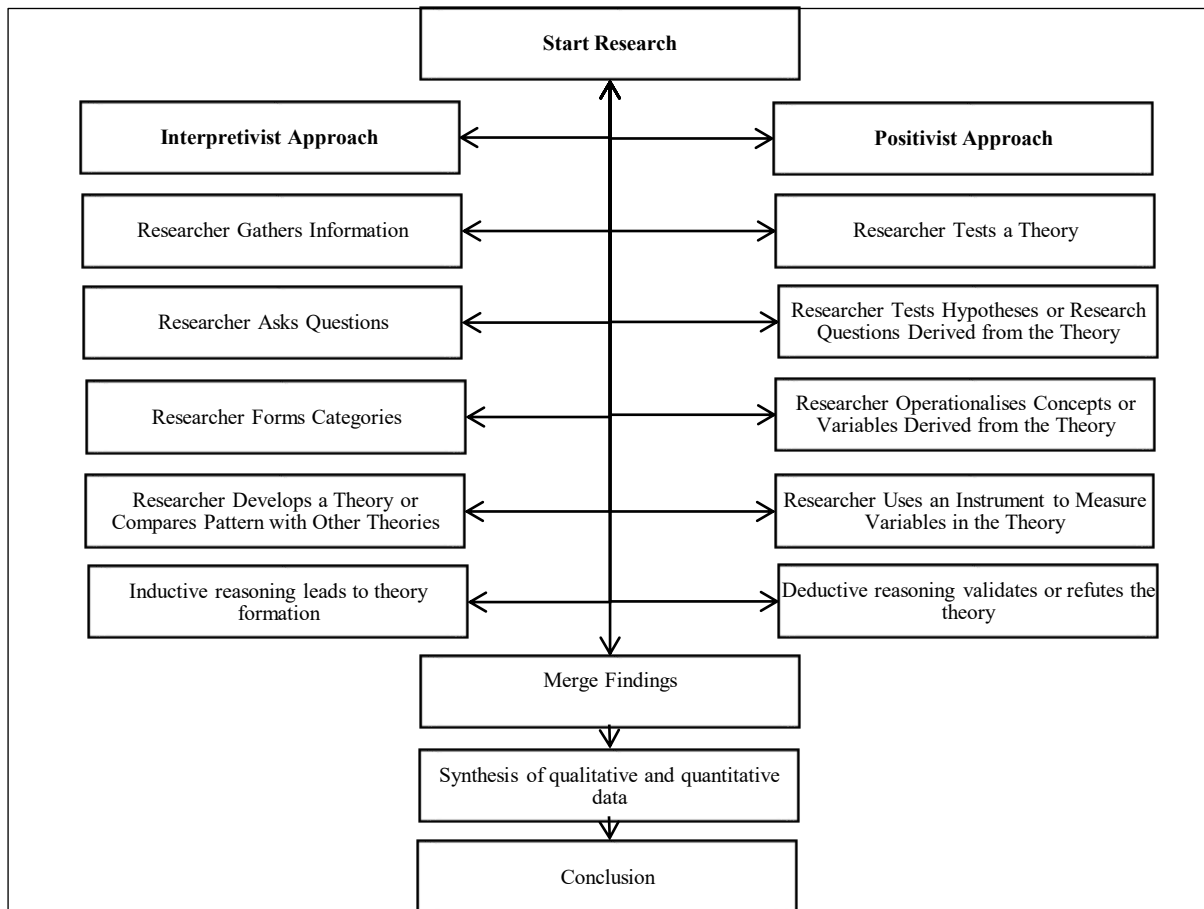


Figure 2 Interpretivist and Positivist research process (Creswell & Poth, 2016).

Figure 3 compares the interpretivist and positivist paradigms, tracing their distinct trajectories from foundational assumptions about reality to research methods, reporting styles, and researcher roles. For interpretivists, reality is socially constructed, leading to interpretive aims, flexible methods, inductive reasoning, and reporting that reflects participants' perspectives. Positivism regards reality as objective, leading to predictive aims, standardised techniques, deductive testing, and researcher neutrality. Understanding these distinctions is vital for this interpretive study. The figure highlights the methodological differences that justify a focus on the nuanced, human-centric dimensions of TQM in crisis contexts.

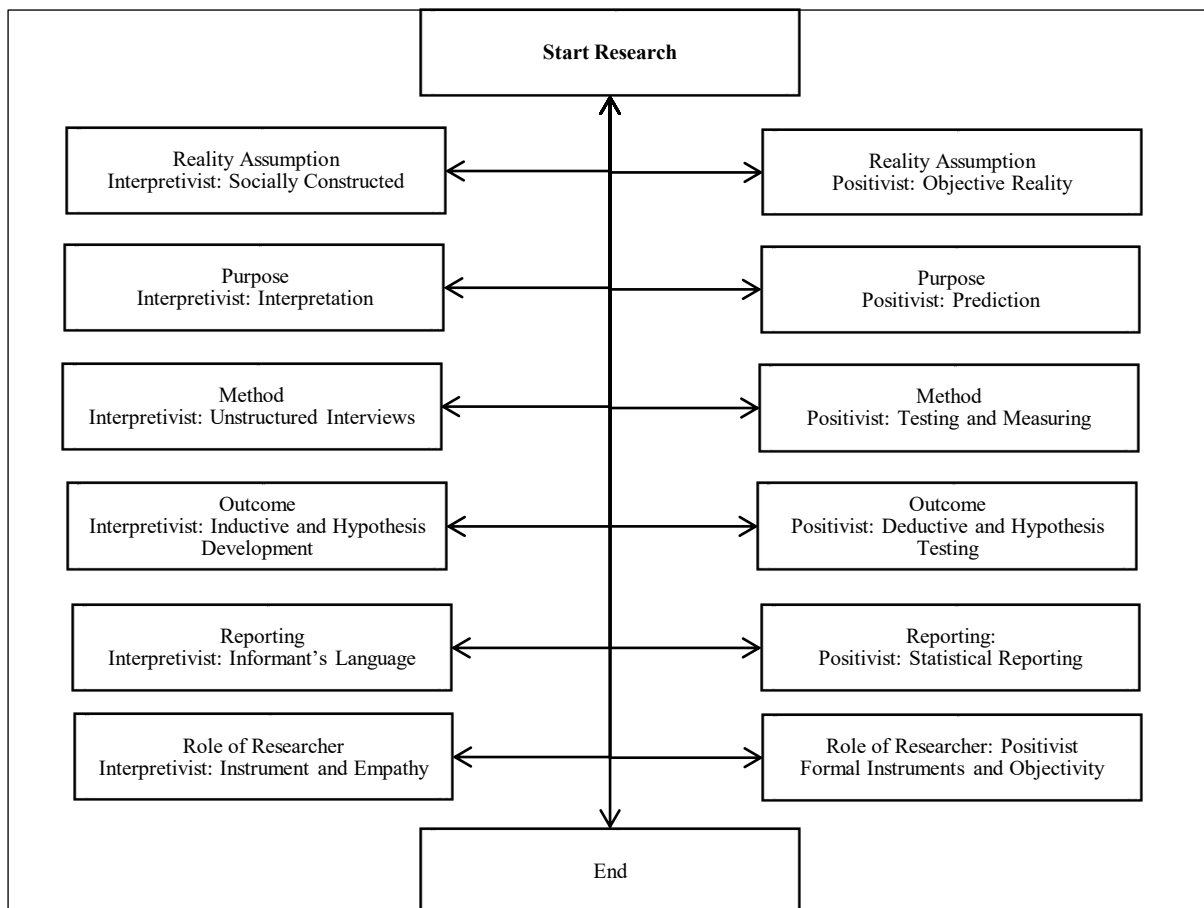


Figure 3 Comparison between interpretivist and positivist (Lawler & Waldner, 2023).

3.2 Research Design

This section outlines the research strategy adopted for this investigation, grounded in the interpretive epistemological framework (Crotty, 1998). The primary focus of this study is to apply TQM principles within a carefully selected case study framework (Ondra, 2021). A composite methodological approach, including semi-structured interviews with sector experts, was used to investigate how commercial pressures, training deficiencies, decision-making processes, and leadership paradigms impact operational efficiency (Kotter, 2008; Porter, 2008; Senge, 1990).

The case study methodology is particularly suitable for examining the multifaceted realms of human factors and TQM principles within contexts not yet fully understood (McCombes,

2023). Case studies offer comprehensive, nuanced examinations of real-life occurrences, organisational functions, and managerial practices, making them ideal for exploring complex topics (Pettigrew, 1990; Yin, 2018). This approach is especially relevant when the phenomenon under study is obscure and empirical evidence does not adequately support current theoretical frameworks (Yin, 2018). They are especially relevant when empirical support for existing theories is limited, as is often true in dynamic organisational settings (Garrido-Moreno et al., 2024).

An interpretivist stance was adopted because the phenomena of interest how TQM is understood, enacted, and adapted by people during a crisis are socially constructed and negotiated in practice. The approach is suited to eliciting situated meanings, tacit knowledge and context-bound rationales that are not readily reducible to variables (Creswell & Poth, 2016; Denzin & Lincoln, 2011; Lincoln & Guba, 1985). In a high-reliability service setting such as commercial aviation, interpretivism enabled the study to follow sense-making as it unfolded and to attend to language, norms and cultural cues that shape quality work under pressure.

The single-case design centred on one anonymised Jordanian airline was justified on three grounds. First, access: the researcher's embedded knowledge and formal approvals provided unusually rich entry to managers and cabin crew and to internal documents that are typically unavailable (Yin, 2018). Second, depth and holism: bounding the case facilitated granular tracing of TQM routines across operations, training and supervision, allowing pattern-matching and explanation-building (Ghauri et al., 2020; Stake, 1995; Yin, 2018). Third, temporal fit: the design captured a crisis period in which policies, risks and role expectations were in flux, thereby surfacing adaptations that cross-sectional surveys would struggle to reveal (Denzin & Lincoln, 2011; Meredith, 1993)

As a former first-class cabin crew member in Jordanian aviation, the researcher occupied an insider position that shaped access, rapport, and interpretation. The insider vantage facilitated credibility with participants (shared vocabulary, tacit understanding of operations) and improved the salience of prompts in semi-structured interviews. Yet it also introduced risk of confirmation bias and role-related blind spots that required active mitigation (Denzin & Lincoln, 2011; Lincoln & Guba, 1985)

Mitigation combined prospective and retrospective safeguards. Prospectively, the interview guide was piloted for neutrality; field notes distinguished observed facts from interpretations; and a reflective journal recorded assumptions and decision points. Retrospectively, peer debriefings with supervisors challenged emerging explanations; member checks on selected summaries tested descriptive accuracy; and an audit trail in NVivo logged code changes and memo links, allowing the chain of evidence to be reconstructed (Lincoln & Guba, 1985; Merriam & Tisdell, 2015).

This positionality strengthened access while constraining inference. Access gains enabled rich accounts from those most continuously exposed to service quality and safety routines; however, the researcher avoided treating personal experience as data unless independent sources corroborated it. Where experience framed initial sense-making, it was explicitly bracketed and only retained when aligned with coded interviews or documents, thereby preserving confirmability and dependability (Denzin & Lincoln, 2011; Lincoln & Guba, 1985).

Findings are not statistically generalisable; the logic is one of analytic generalisation to theory (Yin, 2018). To mitigate risks of idiosyncrasy, the study employed triangulation across interviews, observations and documents, maintained a transparent chain of evidence (audit trail), and provided thick description so that readers may judge transferability to their contexts (Lincoln & Guba, 1985; Shenton, 2004).

Ensuring the research design aligns with the central research question and its implications is essential for academic rigour. In case studies, emphasising contemporary events enables a current and context-specific analysis (Ghauri et al., 2020), capturing real-time data that reflect ongoing transitions and practices. Defining the study's boundaries is therefore crucial (Ammirato et al., 2023). This research centres on a single commercial airline in Jordan, selected through purposive criteria that considered time, access, and budget constraints (Creswell & Creswell, 2017). A key factor was the sector's hierarchical management principles (Wren & Bedeian, 2023), anticipated to yield insights into unified corporate culture and standardised methodologies for TQM and autonomous team structures (Deming, 1986a; Katzenbach & Smith, 2015).

Selecting informants from different organisational levels ensures a broad range of viewpoints (Silverman, 2019). This study employs a qualitative interpretive approach to investigate social

phenomena, such as organisational human factors (Dekker, 2017b), using semi-structured interviews to clarify cause and effect relationships between cognition and action (Ajzen, 1991; Brinkmann & Kvale, 2015; Ishikawa, 1985). A qualitative approach is suitable for capturing linguistic and perceptual dimensions that purely quantitative approaches may overlook (Saunders, 2014). Ajzen (1980) theory of reasoned action underscores that behaviours are best predicted by intentions shaped by perceived environmental control.

The research questionnaire (appendix B) covered factors such as communication, fatigue management, attitudes, planning, and training. The researcher spent three years working full-time at the selected airline, initially employed as first-class cabin crew, providing privileged access to organisational activities, reports, and employee data (Lofland et al., 2022). This insider perspective aided scheduling interviews with participants. However, careful consideration of variable selection and control issues was crucial to ensure trustworthiness in the interview process (Anderson-Cook, 2005; Denzin & Lincoln, 2011). The original research question was partly inspired by the researcher's extensive industry experience and expert opinions from professionals in both ground and air hospitality, examined using established social science methodologies (Creswell & Poth, 2016).

According to Bell et al. (2022) and Bryman (2016), qualitative inquiries, especially those with a phenomenological lens are indispensable for understanding complex social phenomena. This study's year-long inquiry utilised semi-structured interviews (Miles et al., 2014), offering flexibility to explore multifaceted topics (Creswell & Poth, 2016). Data analysis employed content and discourse analysis methodologies (Clarke & Braun, 2013; Tesch, 2013). Encouraging open discussion about attitudes, feelings, and beliefs created an environment where these dimensions were more fully captured than in purely quantitative designs (Greenbaum, 1998; Merriam & Tisdell, 2015).

Dealing with qualitative data poses challenges in ensuring reliability and objectivity (Nii Laryeafio & Ogbewe, 2023; Tracy, 2019). To mitigate subjective biases and confirm credibility, the researcher systematically transcribed interviews, then condensed them into concise content summaries, identifying key phrases encapsulating crucial insights (Harrell & Bradley, 2009). Distilling data into overarching themes facilitated deeper analysis of how social and technical systems interact with TQM principles (Charmaz, 2014; Patriarca, 2021; Ragin, 2014).

Balancing theoretical frameworks and practical considerations in a case study design can introduce limitations. More extensive access or a longer timeframe might have allowed a larger pool of interviews, especially challenging during the COVID-19 pandemic, which restricted flight operations and staff availability. Consequently, interviews required meticulous scheduling to accommodate shifting operational demands. The choice to use a case study methodology followed the evaluation of alternative strategies like grounded theory. Grounded theory's iterative data collection and analysis approach (Charmaz, 2014) was deemed unsuitable due to ethical sensitivities in airline operations during the pandemic and the need to examine predetermined concepts (Creswell & Poth, 2016). Since grounded theory could shift the research focus away from the pandemic's impact on Jordanian aviation, a case study design was more appropriate (Bryman, 2016).

3.2.1 Exclusions and Rationale

To maintain coherence, the study excludes private jets, cargo-only carriers, and military aviation within Jordan. Each of these segments operates under distinct regulatory mandates and risk profiles that differ considerably from commercial passenger airlines. Narrowing the scope to one flag carrier with extensive passenger operations allowed for depth of qualitative investigation (Bell et al., 2022; Bryman, 2016), whereas broadening to multiple segments might dilute the contextual specificity vital for interpretivist case studies (Stake, 1995).

While quantitative data (e.g., incident rates, passenger volumes, or profit margins) can enrich TQM assessments (Meredith, 1993), this thesis prioritises qualitative insights, such as semi-structured interviews, observations, and document analyses, to capture the human factors and organisational narratives surrounding crisis responses. Financial or operational metrics are referenced to contextualise COVID-19's impact but are not subjected to inferential statistical analysis. This exclusion reflects the interpretivist stance that lived experiences, leadership dynamics, and cultural nuances require in-depth qualitative methods (Denzin & Lincoln, 2011).

Although the aviation ecosystem involves airport authorities, aviation regulators, tourism boards, and global suppliers, the study excludes extensive interviews or site visits with these external entities. This decision was made to preserve analytic clarity around internal airline

processes, such as management philosophies, crew training, and leadership styles and to keep the project within the practical limits of a doctoral timeline. Nonetheless, industry documents and select regulatory guidelines were reviewed to frame the macro-level context of aviation policies.

3.2.2 Implications for Generalisability and Transferability

By focusing on one airline in Jordan under a unique crisis, the external generalisability of the findings is not absolute (McCombes, 2023). Variations in national culture, economic resources, and regulatory oversight can produce distinct TQM outcomes in other airlines or regions (Hofstede, 2001). Additionally, the in-depth qualitative approach trades broad statistical power for rich contextual detail, which may limit its applicability to quantitatively oriented fields (Denzin & Lincoln, 2011; Lincoln & Guba, 1985).

Despite these constraints, the study's thick descriptions and thematic insights, such as the importance of empathy in leadership, frontline empowerment, or adaptable safety protocols offer transferable lessons (Shenton, 2004) to other safety-critical and service-oriented industries. Researchers and practitioners can compare their contexts with Jordan's to judge whether similar cultural or operational conditions exist, thereby adapting the findings accordingly (Yin, 2018). Thus, while not statistically generalisable, the results may resonate with organisations facing volatile environments, hierarchical traditions, or crisis-induced disruptions, enabling them to modify TQM practices.

Consistent with the interpretivist and case-study orientation, the study seeks transferability rather than statistical generalisation. Findings are most applicable to service organisations that share the following boundary conditions: safety-critical operations; hierarchical lines of authority; tight coupling between frontline service and risk controls; and exposure to rapid policy change under external constraints (Lincoln & Guba, 1985; Yin, 2018). Within those conditions, several insights may travel: the salience of Communication and Leadership (T1) for sense-making; the need to balance Policy Compliance (T6) with Adaptive Operational Strategies (T10) under uncertainty; and the role of Effective Supervision (T9) as a buffer between corporate directives and frontline realities. By contrast, observations tied to national

subsidy regimes, specific staffing models, or local regulatory interpretations are context-bound and should be read as situated illustrations rather than templates.

To support responsible re-use, the chapter provides thick description of the setting, roles and routines. Readers in cognate sectors (e.g., healthcare, rail, maritime, hospitality) can assess fit by comparing their organisational characteristics to those described in this study; where alignment exists, the mechanisms identified (e.g., feedback clarity; supervisor coaching; adaptive training) offer testable propositions for practice. Acknowledging these delimitations shaped both the data collection and interpretation. The choice to concentrate on a single case and to rely predominantly on qualitative data means findings explore why certain TQM initiatives floundered or succeeded under COVID-19 pressures, offering context-specific reasoning rather than universal laws (Bell et al., 2022; Bryman, 2016). To strengthen credibility, member checking and thematic reliability (Cohen's Kappa) were employed to ensure that participants' voices were faithfully captured, thereby enhancing internal rigour (Clarke & Braun, 2021). Ultimately, the boundaries set by this study clarify how and why TQM adaptation is influenced by local culture, crisis parameters, and organisational practices, supplying a nuanced lens rather than a one-size-fits-all prescription.

In summary, the scope and delimitations established in this section were purposively designed to yield an in-depth, context-rich investigation of TQM under crisis in a single Jordanian airline. While such specificity may constrain broader generalisation, it heightens the theoretical clarity and practical relevance of the findings for stakeholders seeking to refine TQM approaches in similarly volatile, safety-critical sectors.

3.3 Methodological Framework and Data Collection

This research complied with rigorous ethical standards, securing approval from the University of Sunderland's Ethics Review Board (Reference Number 011111), as documented in Appendix C. The study adhered to all submitted paperwork, including the University's research ethics application form, participant information sheet (version 1), and participant consent form (version 1). Aligning with Creswell and Creswell (2017) emphasis on ethical research, these measures ensured participant safety and well-being. Semi-structured interviews were

conducted with participants from the airline organisation, including managers and cabin crew. The researcher's prior sensitisation to this organisation facilitated access to potential participants, aligning with Yin (2018) recommendations for leveraging insider knowledge. These individuals play critical roles within the aviation industry, and their insights are highly valued.

The researcher's insider status as a former first-class cabin crew member afforded legitimacy, rapport, and situated understanding of crew workflows, safety rituals, and the language through which quality and risk are negotiated. This materially facilitated access, compressed recruitment timelines, and enhanced the interpretive depth of interviews and observations (Bell et al., 2022; Yin, 2018). At the same time, insider proximity carries risks. Over-familiarity with routines, confirmation bias, and potential gatekeeper influence may narrow interpretive horizons. There is also a risk that participants project expectations of shared experience, which can mute disconfirming accounts (Denzin & Lincoln, 2011; Merriam & Tisdell, 2015). To mitigate these risks, the study used reflexive journaling and analytic memos to bracket prior assumptions; employed a semi-structured protocol with consistent prompts; engaged in peer debriefing with supervisors; and conducted member checks on selected summaries to clarify meanings. Reflexive notes were retained in the audit trail, and triangulation with observation and documentary sources was used to interrogate emerging interpretations (Lincoln & Guba, 1985; Yin, 2018). A fuller narrative of reflexivity is provided in Chapter 5 of this thesis.

Participants received a comprehensive Participant Information Sheet detailing the study's purpose and procedures. Written and verbal consent was obtained via a Participation Consent Form, outlining participants' rights and their freedom to withdraw at any time (Saunders, 2014). An interview tracking sheet documented participant codes, names, consent status, and interview dates (Bell et al., 2022). Data were encrypted and securely stored, accessible only to authorised personnel, with two-factor authentication. If participants withdrew, their data were immediately deleted in compliance with data protection regulations (Regulation, 2016). Data collection methods included semi-structured interviews, non-participant observations, and document analysis. The primary method semi-structured interviews explored TQM dimensions such as leadership, risk assessment, and strategic management during COVID-19 (Creswell & Poth, 2016). Non-participant observations complemented interview data by examining real-time TQM implementation and interactions. Document analysis encompassed internal and external documents on TQM practices (Yin, 2018).

Data analysis followed a thematic approach, including familiarisation, coding, theme development, and interpretation (Braun & Clarke, 2022), to identify patterns related to TQM implementation in the pandemic context. Ethical considerations were integral, ensuring participant confidentiality and informed consent. Multiple strategies strengthened trustworthiness and rigour, including triangulation, member checking, and reflexive journaling (Lincoln & Guba, 1985). Triangulation integrated multiple data sources, member checking allowed participants to validate transcripts and interpretations, and reflexive journaling documented potential biases (Merriam & Tisdell, 2015).

Consistent with the case study boundaries and the post-pandemic operational realities of the airline, opportunities for non-participant observation and documentary access were restricted. Observation consisted of two research-motivated journeys as a passenger and one visit to the crew centre toward the end of the pandemic period to introduce the study and clarify emerging insights. Documentary analysis drew on internal artefacts (e.g., Policy and Procedure Manuals, Cabin Crew Operational Manuals, a Corona Manual, memos and circulars), public statements by the airline and national authorities, industry news, and organisational annual reports and financial statements, alongside sector guidance e.g., (IATA, 2022; ICAO, 2023). In line with good qualitative practice, prior professional experience was treated as sensitising background only; it informed question design and initial sense-making but was not counted as data unless corroborated by interviews or documents and logged in the audit trail (Denzin & Lincoln, 2011; Lincoln & Guba, 1985).

To resolve the limitation arising from limited observation, the study implemented an explicit weighting-of-evidence strategy and a chain of evidence. Interviews were designated the primary evidentiary base; documents established formal expectations and change chronology; observations provided practice-proximal checks of enactment in naturalistic settings available to the researcher. Analytical integration followed pattern-matching and explanation-building procedures (Yin, 2018), combined with constant comparison and ‘following a thread’ across sources (Miles et al., 2014). Credibility was enhanced through peer debriefing and member checks on selected summaries; dependence on any single source was avoided by seeking convergence (corroboration) or complementarity (extension) across modalities (Denzin & Lincoln, 2011; Lincoln & Guba, 1985).

Table 4 specifies what was actually collected, its extent, and its analytic role, making scope and limits visible. Triangulation was evaluated on two criteria: convergence and complementarity. Convergence meant distinct sources independently supported the same claim (e.g., frequent SOP change); complementarity meant sources illuminated different facets of a phenomenon (e.g., interviews describing strain; documents showing revision cadence; observations revealing enactment). Both paths strengthened credibility while acknowledging partial observational vantage (Denzin & Lincoln, 2011; Lincoln & Guba, 1985). Analytically, integration used pattern-matching and explanation-building. Candidate explanations from interviews were checked against documentary chronologies and the limited situational observations to test sequences (e.g., policy update to briefing quality to compliance). Where dissonance persisted, it was logged, discussed in peer debriefs, and if unresolved presented transparently in the Findings (Miles et al., 2014; Yin, 2018). Given the necessarily restricted observation window, a weighting of evidence protocol prioritised interviews for sense-making, used documents to establish formal expectations and timing, and relied on observations to check practice-proximal cues thereby preserving rigour while staying within access constraints (Lincoln & Guba, 1985; Yin, 2018).

Table 4 maps each key finding to the supporting sources. Where observation was not feasible or provided only limited vantage, this is flagged and the inference rests on interview and document triangulation, preserving transparency and rigour. Together these steps counterbalance the restricted observational window, ensure that claims are anchored in traceable evidence, and demonstrate how the findings were drawn. (See also the existing audit trail materials and reliability procedures reported in section 3.4.2.4.) Table 4 clarifies the scope and limits of each source and shows why interviews carry greatest analytic weight, with documents and observations providing corroboration and context. This explicit weighting, combined with a traceable chain of evidence, addresses the limitation of restricted observation while preserving the integrity of the case (Lincoln & Guba, 1985; Yin, 2018). Table 5 matrix demonstrates that each claim is grounded in interviews and at least one corroborating source. Where direct observation was limited, documentary trails (internal updates and external guidance) supplied the second leg of triangulation, and any residual dissonance was retained and explored via peer debriefing and member checks, thereby maintaining credibility despite access constraints (Denzin & Lincoln, 2011; Lincoln & Guba, 1985; Miles et al., 2014; Yin, 2018).

Data source	Specific scope & date range	Extent/occasion	Primary analytical contribution	Weight	Notes/limitations
Semi-structured interviews (managers; cabin crew)	Fieldwork Feb–Aug 2022	18 interviews (30–90 min)	Core sense-making: experiences, interpretations; seeded initial codes/themes T1–T10	Primary	Scheduling constrained by operations; mitigated via flexible timings and tracking sheet.
Non-participant observation	Two research journeys as a passenger; one crew-centre visit near end of pandemic period	2 flights; 1 centre visit	Practice-proximal checks of policy enactment; interactional cues for T1, T8, T9	Supporting	Vantage limited to public/passenger areas and permitted spaces; no line checks; recorded as reflexive/field notes.
Internal organisational documents	PPM, CCOM, Corona Manual; internal memos & circulars; selected training materials (2019–2023)	Corpus of controlled docs and bulletins	Formal expectations; change chronology; triangulation for T2, T6, T10	Supporting	Access uneven across document families; revision histories summarised where full logs unavailable.
Public statements & sector guidance	Airline statements; national authority announcements; industry news; annual reports/financials; (IATA, 2022; ICAO, 2023).	2020–2023	External constraints; regulatory cues; context for risk and policy shifts (T4/T6)	Contextual	Used to frame boundary conditions; not treated as evidence of practice without interview/document support.

Table 4 Data sources, scope and analytical contribution.

Key finding (linked theme)	Transcripts	Observations (context)	Documents (illustrative)	Notes
Operational pressure intensified fatigue and role conflict (T8).	06, 09, 16, 17	Patterns of time compression and clustered workload visible during two journeys (<i>Obs: limited vantage</i>)	Rostering circulars; pandemic-period staffing memos; annual report risk commentary	Convergence between lived accounts and formal signals of under-resourcing.
Frequent policy change and variable clarity (T6/T1).	04, 05, 10, 15	Briefing emphasis varied; signage and announcements inconsistent across flights (<i>Obs: limited vantage</i>)	SOP updates; Corona Manual revisions; external IATA/ICAO guidance cascading to SOP	Triangulation shows rapid update cycles driving message inconsistency.
Supportive supervision buffered stress and improved consistency (T9).	05, 12, 15, 16	Informal mentoring before service and at crew-centre	Appraisal and coaching materials; supervisor role descriptions	Complementarity: observation of micro-practices + procedural expectations.
Adaptive training elevated confidence in new protocols (T2/T10).	01, 06, 12, 18	Practice of new steps referenced in pre-departure checks (<i>Obs: limited vantage</i>)	Training outlines; e-learning module summaries; update memos	Documented curriculum changes align with participants' narratives.
Risk management complied with guidance but competed with commercial cues (T4/T8).	02, 14, 18	Safety briefings completed under schedule pressure	SMS guidance; external ICAO/IATA advisories	Dissonance noted between formal expectations and temporal constraints.
Bottom-up voice existed but was uneven (T1/T7).	04, 11, 15	Crew-centre discussion opportunities observed	Feedback forms; incident reporting templates; low uptake in minutes	Interviews + records indicate selective use of channels.

Table 5 Triangulation matrix: key findings and corroborating sources.

3.4 Case Study: TQM within a Jordanian Airline

This section focuses on how TQM concepts apply within the organisation that forms the basis of this case study. Because the data collected involves sensitive information, the organisation's identity has been anonymised. This measure was critical to secure access and encourage candid insights from key informants (Saunders, 2014; Yin, 2018). Moreover, anonymisation is a common practice in organisational research, particularly when dealing with proprietary or commercially sensitive information (Patton, 1990). As an airline operating in Jordan, it functions in a challenging environment marked by geopolitical tensions, global economic shifts, and the unprecedented impacts of COVID-19 (Gössling, 2020; Ritchie & Jiang, 2019). These factors make this organisation an instructive setting for examining how TQM principles adapt or fail to adapt in real-world crises. Unlike purely theoretical models, this organisation's experience provides concrete insights into the operational, cultural, and regulatory complexities that TQM frameworks face in practice (Oakland, 2014; Zairi, 2013).

3.4.1 The Sample Organisation

The airline under study employs a sizable workforce and operates a diverse fleet across multiple continents, reflecting modernisation efforts amid a volatile aviation market (IATA, 2022; Shaw, 2016). Although it reports various operational enhancements, the overall effectiveness and uniform adoption of these initiatives warrant closer examination (Oakland, 2014). The airline has also invested in human resources through incentive programs and training, yet the long-term impact on retention and staff morale remains mixed due to external pressures (Sweis et al., 2019). Regional tensions and pandemic-related disruptions heavily influence the airline's operational outcomes. Fluctuating fuel costs and geopolitical uncertainties underscore the fragility of its business model (Albers & Rundshagen, 2020; Chung, 2021). Government subsidies addressing a substantial share of financial losses highlight a degree of dependence on external support, often considered necessary, yet raising questions about autonomy and resilience under prolonged global challenges (Abate et al., 2020).

The decision to anonymise the organisation and sample was based on concerns from the participants who felt that their right to speak freely about their experiences would have been hindered by any potential identifying link that could reveal their views. As the researcher was keen to draw out the organisational reality of the participants, sample anonymisation was considered vital. Furthermore, although the researcher had informed consent from the organisation that this study was built around, anonymisation circumvented any need for lengthy and costly legal analysis within the organisation for the participants to reveal their true thoughts and feelings.

The overarching case study evaluates TQM-related improvement strategies and their associated risks within this airline. Focusing on how system designs and enhancement measures align with TQM principles, the research investigates team performance and quality management practices under real-world constraints. Although the airline has pledged a commitment to TQM by introducing policies aimed at employee engagement, workforce feedback indicates potential gaps between these policy aspirations and actual operations especially regarding communication, consistent training, and broad staff involvement (Pasmore et al., 2019; Scholtes, 1998).

Efforts to boost service quality through competitive benefits and continuous development further align with TQM's customer-focused orientation. Nevertheless, operational exigencies can sometimes overshadow staff well-being. For instance, a formal performance appraisal system intends to foster structured feedback loops, yet the extent to which these appraisals substantially improve performance remains under scrutiny (Reason, 2003; Womack, 1996). Although corporate reports highlight service ambience and cleanliness, actual impact depends on consistent crew training and broader operational efficiencies (Mayer, 2003; Sweis et al., 2019). Investments in improved facilities and safety measures also require evaluation against real-world outcomes, including error mitigation and staff morale.

The anonymised airline was selected for three primary reasons:

- **Strategic Relevance:** Its role as a flagship carrier in a region susceptible to sudden disruptions offers insights into how TQM functions under pressure (Kim, 2005; Pfeffer & Sutton, 2006).

- **Organisational Accessibility:** The researcher's professional ties afforded direct access to key stakeholders, including management and frontline staff (Gummesson, 2000; Yin, 2018).
- **Industry Significance:** The airline's cost-control and regulatory challenges mirror broader sector-wide issues. Examining its TQM efforts can inform other medium-sized carriers navigating similar complexities (Albers & Rundshagen, 2020; Sila & Ebrahimpour, 2005).

Methodological Overview

A combination of qualitative methods provided a comprehensive examination of TQM within the airline:

- **Semi-structured interviews:** Conducted with managers and crew influencing TQM initiatives (Bryman, 2016).
- **Document Analysis:** Examined relevant policy manuals and procedural documents, along with regulatory guidelines from bodies such as IATA and ICAO (IATA, 2022; ICAO, 2023).
- **Non-Participant Observations:** Offered contextual insights into organisational culture and operational dynamics (Bate, 1997).
- **Data Coding and Thematic Analysis:** Transcribed data were systematically coded using NVivo 14 to identify recurring patterns (Braun & Clarke, 2006).

Although the airline has made strategic strides, such as adopting performance appraisals, safety reporting, and predictive maintenance, cultural and structural changes sometimes lag behind policy reforms. Balancing cost reduction with TQM's emphasis on employee development remains a concern (Oakland, 2014; Zairi, 2013). The study links these findings to fundamental TQM principles, illustrating that merely meeting audit requirements does not guarantee effective frontline practices (Crosby, 1979; Ishikawa, 1985). Preliminary data suggest that steps toward TQM integration include performance appraisals, safety-lapse reporting systems, and predictive technologies (Edwards, 2019; Jiang & Ritchie, 2017). Yet genuine transformation requires aligning leadership, communication, and cultural elements with TQM philosophies (Pasmore et al., 2019; Scholtes, 1993). The research, therefore, emphasises that TQM implementation in volatile environments is neither guaranteed nor linear.

Information presented here draws primarily on collective perceptions of employees, including both management and cabin crew. By leveraging semi-structured interviews and secondary data (e.g., industry reports, scholarly research), the study constructs a framework for understanding TQM's socio-organisational trends within commercial aviation. Participants' significant tenure in the industry yielded in-depth insights into established practices. (Alshweesh & Ali, 2017). To foster transparency, participants were encouraged to discuss the interview process and relevant research details openly (Miles et al., 2014; Yin, 2018). One-on-one interviews proved effective for exploratory work, swiftly uncovering a range of viewpoints (Ghauri et al., 2020; Kitzinger & Barbour, 1999). Adherence to Creswell and Creswell (2017) guidelines such as rapport-building, ethical data recording, and proper handling of participant information helped ensure the authenticity and reliability of findings.

While semi-structured interviews facilitate depth and flexibility, they also risk interviewer bias if questions vary significantly between participants (Finn et al., 2000). Strong communication skills are crucial for mitigating such bias. In alignment with Yin (2012) case study methodology, the researcher employed pattern matching and explanation building, comparing interview findings with existing literature to derive comprehensive insights. Scheduling interviews posed challenges given shifting operational demands, pandemic restrictions, and personal obligations. Though conducting interviews during breaks or off days helped, participant availability remained limited, reflecting how broader crises can reduce sample sizes and depth of empirical findings (Creswell & Creswell, 2017).

A carefully designed interview protocol ensured alignment with core research aims while allowing unanticipated topics to surface. Informed by TQM literature, external industry discussions, and regulatory performance reports, the semi-structured questionnaire (Appendix B) prompted participants on themes such as continuous improvement, communication efficacy, and structured leadership (Donthu & Gustafsson, 2020; Oakland, 2014; Sweis et al., 2019). Interviews yielded rich, context-specific responses anchored in theoretical frameworks and best practices. A significant proportion of participants stressed ongoing requirements for training and career development, reflecting fundamental TQM principles of organisational learning and resilience.

3.4.1.1 Participant Demographics

Table 6 presents an overview of the demographic characteristics of the study's participants, including their position, date of interview, interview duration, level of education, years of experience, employment status, previous management experience, age, gender, and nationality. These variables are essential to contextualise the background and expertise of each participant, as they can significantly influence individual perspectives and responses. By including a diverse cross-section of cabin crew and management staff, the data ensures a comprehensive exploration of viewpoints from different organisational roles, educational backgrounds, and tenure levels.

Analysing these demographics is critical for understanding the multiplicity of experiences and insights that inform the study's findings. For instance, participants with varying years of experience or different educational levels may offer unique perspectives on leadership, crisis management, and TQM practices. Similarly, including both current and former staff members helps capture reflections that span ongoing operational challenges as well as lessons learned from previous roles. In other words, highlighting these demographic details not only supports the credibility and breadth of the qualitative analysis but also underscores the relevance of the study's conclusions to a wide range of organisational contexts.

Participants were selected through purposive sampling to secure information-rich perspectives from two organisational strata most continuously exposed to passengers and to the routine enactment of service-quality and safety policies: cabin crew and their managers (Patton, 1990; Yin, 2018). Maximum variation was sought on role and tenure to elicit contrasts in responsibility, discretion and exposure to policy change (Bryman, 2016; Miles et al., 2014). Focusing on cabin crew and managers was theoretically and pragmatically justified. Theoretically, these groups sit at the interface where TQM routines (service standards, feedback loops, coaching) meet real-time operational contingencies; they are, therefore, key informants for how quality practices are adapted under pressure. Pragmatically, they were the roles for which sustained access and observation authorisations were feasible during the pandemic period (Yin, 2018).

Pilots and ground staff were not included, not because their perspectives lack value, but to preserve analytic coherence and depth within the service-facing domain; these groups operate

under distinct technical and regulatory regimes and would require separate sampling frames and protocols. Their exclusion is acknowledged as a delimitation and a prompt for future research. The final sample of 18 was sufficient for the study's analytic aims. Theoretical saturation operationalised as redundancy in new codes relevant to the research questions was approached by the sixteenth interview and confirmed by the final two; no materially new codes were added to the codebook, and existing categories were only further populated (Bryman, 2016; Glaser Barney & Strauss Anselm, 1967; Lincoln & Guba, 1985). Triangulation with observations and documents reinforced closure.

Participant code	Transcript	Position	Date of interview	Interview duration	Level of education	Years of experience	Status	Age	Gender	Nationality
1	01	Cabin Crew	12 February 2022	60 minutes	Masters	0 – 5	Current	31 – 35	Male	Jordanian
136	02	Cabin Crew	12 February 2022	60 minutes	Bachelor	0 – 5	Current	20 – 30	Female	Jordanian
157	03	Cabin Crew	August 2022	30 minutes	Bachelor	6 – 10	Current	31 – 35	Male	Jordanian
211	04	Cabin Crew	14 February 2022	65 minutes	Bachelor	6 – 10	Current	36 – 40	Male	Jordanian
214	05	Cabin Crew	22 February 2022	90 minutes	Bachelor	0 – 5	Current	31 – 35	Male	Jordanian
220	06	Cabin Crew	11 February 2022	60 minutes	Bachelor	6 – 10	Current	36 – 40	Male	Jordanian
224	07	Cabin Crew	August 2022	60 minutes	Bachelor	6 – 10	Current	31 – 35	Male	Jordanian
267	08	Cabin Crew	August 2022	45 minutes	Bachelor	6 – 10	Current	36 – 40	Male	Jordanian
295	09	Cabin Crew	August 2022	60 minutes	Bachelor	0 – 5	Current	31 – 35	Male	Jordanian
351	10	Cabin Crew	August 2022	60 minutes	Bachelor	6 – 10	Current	31 – 35	Male	Jordanian
5	11	Cabin Crew	August 2022	30 minutes	Bachelor	0 – 5	Former	36 – 40	Male	Jordanian
107	12	Cabin Crew	05 August 2022	90 minutes	Masters	6 – 10	Former	36 – 40	Male	Jordanian
159	13	Cabin Crew	05 July 2022	90 minutes	Bachelor	6 – 10	Former	36 – 40	Male	Jordanian
89	14	Management	August 2022	30 minutes	Bachelor	11 – 15	Current	36 – 40	Male	Jordanian
147	15	Management	24 February 2022	60 minutes	Bachelor	16 – 25	Current	41 – 45	Male	Jordanian
175	16	Management	14 February 2022	60 minutes	Bachelor	16 – 25	Current	36 – 40	Male	Jordanian
212	17	Management	August 2022	30 minutes	Bachelor	11 – 15	Current	36 – 40	Male	Jordanian
363	18	Management	August 2022	60 minutes	Bachelor	16 – 25	Current	41 – 45	Male	Jordanian

Table 6 Participants Attribute Values.

3.4.2 Thematic analysis

Thematic analysis, chosen for its systematic and structured approach, proves highly effective in identifying, analysing, and reporting patterns within the data (Clarke & Braun, 2021). Its unique advantage lies in its ability to explore data without the constraints of a pre-existing theoretical framework (Boyatzis, 1998), making it ideal for a study of the work environment and worker behaviour during a pandemic. This method allows the researcher to explore the explicit content of the interviews and the underlying meanings of the participants' statements, providing a fresh perspective on the impacts of the pandemic.

Thematic analysis followed the procedures outlined by Clarke and Braun (2021), although it was implemented as an iterative process rather than a strictly linear one. This approach involved revisiting earlier steps and categorisations to integrate new material from the data continually. The researcher utilised the constant comparison technique described by Glaser Barney and Strauss Anselm (1967), which involves comparing each piece of data to identify similarities and differences (Thorne, 2000). This method was crucial in maintaining the flexibility and depth needed for effective data analysis, thereby ensuring the thoroughness and comprehensiveness of the research approach.

The present study employed a thematic analysis following the step by step process summarised in Table 7 (Clarke & Braun, 2021). This systematic approach encompassing data familiarisation, generating initial codes, searching for themes, reviewing potential themes, defining and naming themes, and finally producing the report (findings) provided a comprehensive understanding of the issues under investigation. In doing so, it highlighted the critical role of adaptive management practices and underscored how effective leadership and clear communication are vital for navigating crises.

Moreover, the findings emphasised the importance of continuous improvement and employee empowerment, consistent with TQM principles (Oakland, 2014). Aligning with broader theoretical frameworks and empirical evidence within organisational studies, this structured methodological design ensures both robustness and relevance for the study's conclusions. During familiarisation and open coding, six proto-themes were used as broad containers: Communication & Leadership; Supervision & Culture; Training & Development; Policy &

Procedures; Operational Pressures & Well-being; and Risk & Safety. These clusters provided a provisional organising frame for early code aggregation without fixing the final structure (Clarke & Braun, 2021; Miles et al., 2014).

Axial coding and iterative comparisons then split or consolidated categories where warranted by patterned meaning across transcripts and cross-source evidence (Clarke & Braun, 2021; Fereday & Muir-Cochrane, 2006). For example, Supervision & Culture bifurcated into Effective Supervision (T9) and Cultural Adaptation & Team Support (T3); Operational Pressures & Well-being separated into Operational Pressures (T8) and Employee Well-being & Job Security (T5); and communication-related material stabilised as Communication & Leadership (T1) while also giving rise to Accountability & Empowerment (T7) where bottom-up voice and discretion emerged as a distinct pattern. Finally, recurrent references to proactive adjustment under evolving constraints warranted a cross-cutting theme, Adaptive Operational Strategies (T10), distinct from policy compliance (T6). Table 8 presents the coding tree mapping the six initial clusters to the ten final themes (T1–T10), clarifying the analytic moves that led to the framework reported later in Tables 17–18.

Stage	Description of activities
Familiarisation	Involve Immersing in data by reading and rereading textual data (e.g., interview transcripts) and listening to audio or watching video data.
Generating initial codes	The classification of data into meaningful categories while ensuring that the context is preserved
Searching for themes	Reorienting the focus of the analysis toward the overarching themes that incorporate the codes from the prior stage
Reviewing Potential themes	During this phase, the developing themes are looked at concerning the coded data and the whole data set.
Defining and naming themes	This phase is where the deep analytic work for thematic analysis happens. It is where the analysis is shaped into fine-grained details, which is a crucial step.
Producing the Report	Providing a report on the process of coding and the development of themes while demonstrating a systematic approach

Table 7 Thematic analysis process (Clarke & Braun, 2021).

Initial cluster (open coding)	Final theme(s) (T-code) and notes on change
Communication & Leadership	T1 Communication and Leadership (stabilised); T7 Accountability & Empowerment (emerged around bottom-up discretion/voice).
Supervision & Culture	T9 Effective Supervision (hands-on coaching); T3 Cultural Adaptation & Team Support (team solidarity across diversity).
Training & Development	T2 Training and Professional Development (retained, expanded by crisis-specific upskilling).
Policy & Procedures	T6 Policy and Procedural Compliance (retained); T10 Adaptive Operational Strategies (added to capture iterative, context-responsive adjustments).
Operational Pressures & Well-being	T8 Operational Pressures and T5 Employee Well-being & Job Security (split to differentiate systemic workload from health/psychosocial concerns).
Risk & Safety	T4 Risk Management and Safety Culture (retained).

Table 8 Coding tree: initial six clusters → final ten themes.

3.4.2.1 Transcript coding:

NVivo (14), a computer-assisted qualitative data analysis software (CAQDAS), was employed to manage the transcribed interview data. Following Fereday and Muir-Cochrane (2006) approach, deductive and inductive coding methods were used to identify and interpret themes. This approach enabled the emergence of themes from the data while considering established findings, ensuring a comprehensive analysis. Although primarily inductive, some deductive interpretation was utilised to align with theoretical frameworks. During the initial coding phase, text segments (small chunks, sentences) were labelled with descriptive phrases or words, aiding data organisation into meaningful categories (Miles et al., 2014).

Each transcript was thoroughly examined, emphasising all sections equally, following Clarke and Braun (2021) guidelines. This process involved the iterative use of constant comparison, whereby initial codes were continuously refined based on contextual data (Glaser Barney & Strauss Anselm, 1967). Table 9 depicts the development of initial codes derived from the transcript data, closely linked to the key issues identified in the interviews. Table 8 illustrates the frequency with which specific thematic codes were identified in the interview transcripts. The columns correspond to the recurring codes that emerged during the data analysis, such as ‘Blame, Negativity or Culture’ (A), ‘Communication’ (B), and ‘Fatigue’ (C), among others. Each row represents a transcript detailing how many times each code appeared in a participant’s responses.

By systematically mapping the frequency of each theme, the table provides a clear overview of where key concerns, such as leadership challenges, training deficits, or communication barriers, are most pronounced. Recognising these patterns facilitates a more targeted analysis of how organisational issues overlap and interact. Presenting the results of thematic coding in this organised manner reinforces the credibility of the qualitative analysis. It demonstrates that themes are grounded in the actual interview data rather than derived from assumptions. This transparency supports subsequent discussions in the thesis regarding specific organisational stressors, the relation between management practices and frontline experiences, and the implications for successfully implementing TQM principles.

This representation is significant as it offers a clear and systematic overview of the predominant topics identified by each interviewee. Table 10 emphasises priority areas requiring further exploration by quantifying the frequency of key themes, such as dissatisfaction with policy changes, perceptions of blame or negativity within the work culture, and the necessity for targeted training. This approach enables the researcher to identify patterns or shared concerns more readily across multiple interviews, informing the subsequent phases of qualitative analysis and facilitating a more profound, evidence-based understanding of organisational challenges and potential interventions.

The researcher developed the codes in table 9 to assess coding reliability independently (Armstrong et al., 1997; Perreault Jr & Leigh, 1989). Subsequently, collaborative discussions with the thesis supervisors were conducted to explore each code's content, meaning, and boundaries (MacPhail et al., 2016; Sanders & Cuneo, 2010). Given the potential for varied interpretations of qualitative data, it was recommended that exploring these potential codes should be an integral part of the data analysis phase (O'Connor & Joffe, 2020; Rust & Cooil, 1994). This process of independent data coding enabled the articulation of shared and differing interpretations, challenging the researcher's perspectives and refining the codes and their respective boundaries (Montgomery & Crittenden, 1977; Syed & Nelson, 2015).

Initial Codes from Transcript (N=18)	Derived Data	Relevant Issues from Interviews
Pressure from above		Refers to top-down or external pressures such as commercial, financial, or regulatory demands that heighten stress for cabin crew (e.g., cost-cutting, airport closures, or government mandates)
Risk awareness		Deals with crew concerns about contracting/spreading COVID-19 or dealing with uncertain and potentially hazardous conditions (e.g., inconsistent quarantine, passenger interactions).
Team and peer support important		Emphasises the significance of camaraderie and mutual assistance among crew members, especially under stressful conditions.
Manpower		Involves staffing-related issues such as layoffs, reduced workforce, or the strain of covering more flights with fewer employees.
Individual responsibility		Cabin crew members' sense of personal accountability for duties, including adapting to new safety measures and maintaining service standards.
Reporting of incidents		Refers to the process and culture of reporting operational or safety incidents whether crew feel comfortable or fear repercussions for speaking up.
Need for training and experience to adapt		Highlights gaps in formal instruction and the necessity for ongoing professional development, upskilling, or orientation to new pandemic protocols.
Managing risks as part of the job		Deals with how cabin crew and management continuously assess and handle operational and health/safety risks, especially in volatile pandemic conditions.
Frustration with changes in policy and procedures		Crew complaints about frequent or unclear protocol shifts (e.g., quarantine length changes, new boarding processes) that increase confusion and stress.
Health and safety vs flight safety		Balancing health measures (PPE, social distancing) with normal flight-safety tasks; managing passenger compliance with pandemic-era mandates.
Information overload		Feeling overwhelmed by constant updates, emails, or circulars about changing rules/regulations, making it hard for crew to keep pace.

Fatigue	Physical, mental, or emotional exhaustion from long work hours, quarantine/isolation, fear of infection, or uncertain flight schedules during the pandemic.
Management and supervisors	Addresses leadership effectiveness, decision-making, and the relationship between mid-/top-level managers and frontline crew.
Training	Points to the adequacy or inadequacy of instruction and preparedness especially regarding new safety measures, crisis handling, and upskilling.
Communication	Quality and clarity of both top-down and bottom-up information sharing; includes timeliness, transparency, and effectiveness of updates.
Reporting/feedback	The crew's ability to voice concerns or suggestions, how management receives and reacts to input, and whether fear of punitive actions hinders open reporting.
Policy and procedures	New or modified official guidelines (e.g., quarantine protocols, mask mandates), how they're implemented, and whether they're consistent or cause confusion.
Blame, Negativity / culture	Atmosphere of fault-finding or lack of support among crew and leadership; fosters resentment, low morale, or fear. Can include favouritism, threatening tones, or punitive measures.
Operational pressure/High working hours	Issues related to heavier workloads or unfair scheduling due to staff reductions or increased flights. Crew feeling overworked or exhausted.
Supervisor responsibility	How on-board or mid-level managers handle leadership duties whether they enforce rules punitively or provide empathetic guidance, support, and motivation.

Table 9 Initial codes derived from the transcript data.

Transcripts																		
Codes	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18
Blame, Negativity or culture	1	14	9	16	15	4	4	12	9	12	11	18	17	7	14	8	11	4
Communication	6	8	10	9	8	1	11	9	5	6	7	5	3	5	5	13	2	4
Fatigue	0	2	2	4	0	13	0	6	6	4	5	4	5	2	1	10	8	7
Frustration with changes in policy and procedures	1	3	3	5	8	3	3	4	3	7	1	1	1	3	0	1	2	2
Health and safety vs flight safety	0	5	1	2	4	3	2	3	1	3	1	1	1	3	2	1	1	5
Individual responsibility	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Information overload	1	0	2	0	2	0	0	0	2	1	0	0	0	0	0	1	0	2
Management and supervisors	9	10	5	18	8	10	6	5	6	5	12	11	6	12	8	8	10	6
Managing risks as part of the job	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	5
Manpower	4	1	2	1	4	2	2	1	2	1	1	0	0	2	0	5	1	2
Need for training and experience to adapt	7	0	2	0	0	0	1	4	0	1	0	4	1	3	0	2	4	2
Operational pressure or High working hours	1	1	1	0	4	11	1	2	4	0	2	1	1	2	0	1	3	2
Policy and procedures	6	4	3	4	7	7	4	7	7	6	4	2	4	9	3	2	5	7
Pressure from above	8	7	9	2	5	8	3	7	9	6	8	5	7	4	4	10	1	5
Reporting of incidents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reporting or feedback	0	0	0	0	2	0	0	1	0	0	1	0	0	0	1	2	1	0
Risk awareness	0	3	1	2	3	0	1	1	0	1	1	0	0	3	4	0	2	1
Supervisor responsibility	2	3	3	4	3	3	0	0	0	0	0	0	0	1	8	1	1	1
Team and peer support important	0	0	0	1	1	2	1	2	0	1	1	0	1	0	2	2	2	1
Training	3	0	0	3	0	1	2	3	0	0	0	3	1	2	0	0	1	0

Table 10 illustrates the frequency of recurring themes identified across 18 interview transcripts.

3.4.2.2 Themes Searching

After finalising the initial coding, the subsequent step entailed identifying overarching themes. This involved categorising the initial codes into interconnected themes or categories, as Clarke and Braun (2021) recommended. The main goal at this point was to explore the semantic connections and distinctions among the initial codes, establishing their boundaries and similarities. The resulting themes from this analytical process are detailed in table 11. Table 12 then presents a frequency count of nine overarching themes, e.g., ‘Adaptive Training,’ ‘Effective Communication,’ ‘Engaged Leadership’, derived from various interview transcripts (labelled 01 through 18).

Each row corresponds to one of these themes, while each column represents a specific transcript. The numeric values indicate the frequency with which each theme was mentioned in a transcript. This visual representation is essential as it underscores the themes that occur most frequently, thereby identifying key organisational strengths, such as supportive supervision and team cohesion, alongside persistent challenges, such as high operational pressures. By charting the distribution of these themes, the table provides a systematic basis for subsequent qualitative analysis, facilitating targeted inquiries into the factors that either promote or obstruct consistent adherence to TQM principles.

Overarching themes	Explanatory Notes and Related Initial Codes	Brief Description
Operational Pressures	Combines initial codes related to workload stress, high working hours, job insecurity, and top-down financial or regulatory demands e.g., Pressure from above, Fatigue, Operational pressure/High working hours.	Focuses on the multifaceted demands placed on cabin crew, such as increased workloads, financial constraints, and high-stress environments requiring robust strategies to maintain safety and performance.
Essential Team and Peer Support	Draws from codes like Team and peer support important to reflect the shared sense of responsibility and mutual aid within cabin crews. Team and peer support important, including some aspects of 'Individual responsibility.	Underscores the critical role of solidarity and mutual assistance among cabin crew, highlighting how cohesive teamwork bolsters morale and operational resilience, especially under crisis conditions.
Adherence to Rules and Procedures	Encompasses frequent references to the need for consistent policy enforcement, frustration with unclear or rapidly changing procedures, and the desire for stable guidelines. Policy and procedures; Frustration with changes in policy and procedures.	Highlights the significance of clear, context-specific policies that uphold quality and safety standards, while also acknowledging the frustration that arises when procedures change rapidly or lack clarity.
Adaptive Training	Gathers codes calling for more robust or flexible training to handle new challenges (pandemic protocols, PPE usage), reflecting continuous professional development aligned with TQM principles. Policy and procedures; Frustration with changes in policy and procedures.	Highlights the significance of clear, context-specific policies that uphold quality and safety standards, while also acknowledging the frustration that arises when procedures change rapidly or lack clarity.
Individual Accountability	Highlights codes about personal responsibility, self-management, or accountability for service and safety tasks, reinforcing TQM's empowerment ethos. Individual responsibility; Reporting of incidents (partially).	Stresses the importance of personal responsibility, where each crew member owns their role in safety, service delivery, and overall flight operations, aligning with empowerment and quality outcomes.
Risk Awareness and Management	Brings together references to Risk awareness and Managing risks as part of the job, acknowledging the new levels of	Reflects the heightened vigilance required during crises, spotlighting how crews and management must continuously

	complexity introduced by the pandemic. Risk awareness; Managing risks as part of the job.	evaluate and mitigate risks to safeguard both staff and passengers.
Engaged Leadership	Stems from codes critiquing or praising management behaviour, e.g., Management and supervisors, Supervisor responsibility and underscores the TQM idea of leadership commitment. Management and supervisors; Supervisor responsibility.	Draws attention to the role of senior management in fostering open dialogue, aligning strategic decisions with frontline realities, and championing a culture of empathy and involvement at all organisational levels.
Supportive Supervision	Related to codes about negativity/blame culture, or inconsistent manager responses, focusing on the need for supervisors to mentor, empathise, and encourage crew members. Blame, negativity/culture; Supervisor responsibility (some aspects).	Highlights the need for direct supervisors to provide mentorship, emotional backing, and two-way feedback, ensuring that staff feel guided, appreciated, and less burdened by stressful conditions.
Effective communication	Merges codes around Communication, Reporting/feedback, and Information overload, emphasising clarity, feedback loops, and transparency for operational success. Communication; Reporting/feedback; Information overload.	Addresses the importance of timely, transparent information flows, both top-down and bottom-up, and the value of structured reporting and feedback mechanisms to enhance collaboration and continuous improvement.

Table 11 Resulting overarching themes from the analytical process.

Transcripts																		
Themes	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18
Adaptive Training	7	0	2	3	0	1	2	4	0	1	0	5	1	4	0	2	4	2
Adherence to Rules and Procedures	6	4	5	6	10	7	6	8	8	11	4	3	4	12	3	3	7	8
Effective Communication	6	8	11	9	11	1	11	9	5	6	8	5	3	5	6	14	3	6
Engaged Leadership	9	13	8	19	10	13	6	5	6	5	12	11	6	13	16	9	11	7
Essential Team and Peer Support	0	0	0	2	2	2	1	2	0	1	1	0	1	0	2	2	2	1
Individual Accountability	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Operational Pressures	9	8	12	6	7	23	4	13	14	8	13	10	10	8	5	17	10	12
Awareness and Management	0	3	1	3	3	0	1	1	0	1	1	0	0	5	4	0	2	6
Supportive Supervision	3	15	11	20	18	7	4	12	9	12	11	18	17	7	22	9	12	5

Table 12 indicates the frequency of overarching themes identified across 18 interview transcripts.

3.4.2.3 Reviewing, Defining and Naming Themes

During the thematic analysis, the researcher emphasised themes that were either not strongly supported by data or encompassed a wide range of codes. This phase followed Patton (1990) internal homogeneity and external heterogeneity criteria, ensuring that each theme's data cohered meaningfully while remaining distinct from other themes. The researcher used multiple iterations of mind maps to clarify the relationships among themes, as shown in the accompanying Table 13. All transcripts were imported into NVivo (v14). A codebook with operational definitions and inclusions/exclusions was maintained under version control (v0.1 to v0.4) and stored with date-stamped memos. Naming conventions followed theme–subtheme–code nesting (e.g., T1-Communication and Leadership to T1.2-Direction clarity to T1.2.1-Briefing specificity). Each revision note captured the rationale (e.g., merging codes for overlap; splitting codes for heterogeneity) (Clarke & Braun, 2021; Miles et al., 2014).

Reliability checks proceeded in three waves aligned to Tables 14–16: independent double-coding of early transcripts; reconciliation meetings to refine operational definitions; and a final double-coding pass to confirm stability of the ten-theme framework. Disagreements typically reflected boundary issues between communication clarity and policy change, and were resolved by sharpening distinctions between message content vs. message cadence (Fereday & Muir-Cochrane, 2006; O'Connor & Joffe, 2020).

To support confirmability, the project directory retains: raw transcripts; cleaned anonymised texts; codebook versions with change logs; analytic memos; exported node matrices; and synthesis summaries linking codes to themes (T1–T10). This material, together with the triangulation matrices (Tables 4–5), provides a traceable chain of evidence from data fragments to claims (Braun & Clarke, 2022; Miles et al., 2014). As the researcher went through this iterative process, the consistency of each theme's content improved, which helped define and name them. Ultimately, as depicted in table 13, summarised the content of each theme in a concise sentence to capture its essence.

Theme	Definition
Communication and Clarity	Refers to the effectiveness of information exchange across all organisational levels, emphasising timely updates, consistent guidelines, and two-way feedback. In a crisis, poor or delayed communication can fuel confusion, erode trust, and hinder continuous improvement, key concerns under TQM principles
Leadership and Management Responsiveness	Highlights how leaders and managers address staff concerns, provide empathetic guidance, and foster a supportive environment, especially under disruptive conditions like COVID-19. Effective, responsive leadership aligns with TQM by keeping morale high, encouraging team cohesion, and ensuring quality standards are upheld.
Training and Professional Development	Focuses on the availability and quality of instructional programs designed to upskill or reskill employees for evolving challenges, e.g., new health protocols. Ongoing professional development is essential for job satisfaction, career growth, and maintaining TQM's emphasis on continuous improvement.
Cultural Differences and Adaptation	Encompasses the strategies and challenges of managing a culturally diverse workforce, where respect for varied backgrounds can enhance team cohesion and overall performance. A culture that successfully integrates differences supports TQM's goal of collective excellence.
Risk Management and Safety Culture	Addresses how organisations identify, assess, and mitigate operational risks, highlighting the importance of a proactive safety culture, particularly under pandemic pressures. Aligned with TQM, it champions ongoing vigilance, hazard reporting, and systematic improvement of safety protocols.
Job Security and Well-being	Reflects concerns over employment stability and the mental/physical health of staff, which are critical during disruptions like a pandemic. Under TQM's people-centric approach, ensuring job security and well-being fosters trust, loyalty, and consistent service quality.
Policy and Procedural Compliance	Involves the development, clarity, and enforcement of organisational policies, such as quarantine or PPE requirements. Adherence to these evolving protocols is vital for safety and operations, but must be balanced with TQM values, e.g., avoiding procedural overload that demoralises staff.
Individual Accountability and Empowerment	Emphasises personal responsibility and the extent to which employees are empowered to make decisions on the front line. Aligning with TQM's principle of staff engagement, a sense of ownership can enhance performance, encourage initiative, and strengthen overall service quality.

Table 13 Reviewing, defining, and naming themes

3.4.2.4 Theme's reliability test and the final thematic framework

Establishing the reliability of a thematic framework in a test involves independently coding eight transcripts at different stages of the research using a predefined coding framework (Belotto, 2018). Cohen's kappa statistic measures inter-rater reliability to ensure theme agreement (González-Prieto et al., 2020). The results are then reviewed and discussed with thesis supervisors, who play a crucial role in validating the identification and consolidation of themes through inter-rater discussions and subsequent re-evaluation (Braun & Clarke, 2022). This collaborative process is instrumental in establishing a thematic framework for further analysis.

In terms of data collection and triangulation particularly observation and document analysis the study operated under constrained access. Observation comprised two research-motivated journeys as a passenger and one visit to the crew centre toward the end of the pandemic to introduce the study and clarify emerging insights. Documentary analysis drew on internal artefacts (Policy and Procedure Manuals, Cabin Crew Operational Manuals, the Corona Manual, internal memos and circulars), public statements from the airline and national authorities (e.g., Ministry of Health; National Centre for Security and Crisis Management), industry news, and organisational annual reports/financial statements. Prior professional experience functioned only as sensitising background; it informed interview design and early sense-making but was not treated as data unless subsequently corroborated by interviews or documents and logged in the audit trail. This candid delimitation is consistent with qualitative standards that privilege transparency about scope and vantage (Denzin & Lincoln, 2011; Lincoln & Guba, 1985).

To resolve the limited observational windows, the analysis implemented an explicit weighting of evidence strategy and a chain of evidence. Interviews served as the primary evidentiary base; documents established formal expectations and change chronology; and observations provided practice-proximal checks of enactment where feasible. Integration followed pattern matching and explanation building (Yin, 2018), coupled with constant comparison and 'following a thread' across sources (Miles et al., 2014). Where observation could not supply a second leg, interview and document triangulation anchored claims; dissonant evidence was preserved and discussed in peer debriefings and member checks, which, together with the reliability

procedures already reported in this subsection, enhanced credibility (Braun & Clarke, 2022; Lincoln & Guba, 1985; O'Connor & Joffe, 2020).

The audit trail (coding versions, memo sets, NVivo exports, and decision logs) records how raw materials moved to codes and themes, supporting dependability and confirmability while making visible the effect of access constraints on analytic decisions. Cohen's Kappa checks were complemented by these verification criteria; together they show that reliability was not inferred from statistics alone but demonstrated via traceable procedures and reflexive documentation. Cross-references to the triangulation inventory and matrix (Tables 4–5 in section 3.3) make clear, for each key finding, which sources corroborated the claim and where observation was flagged as 'limited vantage.' (Lincoln & Guba, 1985; Miles et al., 2014; Yin, 2018).

Accordingly, the final thematic framework rests on participants' accounts that were tested against formal policies and the available naturalistic glimpses of practice. The constraints did not compromise the framework's integrity; rather, they shaped a cautious weighting and transparent evidentiary trail that readers can inspect. This positioning is consonant with the study's interpretivist, single-case logic and with the qualitative inquiry to clarify how findings were drawn under real-world access conditions.

The Cohen's Kappa Inter-Coder Reliability test is an effective method for assessing the reliability between raters. This test quantifies the agreement between raters who classify items into mutually exclusive categories beyond what would be expected by chance (González-Prieto et al., 2020). Initially, a precise and comprehensive coding scheme is developed based on a thematic analysis of the qualitative data collected (Clarke & Braun, 2017). This coding scheme is derived from the pre-identified themes in table 13. The coding scheme assigns a code to each data segment, ensuring consistency and enabling inter-rater reliability evaluation (Roberts et al., 2019). The coding data are formatted for Statistical Package for the Social Sciences software (SPSS), with each column representing a unit of analysis (e.g., a sentence or paragraph) and each row representing the coding from different raters (Williams & Moser, 2019).

The SPSS output yields the Kappa value, indicating the level of agreement between raters. According to Landis and Koch (1977), Kappa values are interpreted as follows:

- 0.00–0.20: Slight agreement
- 0.21–0.40: Fair agreement
- 0.41–0.60: Moderate agreement
- 0.61–0.80: Substantial agreement
- 0.81–1.00: Almost perfect agreement

A Kappa value closer to 1 suggests strong agreement between the raters, signifying high reliability of the coding scheme (Thomas & Harden, 2008). Conducting a Cohen's Kappa Inter-Coder Reliability test is essential for validating the consistency of thematic analysis in qualitative research. This process enhances the credibility of the findings and ensures that the identified themes are robust and reliable, significantly contributing to the overall quality of the research (Campbell et al., 2021). The researcher examines Cohen's Kappa values for three coding processes: the first, mid, and late stages of the research. The objective is to evaluate the consistency and reliability of the thematic framework applied to eight transcripts in these three phases (González-Prieto et al., 2020).

		Transcript 1	Transcript 2	
Stage One	Communication and Clarity	1	0	1
	Leadership and Management Responsiveness	0	1	1
	Training and Professional Development	0	0	1
	Cultural Differences and Adaptation	0	0	1
	Risk Management and Safety Culture	0	0	1
	Job Security and Well-being	0	0	1
	Policy and Procedural Compliance	0	0	1
	Individual Accountability and Empowerment	0	0	1
Total		1	1	2

Table 14 Stage One * A unit of analysis (e.g., a sentence or paragraph from the transcripts)

		Symmetric Measures			
		Value	Asymptotic Standard Error ^a	Approximate T ^b	Approximate Significance
Measure of Agreement	Kappa	1.000	.000	7.483	<.001
N of Valid Cases		2			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

The analysis in table 14 yielded a Cohen's Kappa value of 1.000 from the beginning stage (stage one), indicating perfect agreement. This high level of agreement suggests that the thematic framework applied by the researcher is highly reliable. The Asymptotic Standard Error of 0.000 further confirms the precision of this estimate, while the significance level (<0.001) indicates that the agreement is statistically significant and not due to chance. This finding suggests the researcher's rigorous and highly consistent application of the coding framework (Roberts et al., 2019)

		Transcript 3	Transcript 4	Transcript 5	
Stage Two	Communication and Clarity	0	0	1	3
	Leadership and Management Responsiveness	0	0	0	1
	Training and Professional Development	1	0	0	1
	Cultural Differences and Adaptation	0	1	0	1
	Job Security and Well-being	0	0	0	1
	Individual Accountability and Empowerment	0	0	0	1
Total		1	1	1	3

Table 15 Stage Two * A unit of analysis (e.g., a sentence or paragraph from the transcripts)

Symmetric Measures

		Value	Asymptotic Standard Error ^a	Approximate T ^b	Approximate Significance
Measure of Agreement	Kappa	.714	.167	5.657	<.001
N of Valid Cases		3			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

As shown in table 15, from the mid-stage (stage two). The analysis resulted in a Cohen's Kappa value of 0.714, indicating substantial agreement according to the scale proposed by Landis and Koch (1977). While this is a robust result, it is notably lower than the perfect agreement observed from analysing the first-stage transcripts. The Asymptotic Standard Error of 0.167 reflects moderate variability in the estimate, and the significance level (<0.001) confirms that the agreement is statistically significant. The lower Kappa value compared to the researcher suggests some discrepancies in the coding process, potentially indicating a need for further alignment or calibration in the thematic framework application (Cook, 2012).

		Transcript 6	Transcript 7	Transcript 8	
Stage Three	Communication and Clarity	0	0	0	1
	Leadership and Management Responsiveness	0	0	0	2
	Training and Professional Development	0	1	0	2
	Cultural Differences and Adaptation	0	0	0	1
	Job Security and Well-being	1	0	0	1
	Individual Accountability and Empowerment	0	0	1	1
Total		1	1	1	3

Table 16 Stage Three * A unit of analysis (e.g., a sentence or paragraph from the transcripts)

		Symmetric Measures			
		Value	Asymptotic Standard Error ^a	Approximate T ^b	Approximate Significance
Measure of Agreement	Kappa	.714	.167	5.547	<.001
N of Valid Cases		3			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

As shown in table 16, the analysis achieved a Cohen's Kappa value of 0.714 in the advanced stage (stage three), indicating substantial agreement, similar to the mid-stage. The Asymptotic Standard Error of 0.167 and the significance level (<0.001) also mirror those of the mid-stage, reinforcing the reliability of the coding while highlighting potential areas of divergence. This substantial agreement suggests a strong but imperfect alignment in thematic recognition, similar to the mid-stage of analysis (Thomas & Harden, 2008).

The results indicate a clear gradient in the reliability of the thematic framework application among the three stages. The perfect agreement observed in the early stage underscores a highly effective and consistent application of the coding framework, serving as a benchmark for the other stages. However, the substantial but lower agreement observed between the mid-stage and the advanced stage suggests a need for further standardisation in the coding process to achieve a higher level of consistency (Clarke & Braun, 2017).

The disparities between the first and the other two stages could be attributed to differences in understanding or interpreting the thematic categories. Each stage of the research could also reflect the overall process, considering the researcher's experience gained through the data collection. Maintaining this alignment is crucial for upholding the integrity and credibility of

the research findings, especially in qualitative studies where subjectivity can influence the outcomes (Clarke & Braun, 2021). The final thematic framework is displayed in Table 17 below. This framework encompasses the primary themes related to the study on how TQM can enhance the resilience of the Jordanian aviation industry post-COVID-19. The table displays the final set of themes derived from the qualitative data analysis, offering concise definitions and illustrative subcategories.

Each theme, such as ‘Communication and Leadership’ or ‘Risk Management and Safety Culture’, represents a crucial dimension of TQM as it pertains to the operational, cultural, and strategic contexts examined in this study. The subcategories, e.g., ‘Information Exchange’, ‘Team Cohesion’, and ‘Hazard Reporting and Awareness’, provide specific examples of how each theme is expressed in everyday organisational practices. This representation is vital as it consolidates the core findings from various data sources, including interviews, observations, and documents, into a clear and actionable framework. By defining each theme alongside its illustrative subcategories.

Table 18 indicates the distribution of these themes across frequencies across transcripts. The table clarifies the scope of each TQM element and identifies areas that may require targeted improvements or further investigation. This thematic structure effectively connects real-world observations to established TQM principles, ensuring that subsequent discussions and recommendations are grounded in a coherent, evidence-based analytical framework.

Theme	Definition	Subcategories
T1. Communication and Leadership	Encompasses the clarity and effectiveness of information exchange, as well as leaders' ability to motivate, guide, and support staff. Under TQM principles, open dialogue and responsive leadership foster trust, reduce misunderstandings, and enhance operational performance, particularly during crises.	- Information Exchange (Top-Down and Bottom-Up). - Peer communication. - Feedback mechanisms. - Managerial responsiveness.
T2. Training and Professional Development	Captures the ongoing learning and skill-building opportunities essential for maintaining high operational standards. In line with TQM's continuous improvement ethos, well-structured training ensures the crew can adapt quickly to evolving protocols and challenges, e.g., new safety measures.	- Continuous improvement learning and development. - Skill-Building for Pandemic Challenges. - Career Progression - Adaptive Training Programs.
T3. Cultural Adaptation and Team Support	Addresses how a culturally diverse workforce navigates differences to sustain morale and mutual aid. Emphasising team cohesion and peer support is vital for safety, service quality, and TQM-driven collaboration, especially under crisis pressures or rapidly changing regulations.	- Diversity Management. - Peer Solidarity and Mutual Aid. - Team Cohesion. - Interpersonal Respect.
T4. Risk Management and Safety Culture	Focuses on identifying, assessing, and mitigating operational hazards. A proactive safety culture, in keeping with TQM ideals, encourages open reporting, continuous improvement of procedures, and collective responsibility for managing the heightened risks presented by the pandemic.	- Hazard Reporting and Awareness. - Proactive Safety Protocols. - Ongoing Risk Assessment. - Safety Responsibility.
T5. Employee Well-being and Job Security	Centres on the mental and physical health of staff, along with the stability of their employment. recognising that TQM's people-centric approach demands supportive conditions, this theme highlights how stress reduction, job security, and workforce well-being foster sustained service excellence.	- Mental Health Support. - Financial and Employment Stability. - Stress Reduction Strategies. - Retention and Engagement.

T6. Policy and Procedural Compliance	Involves consistent adherence to organisational guidelines and the clarity of those standards. Aligned with TQM's focus on standardisation and quality control, effective policy compliance reduces operational risks and staff frustration, yet must remain flexible to accommodate evolving crisis demands.	- Policy Clarity and Consistency. - Procedural Understanding. - Consistent Enforcement. - Risk Mitigation Through Compliance.
T7. Accountability and Empowerment	Refers to the extent to which individuals are responsible for their roles and empowered to make decisions. TQM principles advocate for staff ownership and autonomy, leading to heightened engagement, proactive problem-solving, and stronger overall performance.	- Role Responsibility. - Decision-Making Autonomy. - Ownership Culture. - Leadership Trust.
T8. Operational Pressures	Encompasses the intensive demands on crew and management, ranging from increased workloads to financial/reputational concerns. Under TQM, addressing these pressures effectively is crucial for maintaining quality outcomes and ensuring that excess stress does not erode service standards.	- Workload Intensity and Scheduling. - Time and Resource Constraints. - Reputational and Financial Concerns. - Fatigue Management.
T9. Effective Supervision and Supportive Practices	Highlights the on-the-ground leadership of supervisors training, mentoring, and morale-building, vital under TQM's people-first philosophy. Supportive, hands-on supervision mitigates frontline stress, encourages skill development, and aligns daily operations with broader quality objectives.	- Mentorship and Coaching. - Frontline Feedback Integration. - Staff Guidance and Recognition. - Stress/Conflict Mediation.
T10. Adaptive Operational Strategies	Examines how the organisation responds to and anticipates emerging challenges, e.g., pandemic disruptions. In line with TQM's continuous improvement cycle, it underscores strategic flexibility, resilience measures, and the ongoing refinement of practices to sustain efficiency under crisis conditions.	- Strategic Adaptability. - Efficiency Improvement. - Resilience Mechanisms. - Innovation in Crisis.

Table 17 The final thematic framework.

Transcripts																		
Theme	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18
Accountability and Empowerment (T7)	2	3	3	5	4	3	0	0	0	0	0	0	0	1	8	1	1	1
Adaptive Operational Strategies (T10)	14	4	7	5	9	7	5	11	9	8	4	6	5	14	3	5	9	13
Communication and Leadership (T1)	14	24	18	32	29	14	15	19	14	18	22	27	21	21	30	25	21	14
Cultural Adaptation and Team Support (T3)	1	14	9	16	16	6	5	13	9	13	11	18	18	7	16	10	13	5
Effective Supervision and Supportive Practices (T9)	9	13	8	20	11	14	6	7	6	6	13	11	7	13	17	11	13	7
Employee Well-being and Job Security (T5)	13	19	21	21	23	26	8	23	21	16	19	24	23	13	19	27	18	15
Operational Pressures (T8)	13	8	13	6	9	25	5	13	15	8	13	10	10	8	5	21	11	12
Policy and Procedural Compliance (T6)	7	4	6	6	11	7	6	8	10	12	4	3	4	12	3	4	7	10
Risk Management and Safety Culture (T4)	0	8	2	5	7	3	3	4	1	4	2	1	1	8	6	1	3	11
Training and Professional Development (T2)	7	2	4	7	0	14	2	9	6	5	5	8	6	6	1	12	12	9

Table 18 Frequency with which key thematic categories emerged across 18 interview transcripts.

3.5 Chapter Summary

Chapter 3 provides a detailed account of the methodological and philosophical foundations underpinning this study's investigation into how TQM principles can foster resilience within the Jordanian aviation industry. The discussion begins by explaining why an interpretivist epistemology, rather than a positivist or realist stance, offers a more suitable framework for understanding the social and technical complexities of organisational behaviour in crisis conditions (Krauss, 2005; Lincoln & Guba, 1985). Interpretivism, it is argued, allows the researcher to capture nuanced perspectives on leadership, employee engagement, and cultural dynamics that cannot be fully addressed through purely quantitative methods (Denzin & Lincoln, 2011).

Building on this philosophical foundation, the chapter describes the research design, anchored in a case study approach (Yin, 2018). The researcher focuses on a single Jordanian airline organisation, as the case organisation, selected for its national significance and for offering privileged access to key personnel and internal documents. This choice, guided by (Stake, 1995) categorisation of intrinsic, instrumental, and collective case studies, reflects the need to examine real-life airline operations and decision-making processes in a period of acute disruption. The design emphasises qualitative data collection methods, including semi-structured interviews, non-participant observations, and document analysis, as these approaches are conducive to revealing how human factors, organisational culture, and managerial strategies converge or conflict with TQM ideals (Meredith, 1993; Schwandt, 2001).

Extensive attention is paid to the data collection procedures and the ethical safeguards undertaken, with reference to Creswell and Creswell (2017) prescriptions for ensuring informed consent, protecting participant confidentiality, and obtaining Institutional Review Board approval. The researcher's background as a first-class cabin crew member is noted as a valuable insider position that facilitated participant recruitment and enhanced contextual understanding, albeit also requiring reflexive awareness to mitigate potential biases (Bell et al., 2022; Yin, 2018). Through semi-structured interviews, the study elicited employees' subjective experiences of organisational pressures, leadership styles, quality protocols, and crisis management practices. Observational data, including attendance at some

on-site training sessions, complemented these interviews by capturing the immediate workplace dynamics and the informal interactions among staff (Bate, 1997).

The chapter proceeds to discuss thematic analysis (Braun & Clarke, 2022) as the chosen analytic technique for handling qualitative data. Particular emphasis is placed on coding reliability, with references to processes such as the constant comparison technique (Glaser Barney & Strauss Anselm, 1967) and the iterative checks recommended by (Clarke & Braun, 2021). The researcher employed NVivo to manage and organise the data, employing both inductive and deductive approaches to derive and refine codes (Miles et al., 2014). Initial codes evolved into overarching themes, for instance, ‘Operational Pressures,’ ‘Adaptive Training,’ ‘Effective Communication,’ and ‘Risk Management and Safety Culture’ that map onto core TQM constructs around continuous improvement, leadership engagement, and an enabling organisational culture (Crosby, 1979; Deming, 1986a; Juran & Gryna, 1988). The chapter demonstrates how these themes were validated through Cohen’s Kappa Inter-Coder Reliability tests, which ensured alignment among different coders (González-Prieto et al., 2020).

Toward its conclusion, the chapter illustrates how case study findings can illuminate the practical implications of TQM under crisis. It highlights that beyond the formal statements in annual reports and policy manuals, the perceptions of employees spanning management to frontline cabin crew offer critical insights into whether TQM principles are genuinely integrated in everyday operations. These insights, it argues, deepen the conversation on leadership responsiveness, team cohesion, employee well-being, and accountability, especially in an industry vulnerable to geopolitical shocks and unforeseen health emergencies (Oakland, 2014; Zairi, 2013).

Chapter 3 demonstrates that an interpretivist, case study-based methodology, driven by rigorous data collection and thematic analysis, is best placed to unravel how TQM practices evolve or stall under real-world organisational constraints. By explaining data reliability, validity, and the ethical considerations vital to qualitative inquiry, the chapter sets a firm methodological base upon which the study’s subsequent empirical findings and analyses are built (Bryman, 2016; Denzin & Lincoln, 2011).

Chapter. 4 Findings

4.1 Introduction

This chapter presents the core findings derived from semi-structured interviews conducted with both cabin crew and management personnel at the sample organisation. The purpose is to uncover the critical factors influencing organisational performance during the COVID-19 pandemic and to explore how TQM principles inform resilience and adaptability in high-pressure aviation environments. Drawing on diverse participant perspectives, including current and former employees, this chapter highlights the challenges, strategies, and outcomes that emerged from rapid operational shifts and prolonged uncertainties.

Through a thematic analysis of the interview data, the discussion examines how communication, leadership, training, cultural adaptation, risk management, employee well-being, policy compliance, accountability, operational pressures, supervisory practices, and adaptive strategies each contributed to the organisation's pandemic response. By synthesising these insights, the chapter clarifies the extent to which TQM-driven initiatives, or the lack thereof, influenced overall resilience and long-term sustainability.

To foreground participants' voices while maintaining analytic clarity, quotations are selected to represent the modal view within a theme, role contrasts (cabin crew vs. managers), and deviant or disconfirming cases that refine the interpretation. Quotes are attributed with transcript IDs and reference counts; brief analytic framing before or after each extract clarifies how the segment evidences the theme and its link to crisis-time resilience. This balances transparency with synthesis (Lincoln & Guba, 1985; Miles et al., 2014).

Where multiple credible readings exist, the text explicitly signals interpretive choices (e.g., whether a passage is read as policy ambiguity vs. communication breakdown) and justifies them using the triangulation matrix (Table 5) and the coding trail. The aim is to retain the texture of lived experience without losing sight of organisational mechanisms that matter for resilience.

Finally, because crises amplify power-distance dynamics, the chapter deliberately pairs excerpts that reveal both top-down rationales and frontline consequences. This mode of presentation supports the thesis's broader argument that soft TQM elements voice, supervision quality, and psychosocial support are not ancillary but load-bearing for safe, adaptive operations under pressure.

Figure 4 provides an overview of the ten core themes identified in the data compared to the number of references coded: Communication and Leadership (T1), Cultural Adaptation and Team Support (T3), Effective Supervision and Supportive Practices (T9), Employee Wellbeing and Job Security (T5), Operational Pressures (T8), Policy and Procedural Compliance (T6), Risk Management and Safety Culture (T4), Training and Professional Development (T2), Accountability and Empowerment (T7), and Adaptive Organisational Strategies (T10). Each slice of the chart represents a theme, with its size corresponding to the number of coded references.

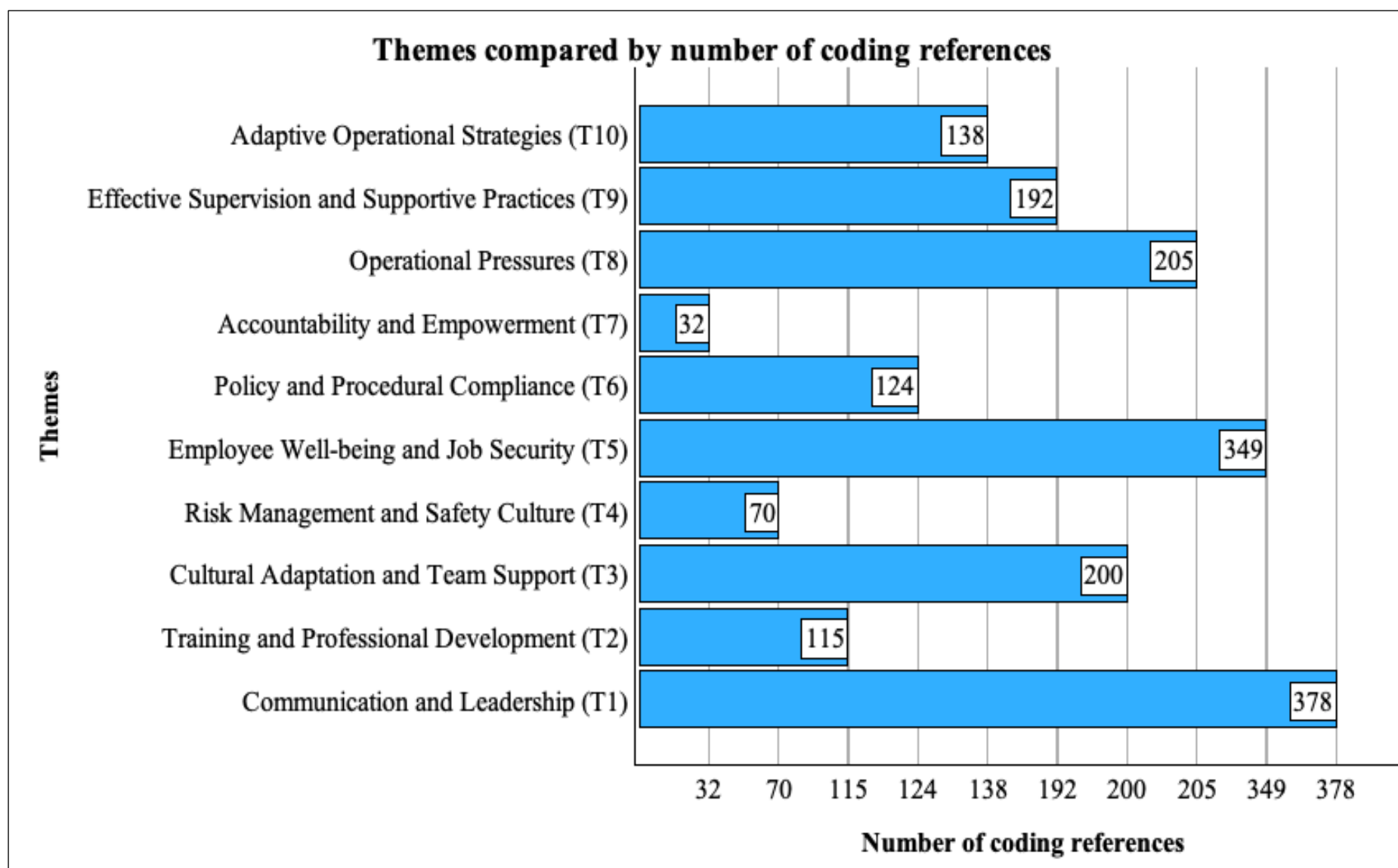


Figure 4 Themes compared by number of coding references.

4.2 Theme one: Communication and Leadership

The theme of Communication and Leadership explores the pivotal role of effective information exchange and leadership practices in shaping employee engagement, operational resilience, and organisational success during crises. Anchored in TQM principles, this theme underscores the importance of clear, timely communication, participatory decision-making, and adaptive leadership in fostering trust and operational efficiency, particularly in the high-stakes context of the aviation industry during the COVID-19 pandemic.

This theme is directly aligned with *Sub-question 3 in what ways did leadership approaches and employee engagement dynamics contribute to, or hinder, effective crisis response, as measured against TQM ideals?* which examines the role of leadership and employee engagement in the successful implementation of TQM during crises. As demonstrated in the findings, effective communication and responsive leadership are critical for fostering continuous improvement and staff involvement, key pillars of TQM. Furthermore, the challenges and solutions identified within this theme provide valuable insights for *Sub-question 5 what policy recommendations, at both organisational and industry-wide levels, emerge from this study to reinforce sustainable, employee-centric, and quality-driven practices?* highlighting practical recommendations for policymakers and industry professionals to strengthen leadership and communication structures in crisis management.

The prevalence of this theme, as depicted in Figure 5, reflects the frequency and depth of its impact, with coding references ranging from 4 to 32 per transcript. These figures illustrate widespread communication gaps and leadership challenges across the organisation, emphasising their centrality to understanding the airline's response to the pandemic.

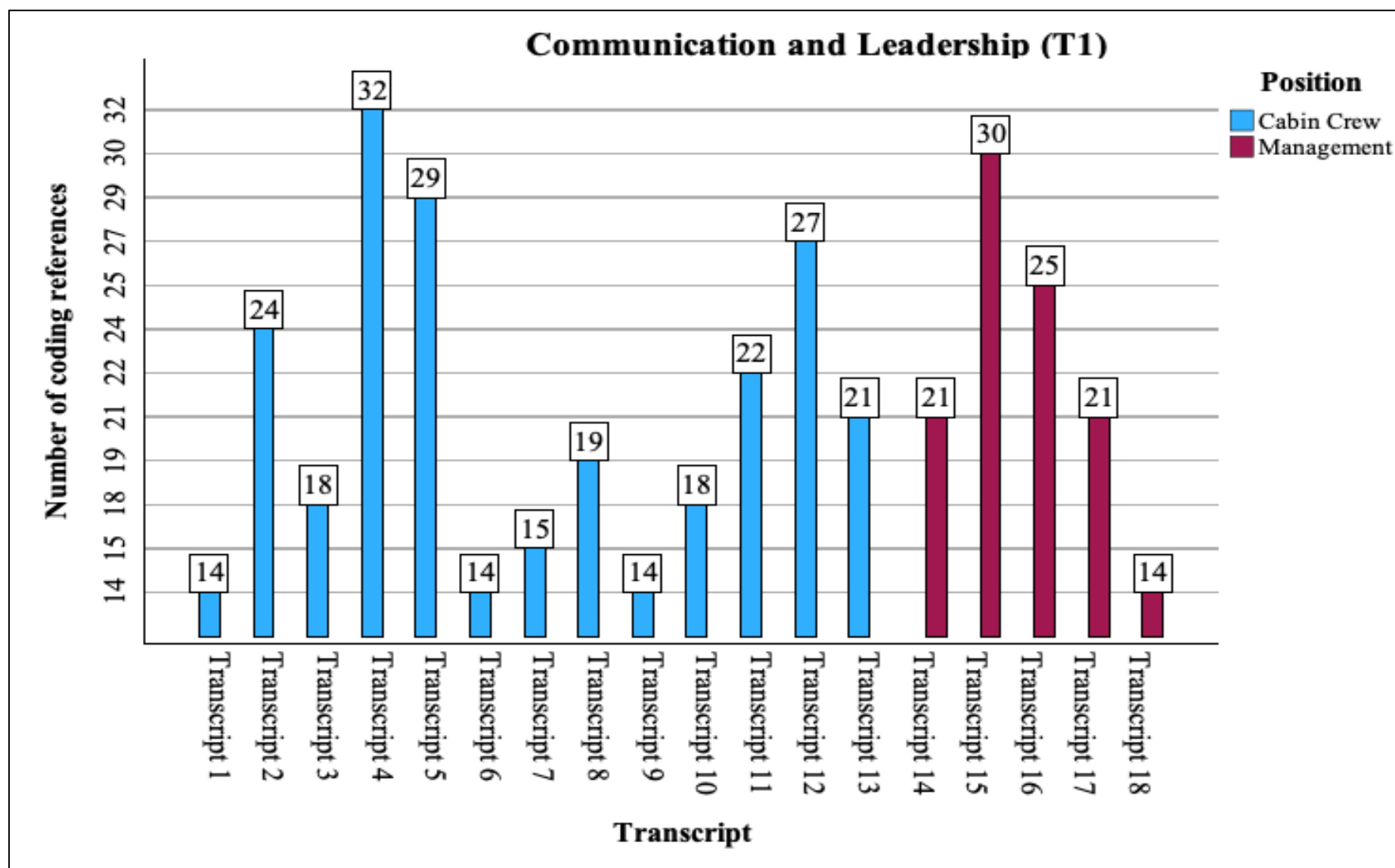


Figure 5 Coding references for communication and leadership theme across all transcripts.

The perspectives of cabin crew and management participants provide a rich and multidimensional understanding of the organisation's communication and leadership practices during the crisis. Cabin crew accounts reveal recurring themes of confusion, mistrust, emotional strain, and exclusion from decision-making processes. One cabin crew member described the situation succinctly: *'Communication was definitely a weak point... this led to a lot of confusion and mistrust'* (Transcript 01, References 2–4). This lack of clarity was compounded by the reliance on impersonal communication methods such as emails and WhatsApp messages, which many participants felt were insufficient to convey critical information effectively. As one participant noted, *'Decisions were made at the top, and we were informed via emails or WhatsApp. There wasn't much direct communication... which led to confusion and mistrust'* (Transcript 03, References 4–5). This disconnect not only undermined operational cohesion but also contributed to feelings of isolation and frustration among frontline employees.

The emotional toll of these deficiencies was profound, as cabin crew members repeatedly highlighted the stress and perceived neglect they experienced. One participant observed, *'We were dealing with so much uncertainty, and instead of supporting us, the management seemed more focused on keeping operations going no matter the cost'* (Transcript 02, Reference 8). Such accounts reveal a perception among employees that their well-being was subordinated to the organisation's operational priorities, an approach that contradicts TQM's emphasis on employee engagement as a driver of organisational success. Another participant described the atmosphere as one of mistrust, stating, *'The company's handling of things made it clear they didn't value us'* (Transcript 09, Reference 14). As might be imagined though, this was often matched with an acute recognition that balancing the books during a crisis was no small undertaking, and that organisations such as this had no explicit model to follow prior to Covid-19.

Problematically, though, feeling excluded from management decision-making processes further exacerbated these challenges. Many cabin crew members felt marginalised in the organisational hierarchy, with decisions being made unilaterally by senior management. As one participant explained, *'Decisions were made at the top without much input from us or even our direct managers'* (Transcript 01, Reference 5). Another remarked, *'Listening to those of us who are on the front lines would have made a big difference'* (Transcript 01, Reference 9). This

exclusion not only alienated employees but also deprived the organisation of valuable frontline insights, a critical oversight given TQM's emphasis on participatory decision-making and continuous improvement.

From the management perspective, participants acknowledged many of the same challenges, providing insights into the organisational and structural factors that contributed to these issues. One manager described the initial chaos of the pandemic as exposing the inadequacy of existing strategies, stating, *'The pandemic forced us to rethink everything, from safety protocols to crew management... the existing strategies were inadequate, and we had to reorient quickly'* (Transcript 14, References 3–4). However, this reorientation was uneven, and the hierarchical communication structures often hindered the timely and effective dissemination of information. Another manager reflected on the disconnect between senior management and frontline staff, noting, *'It often felt like management was disconnected from what we were dealing with on the ground'* (Transcript 17, Reference 7). This sentiment highlights the structural barriers that impeded responsive and adaptive leadership during the crisis.

The transition in leadership styles over the course of the pandemic further complicated these dynamics. While some managers initially adopted a supportive approach, many participants reported a shift toward authoritarianism as the crisis prolonged. One manager recounted, *'Initially, they were side by side with us, but later on, they started enforcing the rules more strictly... it was as if they were saying, We've supported you enough; now you need to follow the rules to the letter'* (Transcript 15, References 5–8). This shift not only strained relationships but also eroded morale, as employees perceived the change as a lack of empathy and support.

Despite these challenges, there were instances of adaptive and inclusive leadership that offer valuable lessons for future crises. Some managers actively sought to rebuild trust and foster open communication, as illustrated by one participant's account: *'The new management... started having meetings with us pilots, engineers, cabin crew to discuss challenges... they encouraged open communication, which was a big shift from the past'* (Transcript 16, References 9–10). These efforts to engage employees and prioritise transparent communication reflect the principles of participatory leadership and iterative feedback loops advocated by TQM.

To illustrate how communication quality conditioned resilience during the crisis, crew repeatedly contrasted top-down updates with the need for dialogic briefings. As one cabin crew member put it, *'Communication was definitely a weak point... this led to a lot of confusion and mistrust'* (Transcript 01, References 2–4). Others emphasised the channel and tone of messaging. *'Decisions were made at the top, and we were informed via emails or WhatsApp... which led to confusion and mistrust'* (Transcript 03, References 4–5). These accounts signal that information flow without interaction did not enable sense-making or local problem solving capabilities central to crisis resilience and to TQM's emphasis on timely feedback and visual management (Womack, 1996).

Participants also linked clarity and inclusion to trust under pressure. *'We were dealing with so much uncertainty, and instead of supporting us, the management seemed more focused on keeping operations going no matter the cost'* (Transcript 02, Reference 8); *'The company's handling of things made it clear they didn't value us'* (Transcript 09, Reference 14). Such perceptions indicate an erosion of psychological safety that limited upward voice precisely when frontline intelligence was most needed. From a socio-technical perspective, the 'human' subsystem (trust, morale) and 'technical' subsystem (rapidly changing procedures) were mis-aligned; without attention to both, coordination faltered (Pasmore et al., 2019).

Importantly, interviewees also described counter-examples that supported recovery. *'The new management... started having meetings with us pilots, engineers, cabin crew to discuss challenges... they encouraged open communication'* (Transcript 16, References 9–10). This move towards participatory briefings and regular two-way forums mirrored a TQM learning loop: immediate issues were surfaced, checked, and adjusted, reinforcing collective efficacy and stabilising operations despite uncertainty (Pasmore et al., 2019; Womack, 1996).

The findings from this analysis underscore the critical role of communication and leadership in shaping organisational resilience during crises. The pervasive communication gaps and hierarchical barriers highlighted in this study reveal significant areas for improvement, particularly in aligning management practices with TQM principles. Effective leadership and transparent communication are prerequisites for sustaining employee engagement and collaborative problem-solving, both of which are essential for navigating complex crises. By fostering a culture of trust and inclusion, organisations can not only enhance their immediate crisis response but also build a stronger foundation for long-term success.

4.3 Theme two: Training and Professional Development

The theme of Training and Professional Development underscores the critical importance of equipping employees with the skills and knowledge necessary to adapt to evolving challenges, particularly during crises. Grounded in TQM principles, which emphasises continuous improvement, this theme highlights how structured training programs can foster resilience, enhance operational efficiency, and promote employee engagement. The findings reveal significant gaps in the organisation's training and professional development practices, particularly in the context of the COVID-19 pandemic. These deficiencies had far-reaching implications for morale, service quality, and crisis management effectiveness.

This theme aligns closely with *sub-question 3 in what ways did leadership approaches and employee engagement dynamics contribute to, or hinder, effective crisis response, as measured against TQM ideals?* which explores the role of leadership and employee engagement in implementing TQM during crises. Effective training is central to empowering employees and enhancing their capacity to engage with leadership initiatives, particularly under uncertain and high-stress conditions. Furthermore, the findings inform *sub-question 4 what enhancements or adaptations to conventional TQM models are warranted, given the crisis experiences observed in the Jordanian aviation sector?* which focuses on tailoring TQM enhancement models to specific contexts. The evidence suggests that context-specific training programs, addressing both technical and emotional dimensions, are essential for aligning organisational practices with TQM principles.

The prevalence of this theme is evident in the coding frequency across transcripts, as shown in Figure 6. With references ranging from 1 to 18, the data highlight widespread concerns about the adequacy of training and professional development during the pandemic. These concerns reflect the perspectives of both cabin crew and management participants, providing a comprehensive view of the challenges and potential solutions.

The perspectives of cabin crew members reveal significant dissatisfaction with the lack of crisis-specific training, which left many feeling unprepared to handle the unique demands of

the pandemic. One participant remarked, *'No specific training was provided to deal with the pandemic... we were largely left to figure things out independently, which was stressful because none of us knew what to do initially'* (Transcript 01, References 1–2). This sentiment was echoed by another crew member, who stated, *'Over time, we adapted, but it was more about learning on the job rather than being properly prepared'* (Transcript 01, Reference 3). Such accounts underscore the absence of proactive and structured training programs, which are essential for fostering employee readiness and operational resilience.

The lack of formal guidance forced employees to rely on trial-and-error learning, which often led to heightened stress and anxiety. One crew member described the experience as *'a lot of stress, especially when we were still flying on repatriation flights'* (Transcript 03, Reference 2). The strict quarantine procedures further exacerbated these challenges, as participants highlighted the physical and mental toll of being away from their families for extended periods. One respondent noted, *'The quarantine procedures were very strict; after each flight, we had to quarantine for 14 days, which added to the stress'* (Transcript 03, Reference 3). These findings align with TQM literature, which emphasises the need for comprehensive training frameworks that address both technical and psychological dimensions (Pasmore et al., 2019).

Another critical issue highlighted by cabin crew members was the failure to integrate mental health support into training programs. While technical training on COVID-related procedures was provided, participants reported that the emotional and psychological aspects of the crisis were largely ignored. One crew member explained, *'We were trained to handle COVID-related procedures on board, but the mental aspect was largely ignored'* (Transcript 06, Reference 7). Another participant emphasised the cumulative impact of inadequate training and lack of support, stating, *'The stress, the lack of support, and the feeling that management wasn't on our side added up'* (Transcript 17, Reference 10). These accounts highlight the importance of adopting a holistic approach to training, one that integrates emotional well-being into the broader framework of professional development.

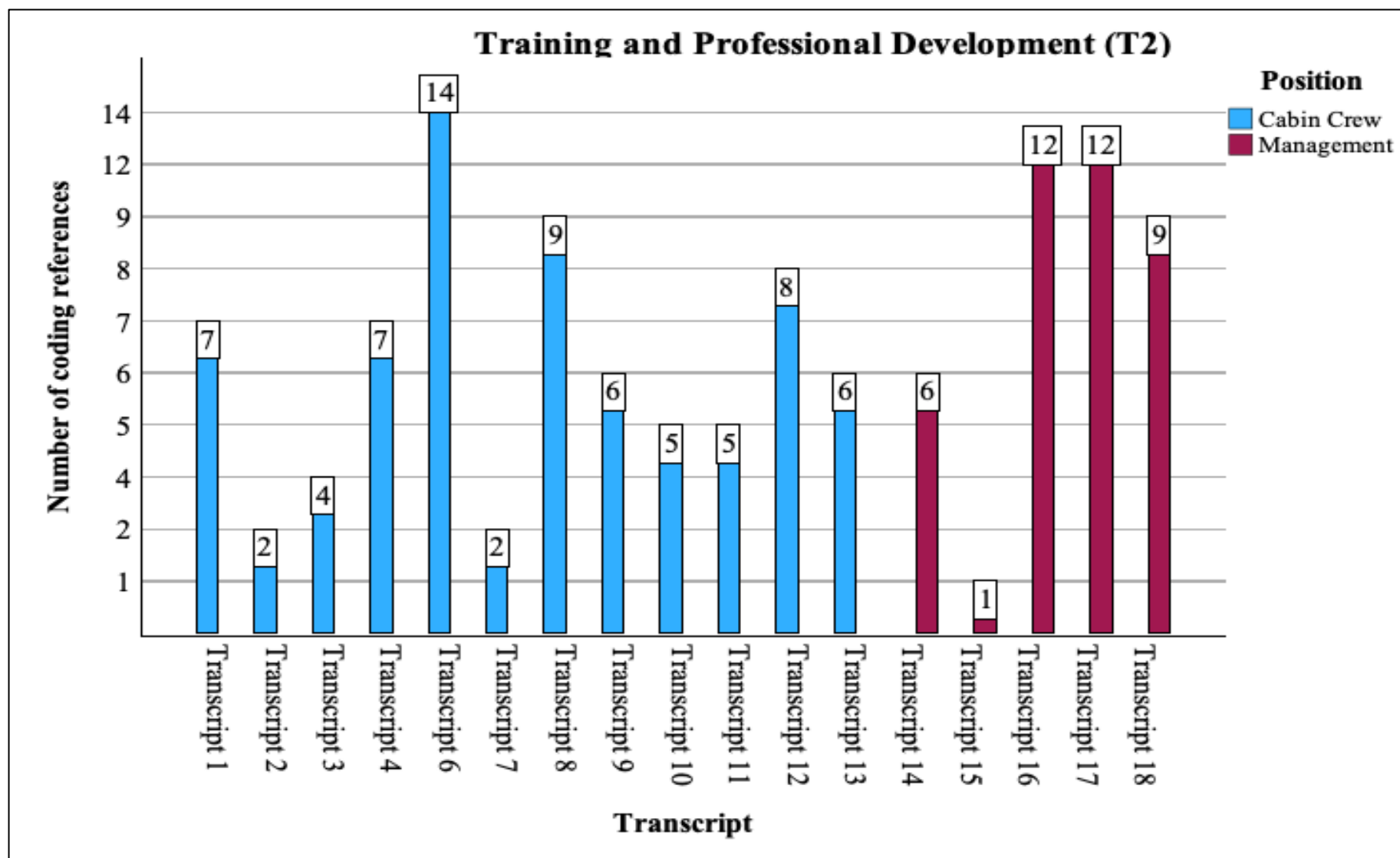


Figure 6 Coding references for training and professional development theme across all transcripts.

Participants also expressed a strong desire for more comprehensive and targeted training programs that could better prepare them for the challenges of crisis management. One crew member suggested, *'Training sessions and seminars could also help improve communication skills on both sides'* (Transcript 04, Reference 4). Another emphasised the value of soft skills training, stating, *'Soft skills training is just as important as technical skills... Cabin crew need to be confident in their work and educated on communicating effectively with their managers and colleagues'* (Transcript 04, References 5–6). These insights underscore the need for training programs that go beyond technical proficiency to include interpersonal and adaptive skills, which are critical for navigating complex and dynamic crises.

Management participants provided additional perspectives on the limitations of existing training frameworks and the efforts to address these gaps. One manager acknowledged the inadequacy of pre-pandemic training models, stating, *'The pandemic forced us to rethink everything... Training on risk management was ramped up, and we started to build more comprehensive support platforms for our employees'* (Transcript 14, References 3–5). However, these efforts were often reactive and insufficient to meet the immediate needs of the workforce. Another manager highlighted the psychological toll on employees, noting, *'The stress levels were through the roof, and we weren't classified as having dangerous roles, even though the risk was there'* (Transcript 14, Reference 3). This acknowledgement reflects the broader challenges of integrating mental health considerations into training and professional development programs.

Despite these challenges, some managers recognised the potential for training programs to enhance resilience and employee engagement. One participant reflected, *'It wasn't just about survival; it was about learning and adapting... focusing on training, support, and clear communication will be crucial as we move forward'* (Transcript 14, References 4, 6). This perspective highlights the strategic importance of training as a lever for organisational transformation, particularly in the context of TQM's emphasis on continuous improvement.

The findings from this analysis reveal significant gaps in the organisation's approach to training and professional development, with far-reaching implications for employee morale, service quality, and crisis management effectiveness. The absence of robust, context-specific training programs undermined the organisation's ability to foster employee engagement and operational

resilience, directly impacting *sub-question 3, in what ways did leadership approaches and employee engagement dynamics contribute to, or hinder, effective crisis response, as measured against TQM ideals?* Furthermore, the evidence underscores the need for tailored TQM enhancement models that integrate specialised training modules, including crisis simulations, mental health support, and adaptive skill-building initiatives. These findings inform *sub-question 4, what enhancements or adaptations to conventional TQM models are warranted, given the crisis experiences observed in Jordanian aviation sector?* highlighting the critical role of training in aligning organisational practices with TQM principles.

From a broader perspective, the psychological impact of training deficiencies underscores the importance of addressing the socio-technical dimensions of crises. Comprehensive training programs must not only equip employees with technical skills but also provide the emotional support necessary to navigate high-pressure environments. One crew member aptly summarised this sentiment, stating, *'We have to be prepared and supported if we're going to provide the best service to passengers'* (Transcript 03, Reference 4). By adopting a more proactive and holistic approach to training, the organisation can strengthen its resilience, enhance employee well-being, and uphold the principles of TQM in the face of future crises.

4.4 Theme three: Cultural Adaptation and Team Support

The theme of Cultural Adaptation and Team Support explores the challenges and opportunities faced by a culturally diverse workforce in navigating crises. This theme highlights the importance of team cohesion, mutual respect, and interpersonal solidarity in sustaining morale and ensuring operational continuity during the COVID-19 pandemic. The findings demonstrate that while informal peer support networks provided crucial assistance, hierarchical organisational structures and cultural tensions often hindered effective collaboration. Drawing on TQM principles, which emphasise teamwork, inclusivity, and mutual respect, the analysis underscores how culturally sensitive approaches and stronger team dynamics are essential for crisis adaptation and long-term organisational resilience.

This theme aligns closely with *sub-question 3, in what ways did leadership approaches and employee engagement dynamics contribute to, or hinder, effective crisis response, as measured*

against TQM ideals? which investigates the role of leadership and employee engagement in TQM implementation. Effective team support and cultural alignment are critical in promoting employee engagement and fostering collaboration, particularly in high-stress situations. Furthermore, the findings contribute to *sub-question 1, which core TQM principles are most relevant for crisis management in the aviation sector, and how were they operationalised (or not) during the COVID-19 pandemic?* by illustrating how TQM's emphasis on a collaborative culture manifests in practice while informing *sub-question 5, what policy recommendations, at both organisational and industry-wide levels, emerge from this study to reinforce sustainable, employee-centric, and quality-driven practices?* by identifying actionable recommendations to enhance team dynamics and cultural adaptation strategies.

As depicted in Figure 7, the prevalence of this theme is evident in its high coding frequency across transcripts, ranging from 1 to 18 references. These references reflect widespread concerns among employees and managers about the impact of cultural and interpersonal dynamics on morale, trust, and operational efficiency during the pandemic.

The experiences of cabin crew members reveal the centrality of peer support in mitigating the stress and uncertainty caused by inconsistent management practices. One participant remarked on the absence of managerial support, stating, *'Many of us felt unsupported and unsafe... The stress, the lack of support, and the feeling that I wasn't valued made it impossible to stay'* (Transcript 02, References 6, 14). To compensate for this perceived neglect, crew members formed informal support networks, such as WhatsApp groups, to share information and provide mutual aid. However, as one participant explained, *'We ended up creating a WhatsApp group... but it felt too informal for such a serious situation'* (Transcript 10, Reference 4). While these efforts exemplify the resilience and solidarity of the workforce, they also underscore the inadequacy of formal structures for fostering team cohesion and addressing employee concerns.

The lack of effective communication from management further eroded trust and morale. Several crew members expressed frustration with the limited and often inconsistent information provided by leadership. One participant described the situation as follows: *'There wasn't much direct communication with the crew, which led to confusion and mistrust'* (Transcript 03, Reference 1). Another noted, *'It felt like the company was more focused on getting back to normal operations than on our well-being'* (Transcript 08, Reference 5). These sentiments

highlight a disconnect between organisational priorities and employee needs, which undermined the workforce's confidence in leadership.

Cultural differences and hierarchical norms added another layer of complexity to team dynamics. Multiple participants pointed out how local cultural factors, such as religion, societal connections, and hierarchical deference, influenced workplace relationships and decision-making processes. One crew member explained, *'Social aspects, such as religion and societal connections, also affect how crew members are treated and scheduled, leading to frustration'* (Transcript 12, Reference 6). This observation reflects broader challenges in managing a diverse workforce, where cultural norms can sometimes reinforce inequality or inhibit open dialogue. For example, disparities between cabin crew and pilots in terms of privileges and decision-making authority were frequently cited as a source of tension. These dynamics echo earlier research on TQM, which stresses the importance of breaking down silos and fostering cross-functional collaboration (Womack, 1996).

Despite these challenges, the resilience and solidarity of the workforce were evident in the ways employees supported each other during the crisis. Peer support played a crucial role in maintaining morale and operational continuity. One participant emphasised this point, stating, *'We needed to feel supported by each other because management wasn't addressing our concerns'* (Transcript 03, Reference 7). These accounts illustrate the potential of team-based approaches to mitigate stress and foster collaboration, even in the absence of formal management support. However, they also highlight the need for organisations to institutionalise such practices through structured interventions that align with TQM principles of inclusivity and teamwork.

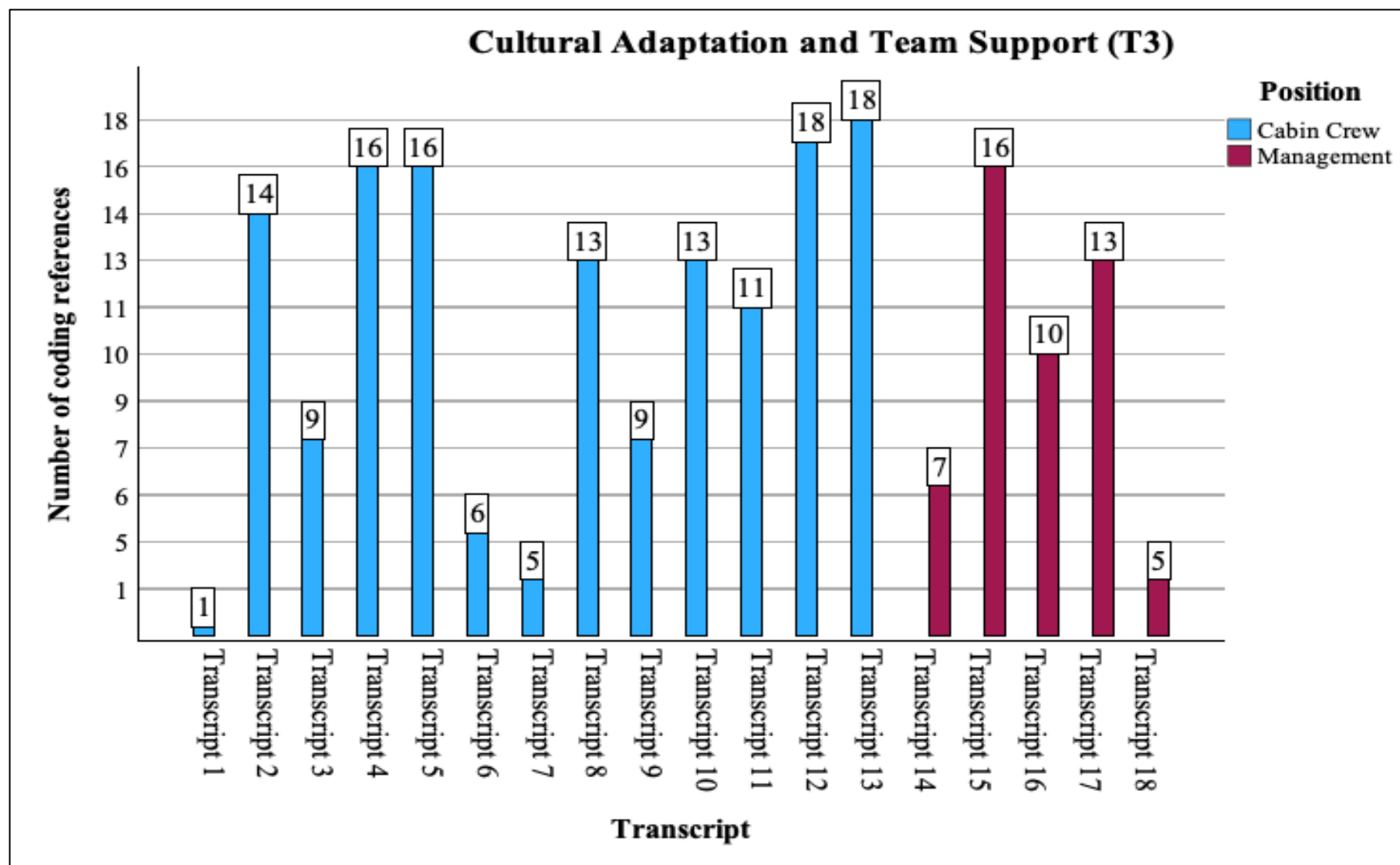


Figure 7 Coding references for cultural adaptation and team support theme across all transcripts.

The management perspective provides additional insights into the organisational and cultural barriers that hindered effective team support. Several managers acknowledged the limitations of traditional hierarchical structures in fostering open communication and addressing employee concerns. One manager admitted, *'The organisational culture here is quite hierarchical, sometimes making it difficult for the crew to voice concerns or suggestions'* (Transcript 14, Reference 4). This admission reflects the structural constraints that perpetuate silos and inhibit trust-building within the organisation.

Some managers reported attempts to adopt more inclusive leadership approaches during the pandemic. One participant noted, *'There was more emphasis on value-based leadership... although there is still a long way to go regarding truly empowering the crew'* (Transcript 14, Reference 5). While these efforts represent a step in the right direction, they were often inconsistent and insufficient to address the deep-seated issues of favouritism and inequality within the organisation. Another manager highlighted this issue, stating, *'Much negativity stems from issues like favouritism and a lack of growth opportunities... we also need to address the negativity within the organisational culture'* (Transcript 15, References 11, 15). These insights underscore the importance of systemic cultural reforms in promoting team cohesion and mutual respect, both of which are foundational to TQM.

The findings from this analysis have significant implications for TQM implementation and organisational resilience. From a TQM standpoint, the absence of strong team cohesion and culturally sensitive practices undermines employee engagement and leadership effectiveness, directly impacting *sub-question 3, in what ways did leadership approaches and employee engagement dynamics contribute to, or hinder, effective crisis response, as measured against TQM ideals?* The evidence also highlights the need for organisations to prioritise team-based strategies and cultural alignment to foster resilience and adaptability during crises.

The data inform sub-question 5, what policy recommendations, at both organisational and industry-wide levels, emerge from this study to reinforce sustainable, employee-centric, and quality-driven practices? by identifying several policy-level recommendations for enhancing team dynamics and cultural adaptation. These include implementing cross-cultural training programs to address local norms and biases, establishing formal peer-support systems to complement informal networks, and creating transparent mechanisms for addressing

favouritism and inequality. By aligning these interventions with TQM principles of mutual respect and inclusivity, organisations can build a more cohesive and resilient workforce.

To summarise, the theme of Cultural Adaptation and Team Support reveals the profound influence of cultural and interpersonal dynamics on employee morale, trust, and collaboration during crises. While informal peer support networks provided a critical safety net, the findings underscore the need for more structured and inclusive approaches to team building and cultural management. By addressing the structural and cultural barriers identified in this study, organisations can create an environment that supports both individual well-being and collective success, aligning with the principles of TQM and preparing for future challenges.

4.5 Theme four: Risk Management and Safety Culture

The theme of Risk Management and Safety Culture explores the organisation's capacity to identify, assess, and mitigate risks during the COVID-19 pandemic. It highlights the intersection of operational hazards and safety procedures within the context of heightened uncertainty and unprecedented challenges. This theme reflects the critical role of safety culture rooted in TQM principles that prioritises proactive risk assessment, collective responsibility, and continuous improvement. The findings reveal that while management efforts to adapt to pandemic-related risks were evident, lapses in communication, inconsistent safety measures, and psychological stress among staff often undermined the efficacy of these efforts.

This theme aligns closely with *sub-question 1, which core TQM principles are most relevant for crisis management in the aviation sector, and how were they operationalised (or not) during the COVID-19 pandemic?* which examines the application of TQM principles to crisis management. It also addresses *sub-question 2, How did COVID-19 contingencies, both external (e.g., rapidly changing health regulations) and internal (e.g., financial pressures) impact operational aspects of the Jordanian aviation sector?* by demonstrating how the pandemic reshaped safety protocols and operational strategies while contributing to *sub-question 4, What enhancements or adaptations to conventional TQM models are warranted, given the crisis experiences observed in the Jordanian aviation sector?* by identifying how TQM principles can be adapted to local aviation contexts in Jordan.

The prominence of this theme is reflected in Figure 8, with coding frequencies ranging from 1 to 11 across transcripts. These references underscore the centrality of risk management and safety concerns during the pandemic, particularly as staff grappled with inconsistencies in safety protocols and the psychological toll of their roles.

The perspectives of cabin crew members provide a vivid depiction of the operational and psychological challenges encountered during the pandemic. Many participants described the confusion and stress resulting from unclear quarantine and testing protocols. One participant explained, *'Even when we had been in contact with passengers who tested positive... we were still sent home rather than being appropriately quarantined'* (Transcript 02, Reference 2). Another highlighted the lack of appropriate procedures when they contracted COVID-19, stating, *'I tried to contact the emergency number they gave us, but I was just told to stay at home, even though I had serious symptoms'* (Transcript 02, Reference 3). These inconsistencies in safety measures eroded crew confidence in the organisation's commitment to their well-being, revealing critical gaps in the alignment between TQM principles of proactive risk management and their operational application.

The pervasive fear of exposure to the virus added a significant psychological burden for cabin crew, who often worked in confined spaces with limited protective measures. One participant remarked, *'We had to adapt to new policies, like wearing PPE and social distancing on board, which wasn't easy in such a confined space... the fear of getting sick was always there'* (Transcript 08, References 1–2). Another emphasised the difficulty of enforcing safety measures, explaining, *'Social distancing on board was almost impossible to enforce effectively'* (Transcript 08, Reference 4). These accounts reveal the socio-technical challenges of implementing real-time safety measures, where operational realities often clashed with policy expectations. Such challenges align with socio-technical systems theory, which highlights the need to integrate technical solutions with human-centered approaches to enhance effectiveness and trust (Pasmore et al., 2019).

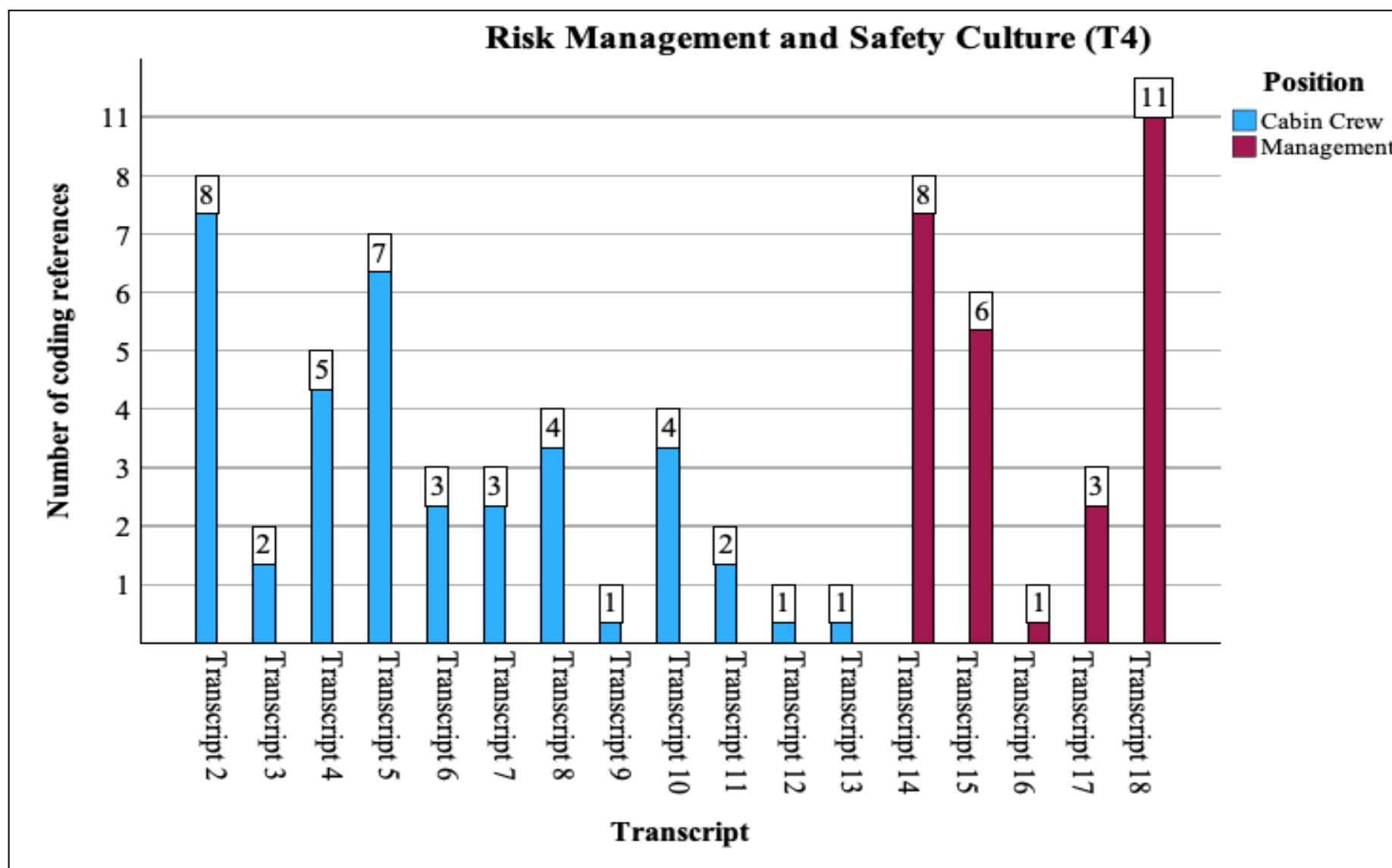


Figure 8 Coding references for risk management and safety culture theme across all transcripts.

The contradictions in safety protocols further compounded the stress experienced by employees. One participant noted, *'Passengers had to remove their masks to eat, which made enforcing strict procedures seem pointless'* (Transcript 10, Reference 3). Another recounted being told to gather in hotel lobbies during quarantine, which contradicted the stated goal of avoiding contact: *'We were told to meet in the hotel lobby, which made no sense because we were supposed to be avoiding contact'* (Transcript 10, Reference 4). These inconsistencies not only undermined the perceived credibility of safety measures but also contributed to a sense of futility and frustration among staff.

Crew testimonies show how contradictory rules impeded risk sense-making. *'We had to adapt to new policies... the fear of getting sick was always there'* (Transcript 08, References 1–2); yet *'social distancing on board was almost impossible to enforce effectively'* (Transcript 08, Ref 4). When mask removal for meals or hotel-lobby gatherings were permitted, participants described a *'futility'* that weakened commitment to other controls. In short, ambiguity increased perceived risk and reduced the credibility of safeguards.

At the same time, respondents recognised the scale of the shock and the need to mature risk systems: *'A global pandemic wasn't on our radar... we quickly realised the need for a more robust risk management framework'* (Transcript 14, References 6–8). This aligns with a socio-technical reading of safety: procedures must be coherent with task constraints, and workers must be engaged in reporting mismatches so that controls are jointly optimised (Pasmore et al., 2019). Where this engagement occurred, fear was contained and workarounds were replaced with clearer routines.

Resilience, then, hinged on consistency and participatory updates. Participants pointed to practical fixes already attempted (e.g., iterative 'Corona' manuals, targeted briefings) but also implied that stronger open-reporting channels and rapid feedback cycles were needed to consolidate learning between flights. In TQM terms, this is the shift from ad hoc controls to standard work refined through continual improvement, visibly reducing uncertainty and restoring confidence (Womack, 1996).

From the management perspective, participants acknowledged the limitations of traditional risk management frameworks, which were largely unprepared for a crisis of this scale. One manager

admitted, *'A global pandemic wasn't on our radar... we quickly realised the need for a more robust risk management framework'* (Transcript 14, References 6–8). Another emphasised the need to adapt rapidly, stating, *'We had to quickly develop new strategies for managing the risks associated with the virus, from ensuring the safety of our staff to maintaining operational continuity despite frequent disruptions'* (Transcript 18, Reference 7). These reflections highlight the reactive nature of the organisation's initial response and the subsequent shift toward more proactive risk management practices.

Managers also noted the psychological toll of the pandemic on both staff and leadership. One participant described the heightened stress levels among employees, explaining, *'The stress levels were through the roof, and we weren't classified as having dangerous roles, even though the risk was there'* (Transcript 14, Reference 4). Another reflected on the broader implications of the crisis, stating, *'We've learned a lot from this crisis, and I believe these lessons will help us build a more resilient and robust aviation sector'* (Transcript 18, References 10–11). These insights underscore the need for a holistic approach to risk management that prioritises both operational efficiency and employee well-being.

The findings from this theme have significant implications for TQM and organisational resilience. From a TQM perspective, the lack of clear and consistent safety protocols undermined employee confidence and operational effectiveness, highlighting the need for a proactive and standardised approach to risk management. These challenges directly address *sub-question 1, which core TQM principles are most relevant for crisis management in the aviation sector, and how were they operationalised (or not) during the COVID-19 pandemic?* by demonstrating how TQM principles, such as open reporting and continuous improvement, can be applied to crisis management.

The pandemic also revealed the socio-technical complexity of implementing safety measures, as reflected in *sub-question 2, how did COVID-19 contingencies, both external (e.g., rapidly changing health regulations) and internal (e.g., financial pressures) impact operational aspects of the Jordanian aviation sector?* The contradictory policies and operational inconsistencies experienced by crew members underscore the need for a holistic approach that integrates technical solutions with human-centered considerations. For example, formalising open reporting mechanisms and ensuring transparent communication about safety protocols could address the confusion and mistrust experienced during the crisis.

Finally, the findings inform *sub-question 4, what enhancements or adaptations to conventional TQM models are warranted, given the crisis experiences observed in the Jordanian aviation sector?* by highlighting the importance of tailoring TQM principles to the local context. Managers' reflections on the need for a more robust risk management framework suggest that localised safety strategies such as culturally sensitive communication practices and specialised training programs are essential for enhancing resilience in Jordan's aviation sector. One manager remarked, *'We realised we must keep adapting... hopefully these lessons will build a more resilient and robust aviation sector'* (Transcript 18, References 10–11).

To summarise, the theme of Risk Management and Safety Culture underscores the critical relation between operational realities and TQM-driven safety commitments. By addressing the gaps identified in this study including inconsistent protocols, inadequate communication, and psychological stress, organisations can strengthen their safety culture and enhance their readiness for future crises. Aligning these efforts with TQM principles of collective responsibility and continuous improvement will be essential for building a resilient and sustainable aviation sector.

4.6 Theme five: Employee Well-being and Job Security

The theme of Employee Well-being and Job Security explores the profound challenges faced by airline staff during the COVID-19 pandemic, including the psychological strain, financial instability, and fear of job loss. At its core, this theme reflects the importance of TQM's people-centric approach, which emphasises the need to support employees to ensure organisational resilience and sustained service excellence. The findings reveal that pandemic-induced disruptions, including inconsistent managerial support, limited mental health resources, and pervasive financial stress, significantly undermined morale, workforce engagement, and operational continuity.

This theme aligns with *sub-question 3, in what ways did leadership approaches and employee engagement dynamics contribute to, or hinder, effective crisis response, as measured against TQM ideals?* as it examines how leadership impacts employee well-being and engagement,

both of which are critical for TQM implementation. It also addresses *sub-question 2, how did COVID-19 contingencies, both external (e.g., rapidly changing health regulations) and internal (e.g., financial pressures) impact operational aspects of Jordanian aviation sector?* illustrating the personal and professional impact of the pandemic on employees, and *sub-question 5, what policy recommendations, at both organisational and industry-wide levels, emerge from this study to reinforce sustainable, employee-centric, and quality-driven practices?* offering policy-level recommendations to safeguard employee welfare during crises.

The widespread nature of these concerns is evident in Figure 9, which illustrates that Employee Well-being and Job Security were among the most frequently referenced topics across transcripts, with coding frequencies ranging from 8 to 27. The extensive references reflect the centrality of this theme in understanding how the pandemic affected staff and organisational dynamics.

Cabin crew perspectives illustrate the emotional and financial challenges that defined their experience during the pandemic. One recurring issue was the uncertainty surrounding job security and income stability. One participant remarked, *'The salary cuts were tough... We had colleagues who lost their jobs, particularly our foreign colleagues, which was heartbreaking. It created a lot of stress and insecurity'* (Transcript 01, References 4–7). This uncertainty was compounded by the abruptness of organisational decisions, including layoffs and contract terminations, which left employees feeling vulnerable and undervalued. Another crew member shared, *'The uncertainty, the stress, and the lack of support made it hard to stay... I loved being a cabin crew member, but the situation became too overwhelming'* (Transcript 11, References 12–13).

Financial strain emerged as a central concern for many employees, who faced reduced income coupled with additional costs such as self-funded PCR tests. One participant explained, *'There was also a lot of pressure because we had to pay for our own tests, which cost around 50 JD'* (Transcript 10, Reference 3). These economic pressures were exacerbated by the loss of allowances and reduced operational hours, further deepening employees' financial instability. Another participant remarked, *'Our basic salaries weren't enough to live on, especially since the crew transportation service was cut due to cost-saving measures'* (Transcript 09, Reference 9).

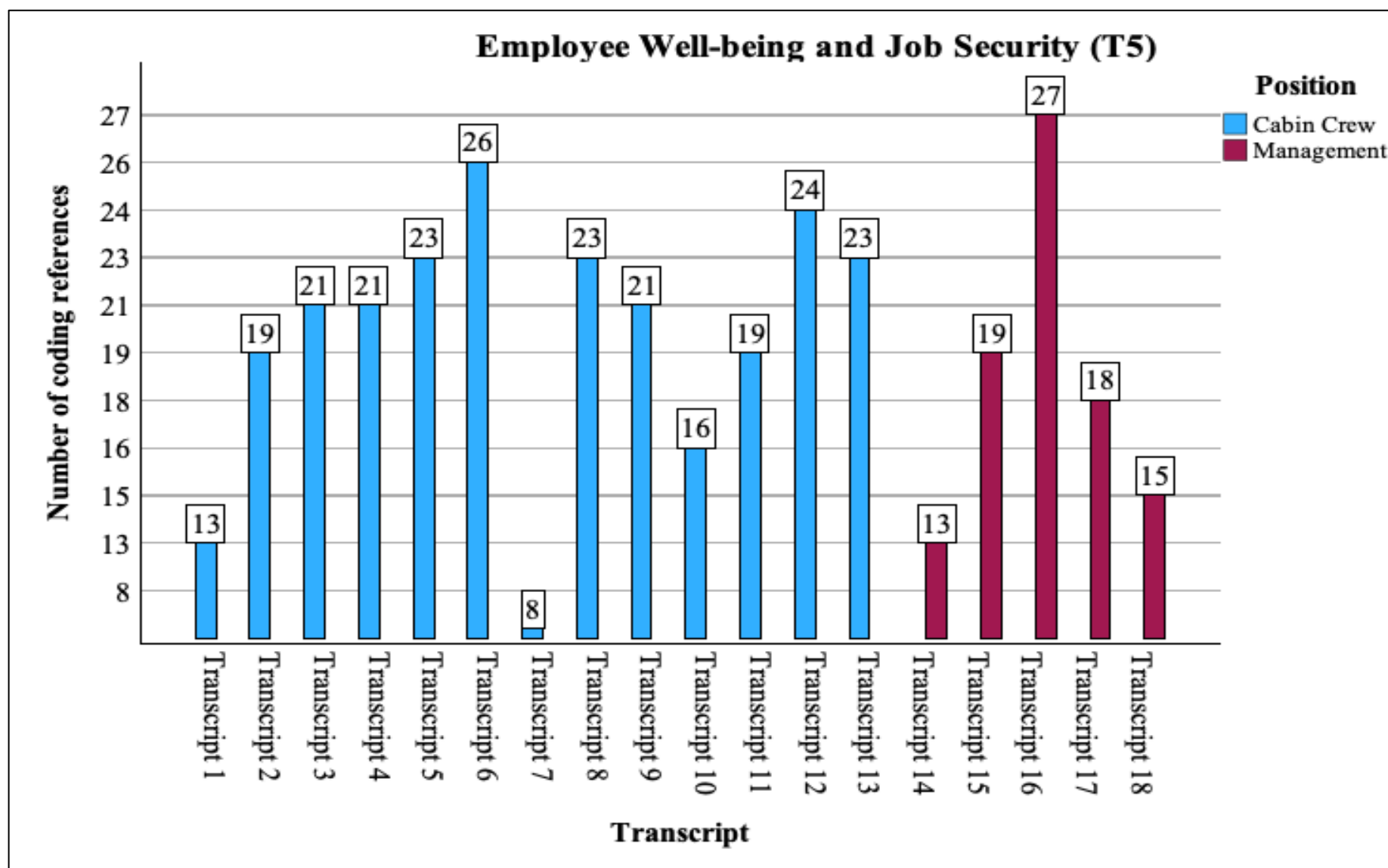


Figure 9 Coding references for employee well-being and job security theme across all transcripts.

The psychological toll of the pandemic was equally significant. Employees described the overwhelming stress of adapting to new protocols, working in high-risk environments, and dealing with inconsistent schedules. One participant highlighted the exhaustion caused by quarantine protocols, stating, *'After each flight, we had to quarantine for 14 days, which added to the stress'* (Transcript 03, Reference 16). Another noted the lack of support for mental health, explaining, *'Management could have done more to support us during such a stressful time'* (Transcript 06, Reference 18). The cumulative impact of these challenges led many crew members to disengage from their roles, with some ultimately deciding to resign. One participant reflected, *'I realised I couldn't continue working for a company with so little regard for its employees well-being... The stress... made it impossible to stay'* (Transcript 02, References 14, 19).

The experiences of foreign staff were particularly acute, as they faced heightened job insecurity and were often the first to be laid off during cost-cutting measures. One crew member described the emotional impact of these layoffs, stating, *'We had colleagues who lost their jobs, particularly our foreign colleagues, which was heartbreaking. It created a lot of stress and insecurity about our own futures'* (Transcript 01, References 5, 7). The disproportionate impact on foreign staff reflects broader issues of inequality within the workforce, which exacerbated tensions and undermined morale.

From the management perspective, participants acknowledged the financial pressures that necessitated layoffs and salary reductions, but many also recognised the detrimental impact of these measures on staff morale. One manager explained, *'We had to let go of foreign employees with high salaries... The crew had major anxiety about job security'* (Transcript 15, References 3, 5). Another reflected on the initial focus on operational survival, admitting, *'I think there's also a recognition now that the crew's well-being is just as important as operational efficiency'* (Transcript 14, Reference 13). These reflections highlight the tension between short-term cost-cutting measures and the long-term need to maintain a motivated and resilient workforce.

Several managers emphasised the importance of learning from the pandemic to develop more robust employee support systems. One participant noted, *'More emphasis on... better mental health support for the crew could have made a difference... The focus is now on rebuilding with a stronger foundation prioritising safety, communication, and employee well-being'*

(Transcript 18, References 13–15). These reflections align with TQM's holistic approach, which integrates employee well-being into broader organisational strategies for continuous improvement.

The findings from this theme have significant implications for TQM and organisational resilience. From a TQM perspective, neglecting employee well-being during the pandemic undermined workforce engagement and hindered the organisation's ability to maintain service excellence. These challenges directly address *sub-question 3, in what ways did leadership approaches and employee engagement dynamics contribute to, or hinder, effective crisis response, as measured against TQM ideals?* by illustrating how leadership neglect in supporting staff can derail TQM initiatives.

The personal impact of the pandemic on employees, as captured in *sub-question 2, how did COVID-19 contingencies, both external (e.g., rapidly changing health regulations) and internal (e.g., financial pressures) impact operational aspects of the Jordanian aviation sector?* underscores the importance of developing crisis management strategies that prioritise mental health and financial stability. The experiences of cabin crew members reveal the need for organisations to provide transparent communication, equitable policies, and accessible mental health resources during crises.

Finally, the findings inform *sub-question 5, what policy recommendations, at both organisational and industry-wide levels, emerge from this study to reinforce sustainable, employee-centric, and quality-driven practices?* by identifying policy-level recommendations to enhance workforce resilience. These include implementing extended benefits, such as paid sick leave and mental health support programs, as well as establishing fair scheduling practices to reduce stress and prevent burnout. By aligning these measures with TQM principles, organisations can foster a supportive and inclusive workplace culture that enhances employee well-being and operational performance.

To summarise, the theme of Employee Well-being and Job Security highlights the critical relationship between staff welfare and organisational resilience during crises. By addressing the gaps identified in this study such as inconsistent communication, inadequate mental health resources, and financial insecurity organisations can strengthen their commitment to employee well-being and align their practices with TQM principles. This approach is essential for

maintaining workforce engagement and achieving sustained service excellence, even in the face of unforeseen disruptions.

4.7 Theme six: Policy and Procedural Compliance

The theme of Policy and Procedural Compliance explores the extent to which staff adhered to organisational guidelines and examines the clarity, consistency, and adaptability of those policies during the COVID-19 pandemic. At the heart of TQM principles lies a commitment to standardisation and quality control, which ensures operational consistency, mitigates risks, and enhances staff confidence. However, the findings reveal significant challenges in implementing and maintaining policy compliance during a rapidly evolving crisis. These included unclear policies, inconsistent enforcement, and a lack of sufficient training and communication, all of which exacerbated confusion and undermined trust.

This theme aligns with *sub-question 1, which core TQM principles are most relevant for crisis management in the aviation sector, and how were they operationalised (or not) during the COVID-19 pandemic?* as it examines how adherence to TQM principles of standardisation and quality control impacts crisis management. It also informs *sub-question 5, what policy recommendations, at both organisational and industry-wide levels, emerge from this study to reinforce sustainable, employee-centric, and quality-driven practices?* by identifying gaps and strengths in compliance frameworks, offering insights for improving procedural systems in the aviation sector.

The centrality of this theme is reflected in Figure 10, with references to Policy and Procedural Compliance ranging from 3 to 12 across the transcripts. These frequencies underscore the widespread challenges and discussions regarding compliance, particularly in the context of the dynamic and unpredictable conditions created by the pandemic.

Cabin crew perspectives illustrate the difficulties posed by rapidly changing policies and inconsistent enforcement, which often created confusion and frustration. One participant described the inconsistent quarantine protocols, stating, *‘Even when we had been in contact with passengers who tested positive for COVID-19, we were still sent home... Meanwhile,*

others who hadn't been exposed were isolated in hotels. It just didn't make sense' (Transcript 02, References 2–3). Such contradictions undermined the perceived credibility of the organisation's safety procedures and led to widespread mistrust among staff. Another participant recounted the chaotic nature of operations during the pandemic, explaining, *'There was a lot of confusion; honestly, no one knew what to do'* (Transcript 03, Reference 2). These accounts highlight the critical importance of clarity and consistency in fostering trust and operational cohesion during crises.

The practical challenges of enforcing safety protocols further exacerbated staff frustrations. One cabin crew member noted the contradictory nature of some guidelines, explaining, *'Passengers had to remove their masks to eat, which made enforcing strict procedures seem pointless'* (Transcript 10, Reference 4). Another described how shared accommodations for crew members conflicted with social distancing requirements, stating, *'We had to share rooms, even though we needed to maintain distance to prevent the virus from spreading'* (Transcript 10, Reference 2). These experiences underscore the socio-technical challenges of implementing policies that align with both operational realities and public health guidelines.

A recurring theme across the transcripts was the lack of sufficient training and communication regarding new policies. Many participants expressed frustration with the pace of procedural changes and the limited guidance provided to implement them effectively. One participant remarked, *'It was difficult to keep up with all these changes... They kept evolving'* (Transcript 03, Reference 6). Another added, *'We mostly got updates through emails, but they were unclear, and we often didn't understand what was expected of us'* (Transcript 05, Reference 4). These accounts highlight the need for comprehensive training and transparent communication to ensure staff buy-in and procedural adherence, as emphasised by TQM principles.

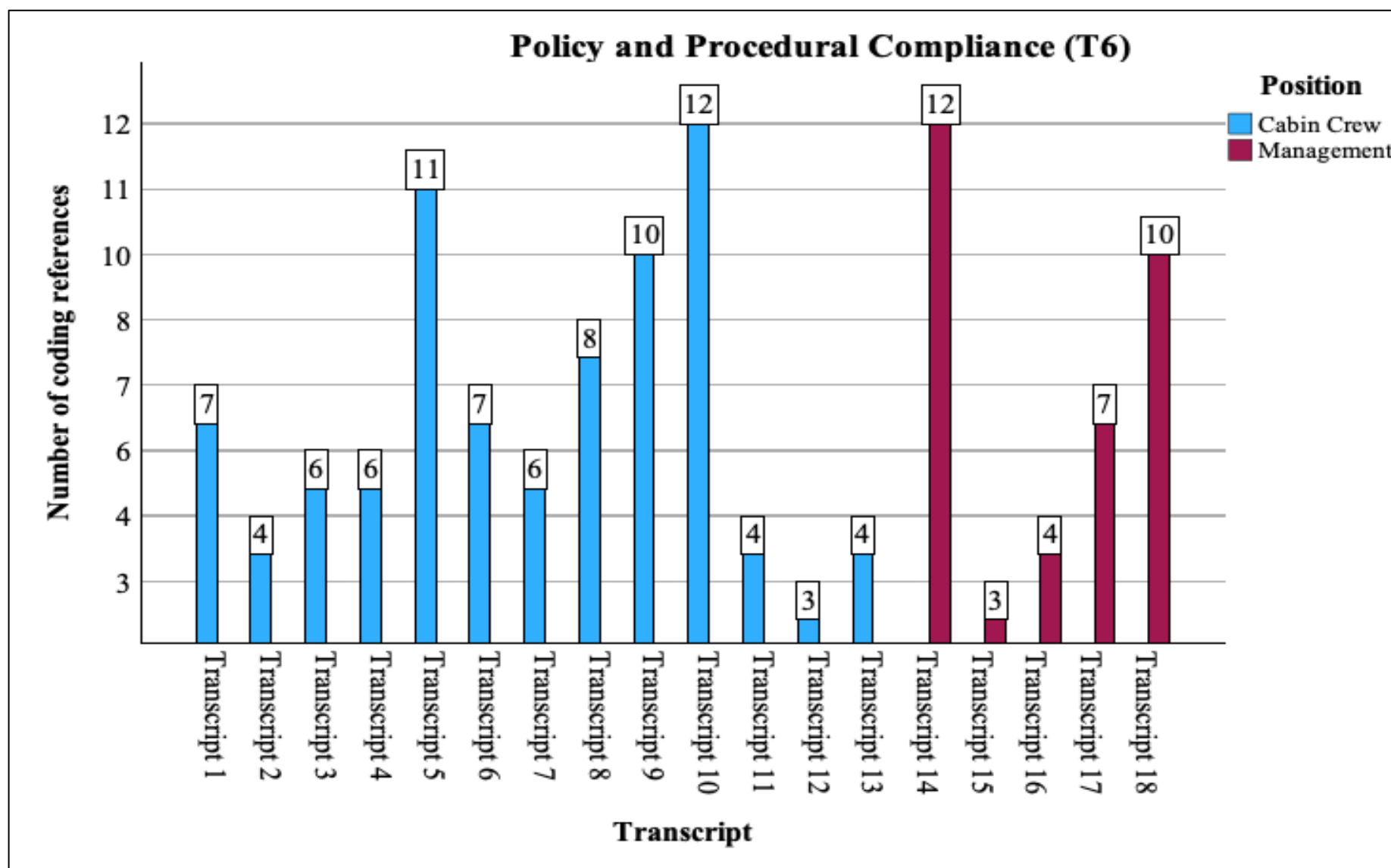


Figure 10 Coding references for policy and procedural compliance theme across all transcripts.

From the management perspective, participants highlighted the tension between external regulatory mandates and the organisation's internal capacity to implement policies effectively. Several managers noted that many decisions were dictated by external authorities, such as the Civil Aviation Regulatory Commission (CARC) and the Ministry of Health. One manager explained, *'The management's hands were somewhat tied... most decisions were dictated by the Civil Aviation Regulatory Commission and the Ministry of Health'* (Transcript 04, Reference 3). While these mandates ensured compliance with public health regulations, they often left little room for flexibility or adaptation to the airline's specific operational context.

Managers also acknowledged the challenges of ensuring consistent enforcement of policies during a rapidly evolving crisis. One participant noted, *'We implemented social distancing measures... revised our safety and security procedures... But it wasn't just about creating new rules; it was also about ensuring everyone followed them'* (Transcript 14, Reference 7). However, the sheer volume and pace of procedural changes often overwhelmed staff and created additional stress. Another manager reflected on the challenges of managing this flow of information, explaining, *'The frequent changes in information and policies were challenging, and sometimes, the sheer volume was overwhelming'* (Transcript 18, Reference 9). These insights underscore the need for robust documentation and communication systems to support procedural adherence during crises.

Several managers emphasised the importance of learning from these challenges to improve policy frameworks and communication channels. One participant remarked, *'We had to develop new procedures on the fly... The frequent changes in information and policies were challenging, but these lessons will help us build a more resilient and robust system'* (Transcript 18, References 8–9). Another highlighted the need for clear and consistent policy documentation, *'noting the value of the corona manual developed during the pandemic as a centralised resource for all new procedures'* (Transcript 14, Reference 6). These reflections align with TQM's emphasis on continuous improvement and the importance of integrating staff feedback into policy development.

The findings from this theme underscore the critical role of policy clarity and consistent enforcement in maintaining operational safety and quality during crises. From a TQM perspective, stable procedural frameworks are essential for ensuring compliance and reducing

frustration among staff. However, these frameworks must also be dynamic enough to accommodate emergent crises and evolving operational needs. The pandemic revealed significant gaps in procedural clarity, training, and communication, which hindered staff adherence and eroded trust.

Cabin crew accounts highlight the importance of transparent communication and comprehensive training in fostering procedural compliance. The confusion and mistrust caused by inconsistent policies and inadequate guidance underscore the need for organisations to prioritise staff engagement and feedback in their compliance strategies. Similarly, management reflections reveal the value of balancing external regulatory mandates with internal flexibility to ensure policies are both feasible and effectively implemented.

These findings inform *sub-question 5, what policy recommendations, at both organisational and industry-wide levels, emerge from this study to reinforce sustainable, employee-centric, and quality-driven practices?* by identifying practical recommendations for strengthening compliance frameworks in the aviation sector. Developing robust documentation systems, such as a centralised policy manual, and establishing formal mechanisms for staff feedback can enhance procedural clarity and adherence. By aligning these measures with TQM principles of standardisation, flexibility, and continuous improvement, organisations can build more resilient compliance systems that are better equipped to handle future crises.

To summarise, the theme of Policy and Procedural Compliance highlights the complex relation between standardisation and adaptability in ensuring operational safety and quality during crises. By addressing the gaps identified in this study such as inconsistent enforcement, unclear communication, and limited training, organisations can strengthen their commitment to procedural compliance and align their practices with TQM principles. This approach is essential for fostering trust, reducing frustration, and maintaining operational excellence in the face of dynamic and unpredictable challenges.

4.8 Theme seven: Accountability and Empowerment

The theme of Accountability and Empowerment examines the extent to which responsibility for roles is distributed across the organisation and the degree to which individuals are granted autonomy in decision-making. At the heart of TQM principles is the emphasis on employee ownership and empowerment, which fosters proactive engagement, problem-solving, and higher overall performance. However, the findings reveal that these ideals often collided with hierarchical structures and crisis-induced pressures during the COVID-19 pandemic. The challenges of implementing empowerment and ensuring accountability during a period of rapid and unpredictable changes highlight the complexities of aligning TQM principles with operational realities.

This theme aligns with *sub-question 3, in what ways did leadership approaches and employee engagement dynamics contribute to, or hinder, effective crisis response, as measured against TQM ideals?* as it examines the relation between leadership styles and employee engagement an essential aspect of TQM's focus on fostering staff-driven improvement and quality standards. Additionally, it addresses *sub-question 5, what policy recommendations, at both organisational and industry-wide levels, emerge from this study to reinforce sustainable, employee-centric, and quality-driven practices?* by identifying structural and procedural changes that could enhance accountability and empowerment within the aviation industry.

The prominence of this theme is evident in Figure 11, which shows the number of references to Accountability and Empowerment across transcripts, ranging from 1 to 8. These frequencies underscore the significant role that leadership, trust, and decision-making autonomy played in shaping employee experiences and operational effectiveness during the pandemic.

The perspectives of cabin crew members highlight the challenges posed by limited decision-making autonomy and the lack of involvement in organisational decision-making processes. One participant described the disconnect between leadership priorities and frontline realities, stating, *'The management seemed more focused on just keeping operations running, but they didn't consider the impact on us, the front-line workers... I think the management should have involved us more in decision-making'* (Transcript 01, References 1–2). This sentiment reflects a missed opportunity to leverage the insights and expertise of frontline employees, whose operational knowledge could have informed more adaptive and effective strategies during the crisis. The exclusion of cabin crew from key decisions not only undermined their sense of ownership but also contributed to feelings of disconnection and disengagement.

The lack of autonomy was further exacerbated by coercive practices that eroded trust and morale. One crew member recounted how initial efforts to seek volunteers for flights eventually transitioned into mandatory assignments, explaining, *'They also started sending emails asking who wanted to volunteer... but later, they began forcing people to fly... even threatening to mark it as refused duty in our records if we didn't show up'* (Transcript 02, Reference 1). Such practices run counter to TQM principles, which emphasise intrinsic motivation and voluntary engagement as critical drivers of employee commitment and performance.

The experiences of cabin crew also reveal structural barriers to empowerment at the middle-management level. Several participants noted that mid-level managers were often constrained by rigid top-down directives, which limited their ability to advocate for their teams or make decisions autonomously. One participant observed, *'Cabin crew managers on board should have more decision-making power without constantly referring back to higher management'* (Transcript 04, Reference 5). Another highlighted how hierarchical structures prevented managers from addressing operational challenges effectively, explaining, *'The organisation's hierarchical structure meant middle management wasn't empowered enough to make decisions that could have made a difference'* (Transcript 04, Reference 2). These accounts illustrate the disconnect between stated organisational values of empowerment and the lived realities of constrained decision-making authority, which hindered the ability of managers and staff to respond dynamically to evolving challenges.

Management perspectives provide additional insights into the tensions surrounding accountability and empowerment during the pandemic. Several managers acknowledged the need to adopt more supportive and empathetic leadership styles to navigate the crisis effectively. One manager reflected on the challenges of leading during a time of heightened stress and uncertainty, stating, *'It's easy to enforce rules, but leading in a way that motivates and inspires is harder... A true leader should know how to apply the rules in a way that supports their team and keeps morale high'* (Transcript 15, References 2–3). Another manager described how their leadership approach evolved in response to the crisis, explaining, *'My management style had to adapt; it became more about reassurance and support'* (Transcript 18, Reference 1). These reflections align with TQM's emphasis on trust-based leadership, which prioritises employee well-being and engagement alongside operational goals.

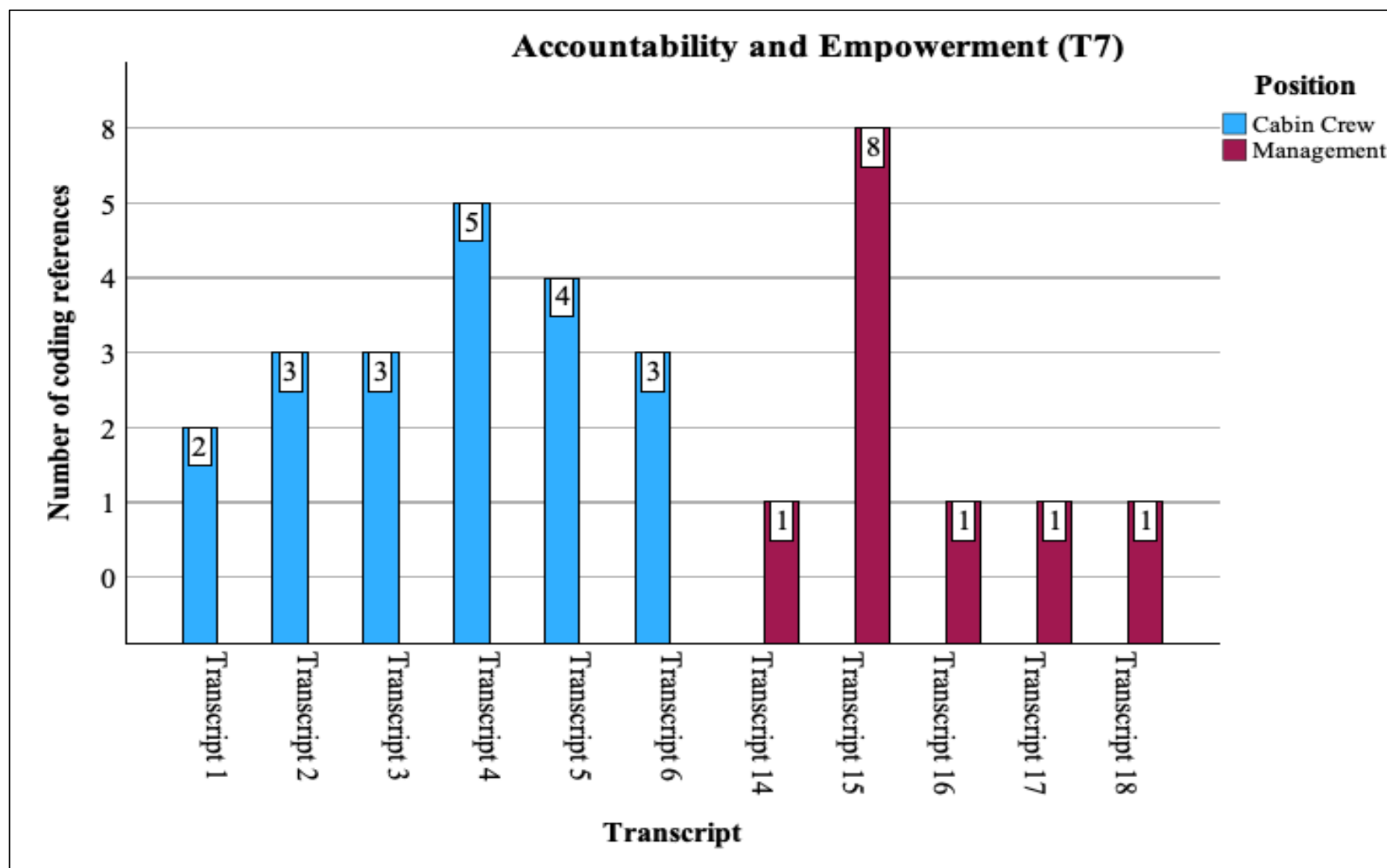


Figure 11 Coding references for accountability and empowerment theme across all transcripts.

Despite these efforts, several managers acknowledged that true empowerment remained elusive during the crisis. One participant remarked, *‘There is still a long way to go regarding truly empowering the crew... In a crisis, you need strong, empathetic leadership that prioritises people as much as procedures’* (Transcript 14, Reference 1; Transcript 17, Reference 1). These statements highlight the gap between rhetorical commitments to empowerment and the practical limitations imposed by hierarchical structures and crisis-driven priorities. Another manager noted the challenge of balancing procedural adherence with staff autonomy, explaining, *‘As a manager, I ensured the crew understood and implemented these changes’* (Transcript 16, Reference 1). However, this often translated into top-down enforcement rather than collaborative problem-solving, further limiting opportunities for staff ownership and engagement.

The findings from this theme underscore the challenges of fostering accountability and empowerment in a crisis-driven organisational context. From a TQM perspective, the lack of meaningful empowerment and autonomy for staff undermined engagement and hindered the organisation’s ability to adapt effectively to dynamic conditions. These challenges directly address *sub-question 3, in what ways did leadership approaches and employee engagement dynamics contribute to, or hinder, effective crisis response, as measured against TQM ideals?* by illustrating how leadership styles and accountability structures influence employee engagement, morale, and operational performance.

The experiences of cabin crew highlight the importance of involving frontline workers in decision-making processes and granting them the autonomy to address operational challenges proactively. The exclusion of staff from meaningful participation not only diminished their sense of ownership but also limited the organisation’s capacity for adaptive problem-solving during the crisis. Similarly, the reflections of management participants reveal the need for structural changes to balance top-down directives with decentralised decision-making, enabling mid-level leaders and frontline staff to contribute more effectively to organisational goals.

These findings inform *sub-question 5, what policy recommendations, at both organisational and industry-wide levels, emerge from this study to reinforce sustainable, employee-centric, and quality-driven practices?* by identifying practical recommendations for enhancing

accountability and empowerment within the aviation sector. These include redefining role responsibilities to grant greater decision-making authority to mid-level managers and frontline staff, implementing formal empowerment programs, and establishing clear communication channels to ensure that staff voices are heard and valued. By aligning these measures with TQM principles of employee engagement, ownership, and continuous improvement, organisations can foster a more resilient and motivated workforce that is better equipped to navigate future crises.

To summarise, the theme of Accountability and Empowerment highlights the critical relation between leadership, autonomy, and trust in shaping organisational resilience and employee engagement. By addressing the gaps identified in this study such as limited decision-making authority, coercive practices, and hierarchical rigidity, organisations can strengthen their commitment to empowerment and accountability. Aligning these efforts with TQM principles will not only enhance staff morale and engagement but also enable organisations to adapt more effectively to dynamic and unpredictable challenges.

4.9 Theme eight: Operational Pressures

The theme of Operational Pressures explores the heightened demands placed on airline crew and management during the COVID-19 pandemic, encompassing increased workloads, financial strain, resource constraints, and reputational concerns. Within the framework of TQM, managing these pressures effectively is critical to maintaining service quality, safeguarding employee well-being, and ensuring operational continuity. However, the findings reveal that the convergence of these factors during the pandemic led to significant challenges, disrupting both day-to-day operations and long-term strategic planning.

This theme is closely aligned with *sub-question 2, how did COVID-19 contingencies, both external (e.g., rapidly changing health regulations) and internal (e.g., financial pressures) impact operational aspects of Jordanian aviation sector?* as it highlights the profound effects of the pandemic on operational and strategic aspects of management. Furthermore, it informs *sub-question 5, what policy recommendations, at both organisational and industry-wide levels, emerge from this study to reinforce sustainable, employee-centric, and quality-driven practices?* by identifying actionable recommendations to mitigate the adverse impacts of

operational pressures, such as enhancing scheduling flexibility, improving resource allocation, and strengthening well-being support systems.

The frequency of references to Operational Pressures, as depicted in Figure 12, ranges from 5 to 25 across transcripts, reflecting the pervasive impact of these challenges on the organisation. The experiences shared by cabin crew and management illuminate the complex dynamics of navigating operational stresses during an unprecedented global crisis.

Cabin crew perspectives provide critical insights into the intensified workloads and scheduling conflicts that emerged as flights resumed following initial shutdowns. Many participants described feeling overwhelmed by the increased operational demands, particularly in the context of reduced staffing levels. One participant explained, *'When flights resumed, it became very challenging to maintain operations... the crew was already tired, and many got sick, putting more pressure on those still working'* (Transcript 06, Reference 8). Another highlighted the impact of extended shifts and shortened rest periods, stating, *'According to our CCOM, we were supposed to get 12 hours of rest between flights, but honestly, that wasn't enough'* (Transcript 06, Reference 17). These accounts underscore the cumulative toll of inadequate staffing and scheduling practices, which not only heightened fatigue but also risked compromising safety and service quality key concerns within the TQM framework.

Financial pressures and job insecurity further exacerbated the stress experienced by cabin crew. Participants frequently mentioned salary reductions and layoffs, which created a pervasive atmosphere of uncertainty and fear. One crew member reflected, *'We didn't know if we would still have jobs... or even if the country would reopen. They cut costs... but it just made the stress worse'* (Transcript 02, References 2, 6). Another described the emotional strain of seeing colleagues dismissed, stating, *'We had colleagues who lost their jobs, particularly our foreign colleagues, which was heartbreaking. It created a lot of stress and insecurity about our own futures'* (Transcript 01, References 5, 7). These financial uncertainties not only undermined morale but also led some employees to consider leaving the industry altogether, reflecting the broader challenges of retaining talent during crises.

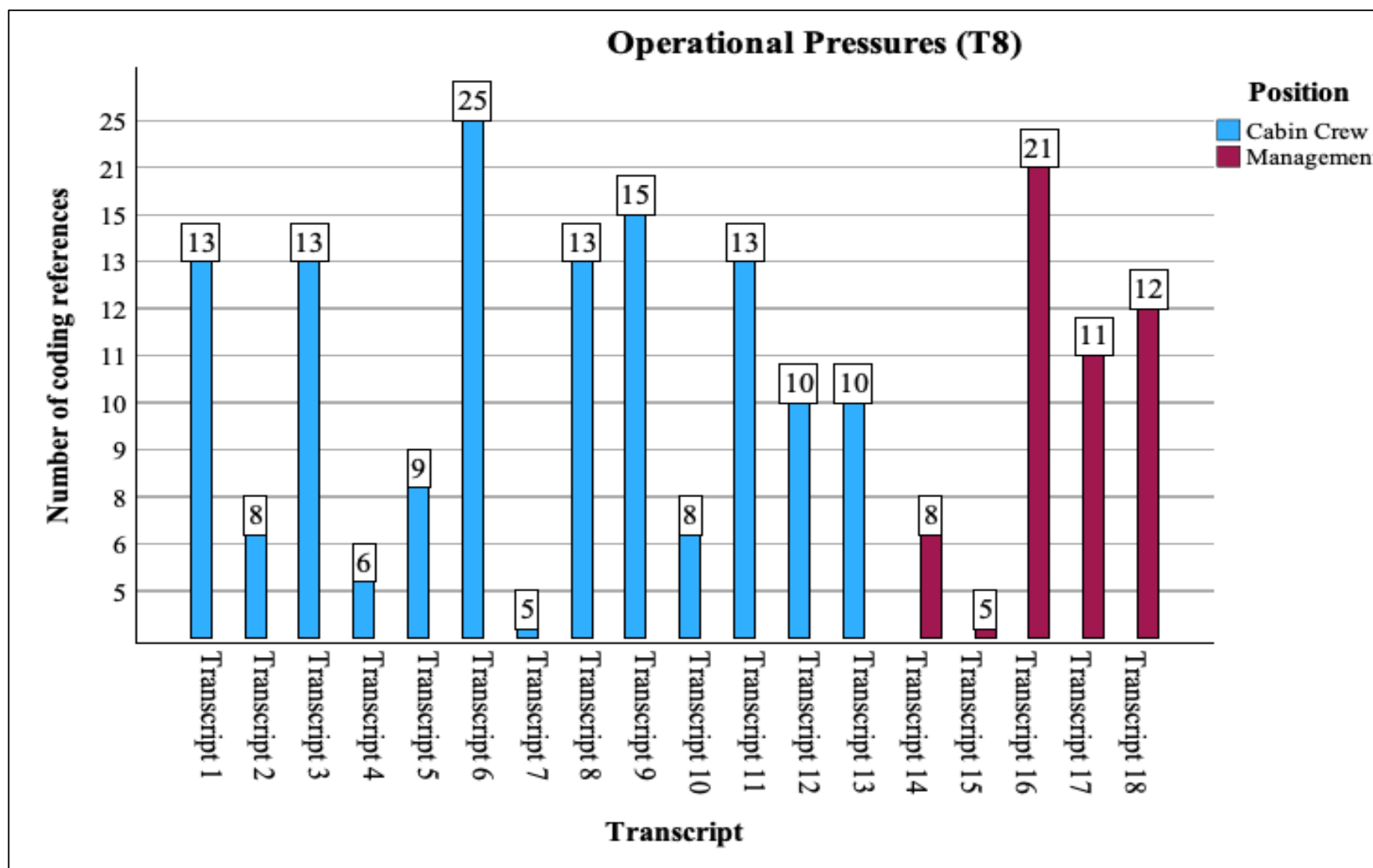


Figure 12 Coding references for operational pressures theme across all transcripts.

Health and safety concerns added another dimension to the operational pressures faced by cabin crew. Participants described the physical and emotional toll of working under strict safety protocols while attempting to meet customer-service expectations. One participant explained, *'After each flight, we had to quarantine for 14 days... which extended the quarantine period and increased the pressure on us'* (Transcript 09, Reference 3). Another highlighted the tension between adhering to safety measures and maintaining service standards, stating, *'We were expected to handle every situation on board, no matter how difficult, with little to no support'* (Transcript 12, Reference 1). These conflicting priorities illustrate the inherent difficulties of balancing operational demands with the need to protect employee well-being during a crisis.

From the management perspective, participants acknowledged the immense pressure to sustain operations despite significant resource constraints and regulatory uncertainties. One manager reflected on the financial imperative of resuming flights, explaining, *'The airline was focused on immediate survival... but that meant long-term planning took a back seat'* (Transcript 11, Reference 7). Another highlighted the reliance on cost-cutting measures as a short-term solution, stating, *'We had to lay off international employees... The financial impact was undeniable... but it also created a lot of anxiety among remaining staff'* (Transcript 15, Reference 3). While these measures reduced overhead costs, they also multiplied the workload for retained employees, exacerbating the operational pressures faced by both staff and management.

Managers also described the challenges of navigating dynamic regulatory environments and resource limitations, which often hindered their ability to maintain consistent operations. One participant explained, *'It made decision-making more difficult because we had to balance safety with operational needs under very stressful conditions'* (Transcript 18, Reference 7). Another recounted the difficulties of adapting to rapidly changing guidelines, stating, *'We had to develop new procedures on the fly, like ensuring crew members were vaccinated for repatriation flights and enforcing strict PPE usage'* (Transcript 18, Reference 2). These accounts reveal how resource constraints and regulatory demands created a precarious balance between immediate operational needs and adherence to quality and safety standards, a tension frequently addressed in TQM literature.

The findings from this theme highlight the multifaceted nature of operational pressures during a crisis, encompassing reduced staffing, financial strain, and dynamic regulatory requirements. From a TQM perspective, these challenges underscore the importance of proactive planning and resource allocation to mitigate stress and sustain operational quality. The experiences of cabin crew reveal the cascading effects of inadequate staffing and support, which increased workloads, heightened stress levels, and undermined morale. Similarly, management reflections illustrate the tension between short-term financial imperatives and the need for long-term strategic planning, which often left staff feeling unsupported and undervalued.

These insights inform *sub-question 5, what policy recommendations, at both organisational and industry-wide levels, emerge from this study to reinforce sustainable, employee-centric, and quality-driven practices?* by identifying actionable recommendations to alleviate operational pressures. Extending rest periods between flights, implementing flexible scheduling practices, and providing targeted well-being support such as mental health resources and transparent communication of financial constraints can help foster resilience among staff and reduce the risk of burnout. Furthermore, aligning these measures with TQM principles of continuous improvement and staff engagement will be critical for enhancing organisational resilience and maintaining service standards under challenging conditions.

To summarise, the theme of Operational Pressures underscores the significant demands placed on both staff and management during the COVID-19 pandemic. By addressing the gaps identified in this study such as insufficient staffing, financial uncertainty, and resource constraints, organisations can strengthen their commitment to employee well-being and operational quality. Aligning these efforts with TQM principles will not only enhance resilience and service excellence but also prepare organisations to navigate future crises with greater agility and effectiveness.

4.10 Theme nine: Effective Supervision and Supportive Practices

The theme of Effective Supervision and Supportive Practices focuses on the critical role of supervisors in fostering employee engagement, mitigating stress, and providing guidance during the COVID-19 pandemic. Central to TQM principles, supportive and hands-on

supervision is essential for aligning operational execution with organisational goals, particularly under crisis conditions. The findings reveal that while many supervisory practices contributed to employee well-being and operational stability, significant gaps in leadership visibility, communication, and empathy often exacerbated staff frustrations and reduced morale.

This theme directly aligns with *sub-question 3, in what ways did leadership approaches and employee engagement dynamics contribute to, or hinder, effective crisis response, as measured against TQM ideals?* examining the influence of leadership on employee engagement and TQM acceptance. It also relates to *sub-question 1, which core TQM principles are most relevant for crisis management in the aviation sector, and how were they operationalised (or not) during the COVID-19 pandemic?* as it demonstrates how effective supervision and feedback integration foster continuous improvement, a cornerstone of TQM. By exploring the supervisory practices adopted during the pandemic, this theme highlights best practices and challenges, offering insights for enhancing leadership strategies under crisis conditions.

As depicted in Figure 13, references to Effective Supervision and Supportive Practices ranged from 6 to 20 across transcripts, underscoring the widespread importance of this theme in shaping employee experiences and organisational outcomes. The perspectives of both cabin crew and management provide understanding of the successes and shortcomings of supervisory practices during the pandemic.

Cabin crew perspectives reveal the critical importance of visible and approachable leadership in mitigating stress and fostering trust. Many participants emphasised the need for supervisors to be actively engaged and accessible, particularly during periods of heightened uncertainty. One crew member explained, *'Leadership needs to adopt a genuine open-door policy where we feel comfortable approaching them with our concerns'* (Transcript 04, Reference 9). Another expressed frustration at the lack of support during quarantine periods, stating, *'They should have checked on us during quarantine... listened to our concerns'* (Transcript 05, Reference 5). These accounts highlight how approachable and empathetic leadership can alleviate operational anxieties and build trust, key components of a people-first approach aligned with TQM principles.

Mentoring and emotional support emerged as recurring themes in cabin crew narratives, with many participants describing the positive impact of hands-on guidance and coaching. One crew member remarked, *'Feeling comfortable with the managers positively impacted our mental health and our ability to provide good customer service'* (Transcript 06, Reference 9). Another highlighted the disconnect that can occur when supervisors lack firsthand experience with frontline challenges, explaining, *'Once [managers] moved into ground-based roles, they became less understanding of the operational challenges we faced in the air'* (Transcript 04, Reference 6). These insights reveal the importance of supervisors understanding and addressing the realities of day-to-day operations, a critical aspect of TQM's emphasis on staff engagement and continuous improvement.

However, the findings also reveal significant gaps in supervisory practices that hindered employee engagement and morale. Several participants described inconsistent communication and a lack of visible leadership, which exacerbated feelings of isolation and frustration. One crew member noted, *'Management only communicated through WhatsApp, and decisions were made without any physical presence or clear instructions'* (Transcript 10, Reference 3). Another emphasised the importance of active listening and incorporating frontline feedback, stating, *'If the management had been more transparent and directly engaged with us, it would have made a big difference'* (Transcript 11, Reference 9). These experiences underscore the critical need for supervisors to establish open feedback loops and align their practices with the realities of frontline work, particularly under crisis conditions.

From the management perspective, several participants acknowledged the need to transition from authoritarian to supportive leadership styles during the pandemic. One manager described this shift, stating, *'Initially, they were side by side with us, but later... it felt more authoritarian... We started feeling less valued'* (Transcript 15, Reference 6). Another reflected on the importance of adopting a more empathetic approach, explaining, *'My management style had to adapt; it became more about reassurance and support'* (Transcript 18, Reference 3). These reflections align with TQM's emphasis on value-based leadership, which prioritises employee well-being and engagement as integral to operational success.

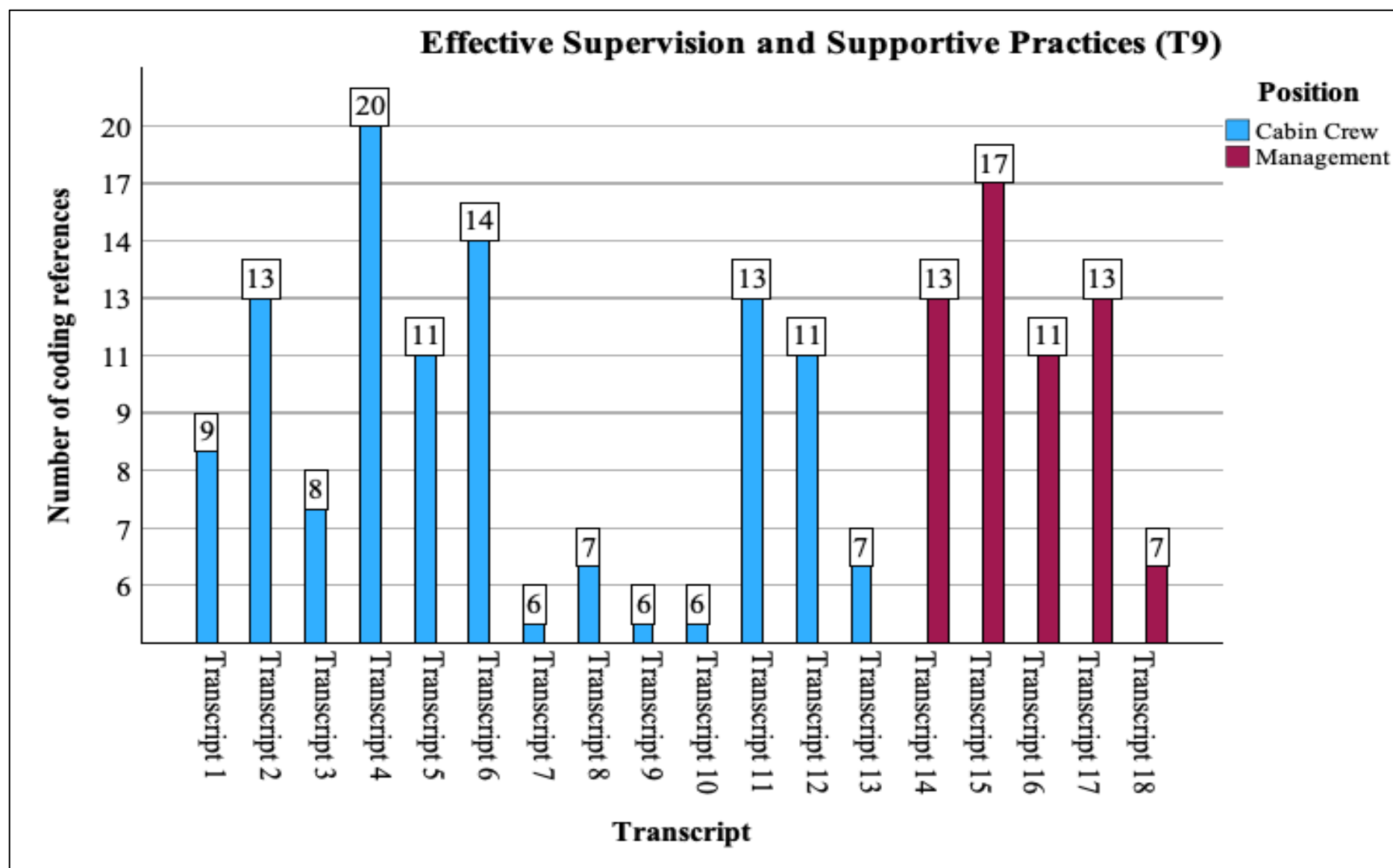


Figure 13 Coding references for effective supervision and supportive practices theme.

Proactive communication and structured guidance also emerged as key strategies for effective supervision. Managers described initiatives such as daily briefing calls and updates to the ‘Corona Manual’ as efforts to provide clarity and support amidst rapidly changing protocols. One participant explained, *‘We quickly realised the need for more transparent communication... leaders had to be more engaged with their teams’* (Transcript 14, Reference 10). Another shared personal strategies for maintaining morale, stating, *‘I made it a point to stay with my team, talk with them, laugh with them, and keep the atmosphere as positive as possible’* (Transcript 15, Reference 10). These accounts highlight the importance of hands-on supervision in fostering trust, clarity, and alignment with TQM principles, even in the face of crisis-induced challenges.

Despite these efforts, the findings reveal that supervisory practices often fell short of employee expectations. Several participants described feeling unsupported and undervalued due to a lack of consistent leadership engagement. One crew member emphasised the need for supervisors to actively advocate for their teams, stating, *‘Cabin crew managers on board should have more decision-making power without constantly referring back to higher management’* (Transcript 04, Reference 16). Another highlighted the consequences of inadequate communication, explaining, *‘The pandemic highlighted how unprepared the company was to handle a crisis of this magnitude’* (Transcript 10, Reference 4). These challenges underscore the importance of fostering open communication and empowering supervisors to act decisively in support of their teams.

The findings from this theme underscore the central role of effective supervision and supportive practices in fostering employee engagement, reducing stress, and aligning operational execution with TQM principles. Supervisors play a pivotal role in bridging the gap between top-level decisions and frontline realities, providing the guidance, recognition, and emotional support needed to sustain morale and performance during crises. The experiences of cabin crew highlight the critical importance of visible, empathetic, and solution-oriented leadership, which can mitigate the operational anxieties and challenges posed by dynamic conditions.

These insights inform *sub-question 3, in what ways did leadership approaches and employee engagement dynamics contribute to, or hinder, effective crisis response, as measured against TQM ideals?* by demonstrating the impact of hands-on supervision on employee engagement

and TQM uptake. They also validate *sub-question 1 which core TQM principles are most relevant for crisis management in the aviation sector, and how were they operationalised (or not) during the COVID-19 pandemic?* by illustrating how effective supervision fosters continuous improvement through mentorship, feedback integration, and proactive communication. By adopting supportive practices such as frequent check-ins, open communication, and on-the-spot coaching, supervisors can create a TQM-friendly climate that encourages continuous improvement and long-term organisational resilience.

To summarise, the theme of Effective Supervision and Supportive Practices highlights the transformative potential of engaged and empathetic leadership in navigating crises and maintaining alignment with TQM principles. By addressing the gaps identified in this study such as inconsistent communication, insufficient mentoring, and detached leadership, organisations can strengthen their commitment to employee well-being and operational excellence. Aligning these efforts with TQM principles will not only enhance morale and engagement but also prepare organisations to navigate future challenges with greater agility and resilience.

4.11 Theme ten: Adaptive Operational Strategies

The theme of Adaptive Operational Strategies examines how the organisation responded to and anticipated disruptions during the COVID-19 pandemic, showcasing the necessity of strategic flexibility, resilience mechanisms, and continuous improvement as part of the TQM framework. The pandemic created a rapidly shifting environment in which organisations had to recalibrate their operations to manage evolving constraints, including regulatory mandates, fluctuating passenger demand, and resource limitations. Adaptive strategies emerged as vital tools for maintaining efficiency, ensuring safety, and upholding quality standards, yet the findings reveal a complex relation of successes and challenges in implementing these measures.

This theme is directly aligned with *sub-question 2, how did COVID-19 contingencies, both external (e.g., rapidly changing health regulations) and internal (e.g., financial pressures) impact operational aspects of Jordanian aviation sector?* as it investigates the operational and strategic transformations prompted by the pandemic. It also addresses *sub-question 4, what enhancements or adaptations to conventional TQM models are warranted, given the crisis*

experiences observed in Jordanian aviation sector? by identifying how adaptive strategies can inform the development of a more resilient TQM framework. Furthermore, it supports *sub-question 5, what policy recommendations, at both organisational and industry-wide levels, emerge from this study to reinforce sustainable, employee-centric, and quality-driven practices?* by providing insights into policy recommendations that enhance organisational agility and crisis preparedness.

The prevalence of this theme is reflected in Figure 14, which indicates a range of references to Adaptive Operational Strategies across transcripts, with frequencies varying from 3 to 14. These discussions illustrate the importance of adaptability in crisis management and the varying degrees of success and limitations experienced by the organisation. Perspectives from both cabin crew and management offer a comprehensive understanding of how adaptive strategies shaped the airline's response to the pandemic.

Cabin crew perspectives highlight the immediate challenges associated with implementing adaptive strategies, particularly in the absence of sufficient preparation or training. Many participants described the introduction of new protocols such as social distancing, the use of personal protective equipment (PPE), and quarantine rules often implemented overnight with little guidance. One crew member explained, *'We had to figure things out as we went along... no specific training on handling such a crisis'* (Transcript 08). Another participant noted, *'It was difficult to keep up with all these changes... They kept evolving'* (Transcript 03, Reference 6). These accounts reveal the tension between the urgency of procedural shifts and the practical realities of execution, emphasising the need for clear communication and robust training to support frontline staff during periods of rapid change.

The complexity of balancing operational efficiency with safety was another recurring theme. Cabin crew frequently described encountering contradictory measures that complicated their ability to maintain consistency. One participant remarked, *'Some procedures didn't make sense... like wearing masks during boarding but removing them for meal service'* (Transcript 04, Reference 1). Another highlighted the logistical challenges of quarantine protocols, stating, *'We were quarantined in the airport hotel, but the arrangements didn't make sense'* (Transcript 10, Reference 1). These inconsistencies not only undermined staff confidence but also reflected gaps in the integration of adaptive measures with a coherent and systemic approach a key principle of TQM.

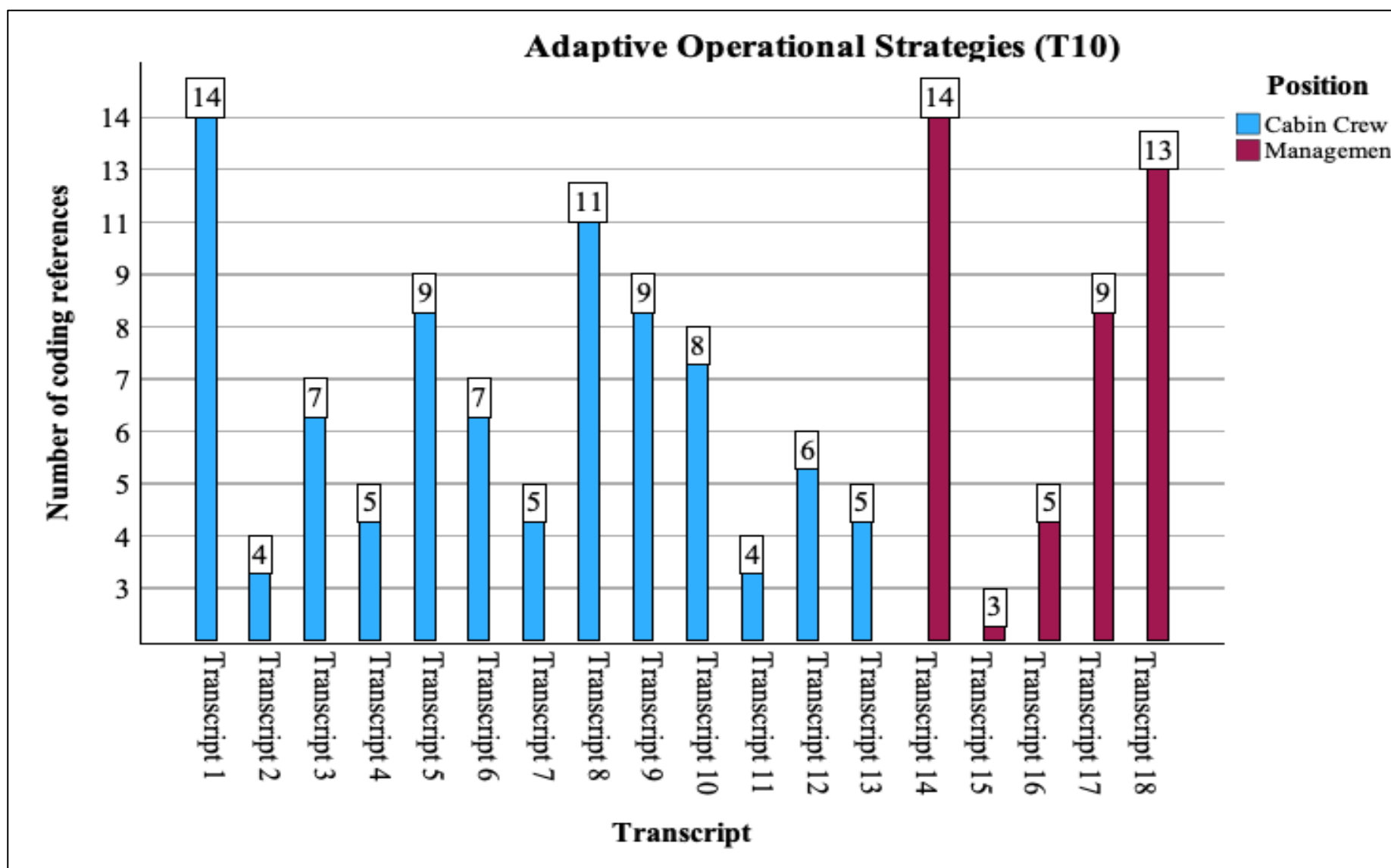


Figure 14 Coding references for effective adaptive operational strategies theme across all transcripts.

Despite these challenges, cabin crew also recognised the organisation's agility in responding to the crisis, often adopting a learning-by-doing approach. One participant explained, '*Over time, we adapted, but it was more about learning on the job... rather than being properly prepared*' (Transcript 01, Reference 9). While this approach demonstrated resilience and responsiveness, it frequently left staff feeling unsupported and unprepared, underscoring the need for more structured guidance and systematic support during crises.

Interviewees framed adaptation as necessary but uneven. '*We had to figure things out as we went along... no specific training on handling such a crisis*' (Transcript 08; Transcript 01, References 1–3). The capacity to improvise sustained basic operations, yet the burden fell on individuals rather than the system, leaving staff 'unsupported and unprepared' at key moments.

Managers described efforts to codify emergent practices '*We had to develop new procedures on the fly... ensuring crew members were vaccinated for repatriation flights and enforcing strict PPE usage*' (Transcript 18, Reference 2) and a mindset shift '*from a reactive to a more proactive approach*' (Transcript 14, References 11). These moves are consistent with TQM cycles of Plan-Do-Check-Act, where field learning is quickly standardised, communicated, and audited (Womack, 1996).

Participants across roles stressed that adaptability was most effective when coupled with voice and feedback. '*The key will be to maintain our improvements... and continue adapting as new challenges arise*' (Transcript 18, References 13). Embedding routine debriefs, capturing frontline suggestions, and closing the loop in updated procedures turned short-term fixes into durable capabilities hallmarks of resilience building (Pasmore et al., 2019).

From the management perspective, participants emphasised the necessity of immediate reorientation and the development of new operational protocols to address the disruptions caused by the pandemic. One manager described the creation of 'Corona Manuals,' which served as updated playbooks for repatriation flights, PPE usage, and vaccination requirements, stating, '*We had to develop new procedures on the fly... ensuring crew members were vaccinated for repatriation flights and enforcing strict PPE usage*' (Transcript 18, Reference 2). Another manager reflected on the evolution of organisational mindsets, noting, '*Overall, I think the mindset shifted from a reactive to a more proactive approach, especially regarding*

risk management and operational flexibility' (Transcript 14, Reference 11). These reflections illustrate the organisation's efforts to align with TQM's continuous improvement cycle, adapting operations to meet the demands of an unprecedented crisis.

Resilience mechanisms and forward-looking strategies also emerged as key elements of adaptive operational strategies. Managers emphasised the importance of maintaining the agile practices developed during the pandemic to prepare for future disruptions. One participant remarked, *'The key will be to maintain our improvements... and continue adapting as new challenges arise'* (Transcript 18, Reference 13). Another highlighted the role of integrating frontline feedback into decision-making processes, explaining, *'These changes will have a lasting impact, forcing us to be more resilient and adaptable in future crises'* (Transcript 18, Reference 11). These insights underscore the value of embedding adaptability and real-time feedback loops into standard operating procedures to enhance organisational resilience and agility.

The findings from this theme highlight the pivotal role of adaptive operational strategies in navigating the complexities of the COVID-19 pandemic. From a TQM perspective, these strategies exemplify the principles of continuous improvement and systemic alignment, though their implementation often revealed gaps in training, communication, and long-term planning. The experiences of cabin crew emphasise the critical importance of integrating frontline perspectives into adaptive measures, ensuring that procedural shifts are both practical and coherent. Similarly, management reflections underscore the necessity of proactive planning and resilience mechanisms to balance immediate operational needs with sustainable quality outcomes.

These insights inform *sub-question 4, what enhancements or adaptations to conventional TQM models are warranted, given the crisis experiences observed in the Jordanian aviation sector?* by demonstrating how adaptive strategies can serve as foundational components of a more resilient TQM framework. Embedding flexibility, real-time feedback mechanisms, and proactive planning into organisational practices can enhance the capacity to respond effectively to future disruptions. For *sub-question 5, what policy recommendations, at both organisational and industry-wide levels, emerge from this study to reinforce sustainable, employee-centric, and quality-driven practices?* the findings highlight the importance of comprehensive training

programs, clear communication protocols, and robust hazard assessment systems to support the implementation of adaptive strategies and sustain operational quality.

To summarise, the theme of Adaptive Operational Strategies reveals the critical importance of organisational agility and resilience in managing the challenges of the COVID-19 pandemic. By addressing the gaps identified in this study such as insufficient training, inconsistent communication, and limited integration of frontline feedback, organisations can strengthen their adaptive capacities and align their practices with TQM principles. This approach will not only enhance operational resilience but also prepare organisations to navigate future crises with greater efficiency and effectiveness, ensuring sustained service quality and organisational success.

4.12 Transferability and Generalisability of Findings

The findings reported across Themes T1–T10 are grounded in the particularities of a Jordanian carrier operating under Civil Aviation Regulatory Commission (CARC) and Ministry of Health directives during COVID-19, with resource constraints and a culturally diverse workforce. These contextual features shape what can transfer and under what conditions. Nevertheless, several cross-cutting mechanisms two-way, dialogic communication; participatory supervision; coherent and consistently enforced risk controls; and rapid codification of learning appear to support resilience in service settings that share similar socio-technical characteristics (Pasmore et al., 2019; Womack, 1996). In this sense, transfer concerns mechanisms rather than the literal replication of artefacts (e.g., a specific ‘Corona manual’ template).

Evidence patterns within this chapter (e.g., the prominence of Communication & Leadership in Figure 5, Risk & Safety in Figure 8, and Adaptation in Figure 14) indicate where the case experienced the most pressure and learning; these same domains are typically pivotal in safety-critical services (airlines, rail, hospital wards, hospitality hubs). Thus, organisations with tight operational coupling, high compliance demands, and intensive customer interfaces may translate the mechanisms observed here, provided enabling conditions are present leadership commitment to open reporting, protected time for briefings, and basic document-control discipline. Distinguishing context-specific from potentially generalisable insights is therefore

essential. Context-specific elements include national quarantine logistics, pay/allowance structures, and locally determined decision rights. Potentially generalisable are the underlying logics: transparent briefings that shorten sense-making cycles; coaching-oriented, visible supervision; standard work that is iteratively refined; and feedback loops that transform emergent fixes into updated guidance (Pasmore et al., 2019; Womack, 1996). The outputs (manuals, dashboards, briefing formats) must be locally co-designed to fit regulation, workforce composition, and existing information systems.

Transfer should proceed conditionally and iteratively in line with PDCA cycles by piloting practices in one unit/route, checking outcomes with mixed data (operational performance, safety reports, staff feedback), and acting by standardising what works and retiring what does not. This approach reduces the risks of superficial ‘best-practice’ adoption and respects boundary conditions (resource levels, union frameworks, cultural norms), while preserving the resilience-enhancing mechanisms surfaced by this study (Pasmore et al., 2019; Womack, 1996). Table 19 presents a matrix that clarifies which elements should be treated as case-specific detail and which represent portable mechanisms. Practically, the rightmost column functions as an adoption checklist: if conditions are weak (e.g., limited audit capacity, no change-log discipline), the mechanism should be piloted and staged rather than rolled out wholesale (Pasmore et al., 2019; Womack, 1996). Read together with Table 19, the portable mechanisms are those that operate above local particulars: keeping two-way communication open during rapid change; balancing policy compliance with adaptive micro-improvements; and using supportive supervision to buffer stress and ensure consistent enactment of new protocols. These travel where organisations share crisis features such as rapid external mandates, tight safety coupling, and hierarchical traditions (Shenton, 2004; Yin, 2018).

Transfer is conditional. It is strongest when boundary conditions align e.g., availability of training bandwidth, documentation capacity for short-cadence PDCA, and leadership commitment to psychologically safe feedback. Where these conditions differ, the direction of effect is still informative: efforts that shorten improvement cycles, clarify standards, and protect voice tend to stabilise service and safety performance in volatile contexts (Deming, 1993; Oakland, 2014). To assist adaptation, Chapter 5’s Crisis-Responsive TQM (CRTQM) translates these mechanisms into deployable levers (accelerated PDCA, contingency-triggered playbooks, and STS guardrails). Leaders in cognate sectors can map their local conditions to these levers, using Table 19’s checklist to stage adoption accordingly.

Theme	Context-bound facets & boundary conditions	Potentially generalisable mechanism(s)	Transfer conditions / limits
T1 Communication & Leadership	Reliance on WhatsApp/email; local decision rights	Dialogic briefings; upward voice; visible leadership rounds	Leadership commitment; scheduled briefings; escalation clarity
T2 Training & Professional Development	COVID-specific protocols; quarantine-driven rostering	Integrated technical and psychosocial training; simulations	Trainer capacity; protected training time; scenario realism
T3 Cultural Adaptation & Team Support	Local hierarchies; favouritism perceptions	Peer support systems; cross-role problem-solving	Anti-bias practices; team coaching; psychological safety norms
T4 Risk Management & Safety Culture	National testing/quarantine rules; hotel logistics	Coherent controls; open reporting; iterative protocol updates	Speaking-up channels; audit capacity; harmonised messaging
T5 Employee Well-being & Job Security	Salary/allowance formulas; foreign-staff policies	Regular well-being checks; transparent rationale for changes	HR capacity; confidentiality safeguards; fair scheduling
T6 Policy & Procedural Compliance	CARC/MoH-specific mandates; ‘Corona manual’ content	Single source of truth; change logs; quick reference guides	Document control discipline; versioning; access on shift
T7 Accountability & Empowerment	Case-specific delegation levels	Clear decision rights; devolved problem-solving within guardrails	Governance clarity; risk tolerance; supervisor training
T8 Operational Pressures	Fleet/crew size; local demand volatility	Fatigue risk management; flexible rostering; clear escalation	Data for rostering; reserve coverage; duty-time policies
T9 Effective Supervision & Support	Supervisor–crew ratios; local supervision model	Check-ins; on-the-spot coaching; fair recognition	Time allocation; coaching skills; transparent criteria
T10 Adaptive Operational Strategies	Repatriation/vaccination workflows; hotel quarantine	PDCA cycles; codifying emergent practices; debriefs	Facilitation skills; update cadence; cross-unit sharing

Table 19 Context-bound vs. potentially generalisable insights from findings.

4.13 Chapter Summary

Chapter 4 presents the findings from interviews with cabin crew and management personnel at the sample organisation, highlighting how the organisation navigated the unprecedented conditions brought about by the COVID-19 pandemic and revealing the extent to which TQM principles influenced its crisis response. The research identified ten interrelated themes, each shedding light on different aspects of organisational resilience and the day-to-day realities that staff encountered.

A recurring emphasis on communication and leadership demonstrates the significance of transparent information-sharing, empathetic guidance, and inclusive decision-making. Insufficient clarity in conveying critical protocols, coupled with a perceived detachment of senior decision-makers, created confusion and mistrust among frontline staff, yet some managers adapted to more supportive and participatory styles. Training and professional development emerged as another dominant concern, reflecting a collective sense of inadequate preparation and insufficient skill-building initiatives. Many cabin crew members had to adjust on the fly, while managers sometimes belatedly recognised the need for practical drills and mental health support, underscoring the importance of holistic staff development in TQM-based strategies.

The interviews also drew attention to cultural adaptation and team support, illustrating how informal peer networks served as a vital safety net when formal processes fell short. Although these networks promoted unity, deep-rooted hierarchical norms and occasional unequal treatment frustrated employees and underlined the complexity of fostering inclusive teamwork across a culturally diverse workforce. Discussions around risk management and safety culture highlighted considerable tension between swiftly updated operational guidelines and frontline experiences. Inconsistent quarantine protocols, contradictory rules about personal protective equipment, and emotional stress all undermined the airline's intentions to prioritise safety, demonstrating that continuous improvement and collective responsibility, central to TQM, require both robust policies and sensitive execution.

A further theme, employee well-being and job security, was of widespread concern, given how salary reductions, layoffs, and strict quarantine measures produced high levels of anxiety and led some workers to question management's commitment to their welfare. This dissatisfaction had direct repercussions for morale, ultimately affecting service quality and retention. Policy and procedural compliance was similarly fraught; participants frequently described insufficient training for rapidly changing procedures, inconsistent enforcement across different parts of the organisation, and inadequate guidance from leadership. These issues eroded trust and made it difficult for employees to sustain the standardisation TQM envisions in a fast-moving crisis environment.

In discussing accountability and empowerment, cabin crew pointed out instances where management either failed to delegate authority adequately or enforced unappealing duties under threat of discipline. Although these conditions hindered true engagement, some managers recognised the advantages of a more empowering approach. Nonetheless, existing hierarchical structures, coupled with crisis-induced uncertainties, often undermined TQM's core ethos of staff-driven improvement. Operational pressures, such as reduced staffing, extended shifts, and flight reconfigurations, caused elevated fatigue, stress, and at times compromised safety standards. Cabin crew noted that a shortage of replacements and inconsistent scheduling practices aggravated the sense of being overburdened, suggesting the importance of measured resource allocation and continuous improvement mechanisms to address day-to-day logistical constraints.

Effective supervision and supportive practices proved crucial for aligning operational goals with employee needs, yet many respondents observed that leadership was often absent in tangible moments of difficulty. Where supervisors were consistently visible, offered real-time guidance, and showed empathy, morale and performance tended to improve. The final theme, adaptive operational strategies, revealed both the organisation's capacity to innovate quickly and the limitations inherent in emergency-driven changes. Quarantine regulations, 'Corona Manuals,' and repatriation flight protocols showed signs of organisational learning, but were sometimes patched together too hastily. Staff pointed out that they experienced these adaptations as scattered or incoherent when insufficient consultation took place. Managers, in turn, advocated for preserving certain adaptive routines as an ongoing part of strategic planning, thereby aligning with TQM's emphasis on iterative feedback loops, flexibility, and quality-oriented improvements.

Taken as a whole, the chapter demonstrates that essential TQM principles continuous improvement, employee participation, clear communication, and shared ownership did guide some managerial decisions and frontline adjustments during the pandemic. However, leadership gaps, inadequate training, inconsistent rule enforcement, and heightened personal anxieties frequently impeded TQM's full realisation. Although notable efforts were made to adapt operational procedures and foster resilience, the findings confirm that a more coherent, inclusive, and supportive framework remains necessary for long-term viability. By paying greater attention to employee well-being, empowered leadership, and the practical integration of crisis adaptations into everyday practices, the airline can bolster its resilience and enhance service quality in the face of future upheavals.

Chapter. 5 Discussion and Conclusion

5.1 Introduction

This chapter examines, interprets, and contextualises the findings presented in the preceding chapters by re-engaging with the original research questions (RQs) to evaluate how effectively they have been answered and determining the extent to which the study broadens existing TQM research. It synthesises the principal themes emerging from the qualitative data, highlighting how these themes overlap, diverge, and collectively enhance the researcher understanding of TQM's practical challenges under extreme disruptions such as the COVID-19 pandemic. The chapter also draws upon and critiques key theoretical frameworks including classic TQM scholarship, STST, and aviation-specific safety culture literature to illustrate how the Jordanian aviation sector's experiences both reinforce and complicate prevailing assumptions. To emphasise the broader relevance of these findings, it presents the 'so what' factor for practitioners, policymakers, and scholars, underscoring future readiness in crisis-driven industries.

In doing so, it offers both practical recommendations for airline executives, regulators, and training institutes and theoretical implications for TQM scholars, thereby providing a robust foundation for subsequent policy design and research directions. Throughout this discussion, the chapter references specific themes such as communication gaps, training deficiencies, and cultural tensions to ensure each dimension of the data is examined through both theoretical and applied lenses. The integrative structure weaves these themes together, shedding light on the core tensions, opportunities, and lessons for TQM in crisis contexts. As established in the earlier chapters, this study revolved around five primary RQs, which collectively answered the central research question: *how can TQM strategies enhance the resilience of the Jordanian aviation industry in the aftermath of the COVID-19 pandemic?* Table 20 summarises each of the five RQs alongside the corresponding thesis objectives. This alignment ensures that the subsequent discussion systematically addresses both the theoretical and practical dimensions of TQM application within Jordan airlines during the COVID-19 crisis. These questions were addressed through a qualitative case study within a Jordanian airline context. Subsequent sections of this Discussion chapter articulate how each theme addresses a research question, thereby forming the analytical core of this thesis.

Research Question (RQ)	Link to Objective(s)	Explanation/Focus
RQ1: Which core TQM principles are most relevant for crisis management in the aviation sector, and how were they operationalised (or not) during the COVID-19 pandemic?	Objective 1	Illuminates the breadth and depth of TQM usage under emergency conditions, pinpointing which elements of TQM (e.g., employee empowerment, continuous feedback loops) translated into tangible crisis-management practices.
RQ2: How did COVID-19 contingencies, both external (e.g., rapidly changing health regulations) and internal (e.g., financial pressures), impact operational aspects of Jordanian aviation sector?	Objective 2	Focuses on the nexus between crisis-driven constraints and operational decision-making, shedding light on how cost-cutting, regulatory shifts, or workforce adjustments shaped TQM-oriented reforms.
RQ3: In what ways did leadership approaches and employee engagement dynamics contribute to, or hinder, effective crisis response, as measured against TQM ideals?	Objective 3	Examines how leadership style and cultural norms either aligned with TQM's collaborative ethos or reverted to more autocratic paradigms under pressure, affecting frontline engagement and resilience (He & Harris, 2020).
RQ4: What enhancements or adaptations to conventional TQM models are warranted, given the crisis experiences observed in Jordanian aviation sector?	Objective 4	Proposes evidence-based modifications, incorporating local cultural factors and crisis-specific stressors, to strengthen TQM's applicability and longevity in volatile environments.
RQ5: What policy recommendations, at both organisational and industry-wide levels, emerge from this study to reinforce sustainable, employee-centric, and quality-driven practices?	Objectives 2 and 4	Integrates micro- (organisational) and macro- (regulatory/policy) perspectives, aiming to inform future strategies on training, employee welfare, crisis communications, and leadership development.

Table 20 Research questions aligned with thesis objectives.

5.2 Key Findings in Light of TQM and Crisis Management

The data generated a multi-faceted view of how TQM ideals were tested under crisis circumstances, yielding ten specific themes. Table 16 presents the ten major themes identified through the data analysis. Although each theme provides standalone insights, they collectively illustrate how crisis circumstances tested TQM principles from communication and training, to accountability and operational agility within the aviation sector. Each theme independently offers valuable insights which collectively portray a system in which TQM's core pillars of continuous improvement, participatory leadership, employee well-being, and standardised processes became increasingly strained by the unprecedented demands of COVID-19. Despite the aviation sector's historical emphasis on safety and quality control, the study reveals that actual practices often deviated considerably from TQM's guiding tenets once the pandemic disrupted normal operations.

Table 21 presents a concise summary of the ten themes emerging from section 5.2.1 of the discussion, linking each theme's core findings to relevant TQM-based concepts and the specific sub-questions from this study. The key points column offers a quick overview of each theme such as communication gaps, training deficits, cultural tensions, and adaptive strategies while the TQM and literature links column makes explicit how each theme resonates with or challenges established theories, e.g., Deming's PDCA cycle, socio-technical balance, Lewin's change model. By including the relevant sub-questions alongside each theme, the table underscores how these empirical observations directly address the study's overarching research aims. In so doing, the table serves not merely as a summary device but as an analytical bridge, showing how day-to-day crisis responses in Jordanian aviation both illuminate and stress-test the theoretical underpinnings of TQM, crisis management, and leadership paradigms. This organised layout helps connect practical findings to the study's broader research framework, ultimately clarifying the significance of each theme for both academic inquiry and applied policy recommendations.

Theme	Key points	TQM and literature links	Relevant sub-questions
1. Communication Gaps and Top-Down Decision-Making	- One-way directives (WhatsApp/email blasts). - Little frontline input → confusion and distrust. - Managers shifted to autocratic decisions under crisis pressure.	- TQM requires open feedback (Deming, 1993; Oakland, 2014). - Crisis demands participatory strategies (Donthu & Gustafsson, 2020). - ‘Crisis reflexes’ undermine TQM ideals (Burns, 1961; Scholtes, 1998).	(Q3) Leadership/Engagement: abrupt shift to autocracy. (Q4) TQM Enhancement: calls for crisis-communication protocols balancing speed and frontline input.
2. Training Deficiencies and ‘Learning on the Fly’	- Minimal crisis/mental-health training. - Some PPE training, but no passenger psychology or de-escalation. - Employees relied on peer advice or informal resources.	- Continuous training is a TQM pillar (Oakland, 2014). - Safety-critical industries emphasise frequent, comprehensive training (Reason, 2003). - ‘Soft TQM’ (Mehta & Shah, 2005) neglected (emotional support, empowerment).	(Q1) TQM Principles for Crisis: training crucial yet overlooked. (Q4) TQM Enhancement: suggests scenario-based and mental-health modules for future crises.
3. Cultural Tensions and Informal Support Networks	- Strong reliance on WhatsApp groups for info/emotional support. - Perceived favouritism and hierarchical deference. - Local vs. foreign staff disparities.	- TQM assumes inclusive teamwork (Deming, 1993) but power distance (Hofstede, 2001) may conflict. - Informal peer networks highlight distrust in formal structures. - Need culturally sensitive TQM policies (Schein, 2002).	(Q3) Engagement thrives in informal domains when formal systems fail. (Q5) Policy Recommendations: must address favouritism, cultural stratification, inclusive leadership.
4. Inconsistent Risk Management and Safety Protocols	- Contradictory or rapidly changing rules (masks, quarantine) . - Aviation’s standardisation compromised.	- Safety culture in aviation: consistent, well-communicated SOPs (Reason, 1990).	(Q2) COVID-19’s Impact: destabilised fundamental aviation routines.

	- Lack of frontline feedback in drafting 'Corona Manual'.	- TQM's PDCA cycle (Deming, 1993) bypassed or rushed. - Crises demand agility but also clarity to maintain trust.	(Q4) TQM Enhancement: calls for agile yet standardised crisis protocols with frontline input.
5. Employee Well-being and Job Security Concerns	- Lay-offs/salary cuts, especially for foreign staff. - Minimal mental-health support, fear of job loss. - Gap between 'people-first' rhetoric and reality.	- TQM's 'people-first' ethos (Deming, 1993) undermined by crisis cuts. - Employee morale critical to continuous quality improvement. - Crisis overshadowed workforce support, eroding trust.	Q3) Leadership/Engagement: neglecting well-being ruins morale (Q5) Policy Recommendations: need robust mental-health, fair restructuring, transparent communication around job security.
6. Policy and Procedural Compliance Under Strain	- Frequent, conflicting new mandates (govt, health, internal). - Staff lost faith in any 'stable' directive. - Partial compliance and workarounds became normal.	- Lewin (1947) change model disrupted by continuous flux. - TQM relies on stable iterative improvements, but rapid changes created confusion. - 'Rushed, top-down' changes rarely yield lasting commitment.	(Q1) TQM Principles for Crisis: real-time documentation and updates needed. (Q5) Policy Recommendations: agile SOPs that adapt to evolving mandates, maintaining clarity.
7. Accountability and Empowerment Deficits	- Decision-making centralised; staff coerced into risky tasks. - Middle managers bypassed, minimal local authority. - 'Drive out fear' principle (Deming) contradicted, fueling resentment.	- TQM frameworks (Burns, 1961; Scholtes, 1998) highlight frontline empowerment. - Hierarchical approach → employees as passive recipients, not problem-solvers. - Undermines Deming's 'drive out fear' essential for open communication.	(Q3) Leadership/Engagement: autocratic leadership stifles initiative. (Q4) TQM Enhancement: institutional design must embed genuine empowerment (delegation, grievance processes, collaboration incentives).

8. Escalating Operational Pressures	- Staff shortages, financial struggles, new regulations → burnout. - ‘Operational survival’ overshadowed normal safety/HR protocols. - Tension between TQM’s methodical approach and crisis chaos.	- Socio-technical balance (Pasmore, 1988) disrupted: technical efficiency overshadowed human welfare. - TQM (Deming, 1986a) depends on workforce stability. - Pandemic forced perpetual reactive mode, undermining continuous improvement.	(Q2) COVID-19 Impact on Operations: frequent schedule changes, resource juggling. (Q5) Policy Recommendations: TQM-based contingency must include flexible staffing, stress management, mental-health support.
9. Supervision and Supportive Practices	- Varying supervision styles: some proactive/empathetic, others authoritarian. - Middle managers as ‘culture carriers’ bridging top-level strategy and frontline realities. - Inconsistent staff experiences across departments.	- TQM underscores middle management’s pivotal role (Deming, 1993; Oakland, 2011). - Supportive leadership reduces burnout (Mazzetti & Schaufeli, 2022). - Lack of uniform TQM internalisation means local successes/failures vary.	(Q3) Leadership/Engagement: supervisor style can mitigate or worsen stress. (Q4) TQM Enhancement: consistent training and evaluation of supervisors on empathetic leadership.
10. Adaptive Operational Strategies	- Issuing ‘Corona Manuals,’ repatriation missions, partial proactive stance. - Rapid adaptation outpaced planning/feedback. - Frontline staff excluded from design → varied adoption, some resistance.	- Continuous improvement (Kaizen) and PDCA cycle (Deming, 1993; Womack, 1996) require frontline involvement. - Speed without systematic feedback undermines long-term quality. - Crisis can spur innovation, but TQM must integrate ‘Check’ and ‘Act’ phases	(Q2) COVID-19 Operational Impact: swift pivots but lacking thorough PDCA. (Q4) TQM Enhancement: agility + frontline Kaizen crucial for sustainable improvements.

Table 21 Key themes identified in the data.

5.2.1 Detailed Discussion of Each Theme in Context

5.2.1.1 Communication Gaps and Top-Down Decision-Making

Communication patterns during the pandemic leaned heavily toward one-directional, top-down channels, e.g., WhatsApp blasts, email directives, with minimal space for frontline input or interactive dialogue. Interview participants frequently described feeling overwhelmed and confused about changing procedures, while also sensing that management either did not welcome or did not have the bandwidth to consider their feedback. On the managerial side, there was an acknowledgement of tension: managers stated that the crisis moved too quickly for them to engage in lengthy consultative processes, compelling more autocratic decision-making.

Connection to TQM and Crisis Management Literature: TQM posits that open communication and continuous feedback loops are foundational to fostering a culture of quality (Deming, 1993; Oakland, 2014). In crisis-management scholarship, Donthu and Gustafsson (2020) highlight the importance of agile yet participatory communication strategies to ensure rapid learning and adaptation. Reason (2016) safety discourse similarly emphasises that effective communication pathways reduce confusion, maintain alignment on procedural priorities, and prevent errors. Contrary to these expectations, the airline's reliance on one-way communications appears to have contributed to operational inconsistencies and heightened employee distrust.

The findings here challenge a common assumption in TQM theory: that once organisations adopt TQM practices, they will maintain a participatory posture even under duress. Instead, the pressure of COVID-19 prompted a rapid reversion to autocratic behaviours, what might be termed 'crisis reflexes'. This is not wholly surprising in high-stakes environments. However, it does demonstrate the fragility of TQM ideals when leaders perceive an urgent need for speed and control. Scholtes (1998) and Burns (1961) suggest that TQM's success depends on minimising hierarchical distance and empowering frontline actors to share responsibility for quality outcomes. The airline's experience thus exposes a significant gap between TQM's theoretical recommendations and real-world application under severe stress.

The breakdown in two-way communication resonates most strongly with *sub-question 3, in what ways did leadership approaches and employee engagement dynamics contribute to, or hinder, effective crisis response, as measured against TQM ideals?* (Leadership and Employee Engagement) by illustrating how leadership styles can transform abruptly in crisis conditions, undermining TQM's collaborative ethos. It also informs *sub-question 4, what enhancements or adaptations to conventional TQM models are warranted, given the crisis experiences observed in Jordanian aviation sector?* (TQM Enhancement Model) by highlighting an urgent need for pre-designed crisis-communication protocols. Such protocols must balance decisive leadership with frontliner input, ensuring that the voices closest to day-to-day operations do not become sidelined.

5.2.1.2 Training Deficiencies and 'Learning on the Fly'

Despite aviation's reputation for rigorous and standardised training protocols, the airline's cabin crew reported receiving minimal crisis-specific or mental-health training in response to COVID-19. While certain technical procedures, such as donning PPE were hurriedly introduced, broader crisis-management competencies, including passenger psychology, de-escalation techniques, and mental-health resilience, were notably absent. Employees expressed feeling unprepared, and some noted that improvised peer advice or online resources filled the gap where formal training should have been.

Connection to TQM and Aviation Safety Literature: TQM encourages ongoing, systematic training to equip employees with the knowledge and skills they need for continuous quality improvement (Oakland, 2014). In safety-critical industries, Reason (1990) emphasise that frequent and comprehensive training is integral to preventing errors, ensuring consistency, and building organisational resilience. Yet the data reveal a stark contrast: the airline neglected psychosocial and crisis-oriented training, possibly due to cost constraints, rapid operational changes, or a belief that existing safety modules would suffice.

This disconnect exposes what some refer to as 'soft TQM' failures (Mehta & Shah, 2005). While 'hard TQM' often focuses on standard operating procedures and process optimisation, 'soft TQM' highlights cultural and human-development aspects, including emotional support,

engagement, and empowerment. The present study confirms that overlooking these dimensions can weaken the entire TQM framework, as employees who feel unsafe or ill-prepared lack the psychological security to carry out high-risk duties confidently.

The training shortfalls address primarily *sub-question 1, which core TQM principles are most relevant for crisis management in the aviation sector, and how were they operationalised (or not) during the COVID-19 pandemic?* (TQM Principles for Crisis Management). It becomes clear that the principle of continuous training, a hallmark of TQM, was insufficiently adapted for pandemic conditions. Moreover, *sub-question 4, what enhancements or adaptations to conventional TQM models are warranted, given the crisis experiences observed in Jordanian aviation sector?* TQM Enhancement Model is again implicated, pointing to a need for simulations, scenario-based training, and mental-health support embedded within TQM architectures. Absent these, employees are forced into ‘learning on the fly,’ intensifying operational risk and anxiety.

5.2.1.3 Cultural Tensions and Informal Support Networks

A notable finding was the extent to which employees relied on informal peer support networks, particularly via WhatsApp groups, to navigate procedural confusion and emotional distress. Such reliance was exacerbated by deeper cultural undercurrents: perceptions of favouritism, hierarchical deference, and a disparity in how local versus foreign staff were treated. While these informal networks served as a coping mechanism, they also underscored the distrust in official structures. Employees’ willingness to provide mutual aid emerged not from a sense of formal solidarity under TQM but rather from informal, collectivist bonds that took shape outside the organisational hierarchy.

Connection to TQM and Organisational Culture Theory: TQM assumes an inclusive, team-based culture that transcends formal hierarchies (Deming, 1993). However, this assumption is increasingly questioned in cross-cultural contexts, where power distance and collectivist/individualist norms shape how employees perceive and respond to leadership. Schein (2002) and Hofstede (2001) provide insight into how national and organisational cultures can undermine universalistic management frameworks, including TQM if cultural

dimensions, such as deference to authority or ingrained favouritism, are not directly addressed. The airline's experience suggests that merely promoting TQM values, including teamwork, openness, continuous improvement does not necessarily mitigate existing sociocultural inequalities or biases. Indeed, the presence of strong, informal support networks indicates that employees sought collectively to fill a void left by inadequate official mechanisms. These grassroots networks, while beneficial in the short term, do not solve underlying issues of favouritism or hierarchical inequities; instead, they may reinforce parallel structures that remain invisible to top leadership.

These findings resonate with *sub-question 3, in what ways did leadership approaches and employee engagement dynamics contribute to, or hinder, effective crisis response, as measured against TQM ideals?* (Leadership and Employee Engagement), illustrating that employee engagement often thrives more in informal domains when formal systems appear inequitable or dysfunctional. *Sub-question 5, what policy recommendations, at both organisational and industry-wide levels, emerge from this study to reinforce sustainable, employee-centric, and quality-driven practices?* (Policy Recommendations) also becomes pertinent. The airline cannot fully realise TQM's potential without confronting cultural tensions head-on and developing culturally sensitive policies, anti-favouritism guidelines, and inclusive leadership training. If TQM is to succeed long term, it must adapt to, rather than ignore, the realities of cultural stratification and informal power dynamics.

5.2.1.4 Inconsistent Risk Management and Safety Protocols

Though the airline introduced numerous safety measures, such as the 'Corona Manual' and special repatriation flights, employees frequently reported contradictory or rapidly changing instructions. For instance, some were unclear about quarantine rules or whether masks were consistently mandated during meal services. These inconsistencies contributed to widespread confusion, undercutting the notion that aviation, an industry famed for standardised operating procedures, could effectively maintain a unified safety protocol under pandemic pressures.

Connection to Aviation Safety Culture and TQM Principles: Aviation safety culture typically relies on consistent, well-communicated protocols that all staff, from ground crew to pilots, are

expected to follow rigorously (Reason, 1990). TQM augments this foundation by emphasising continuous improvement and a closed feedback loop that ensures updates to protocols are tested, refined, and disseminated thoroughly. The contradictory experiences described in interviews reveal that, during COVID-19, protocols were often drafted hastily and did not incorporate sufficient frontline feedback before rollout. This lack of coherence and frontline validation suggests that TQM's iterative Plan–Do–Check–Act (PDCA) cycle (Deming, 1993) was either bypassed or truncated.

On a deeper level, the observed inconsistencies raise questions about the structural capacity for risk assessment under extreme uncertainty. Rushed policy changes, driven by external and internal imperatives, left employees uncertain, thus weakening compliance. This situation underscores a tension in TQM literature: while TQM seeks standardisation and clarity, crises demand rapid adaptation. If those adaptations are not carefully planned and communicated, they risk further eroding the trust and predictability that TQM relies on to function effectively.

With respect to *sub-question 2, how did COVID-19 contingencies, both external, e.g., rapidly changing health regulations, and internal, e.g., financial pressures, impact operational aspects of Jordanian aviation sector?* COVID-19's impact on operations, these inconsistencies provided direct evidence of how the pandemic destabilised fundamental aviation routines. The relation with *sub-question 4, what enhancements or adaptations to conventional TQM models are warranted, given the crisis experiences observed in Jordanian aviation sector?* (TQM Enhancement Model) is also clear: any future TQM-based system must incorporate agile yet standardised crisis protocols, ensuring that changes remain transparent, are informed by frontline realities, and respect the necessity of uniform safety standards.

5.2.1.5 Employee Well-being and Job Security Concerns

Employees, particularly foreign staff, were disproportionately affected by lay-offs and salary cuts. Even those who remained expressed fear for their jobs, increased stress levels, and a perception that the airline prioritised cost containment over employee welfare. Critically, there was minimal psychological support available beyond tokenistic references to employee

assistance hotlines that many did not trust or even know how to access. Some participants revealed they felt so undervalued that they considered leaving the industry altogether.

Connection to Human-Centric TQM: Central to TQM is the principle that a satisfied, engaged workforce is indispensable for maintaining high-quality services (Mayo in (Mehta & Shah, 2005). Deming (1993) famously argued that job security and a climate of trust are foundational to continuous quality improvement. Yet this study indicates that crisis-time cost-cutting often targeted the workforce in ways that contradicted TQM's 'people-first' ethos. Employee well-being suffered not merely from external pandemic stressors but also from internal policies that exacerbated financial insecurity and psychosocial strain.

Historically, aviation has balanced business imperatives with strict safety guidelines, but the pandemic introduced a level of uncertainty that overshadowed concerns about workforce morale. The result was a dissonance between official TQM rhetoric, around employee value, empowerment, and engagement, and the lived realities of staff who perceived themselves as expendable. This dissonance likely undermines future attempts to foster a genuinely TQM-based culture, since employees who feel betrayed during a crisis may be reluctant to trust management once normal operations resume.

This theme addresses directly *sub-question 3, in what ways did leadership approaches and employee engagement dynamics contribute to, or hinder, effective crisis response, as measured against TQM ideals?* Leadership and employee engagement provided concrete evidence of how neglecting employee well-being erodes morale and loyalty. Furthermore, *sub-question 5, what policy recommendations, at both organisational and industry-wide levels, emerge from this study to reinforce sustainable, employee-centric, and quality-driven practices?* Policy recommendations emerged clearly, showing how any comprehensive crisis-management plan grounded in TQM principles must incorporate robust mental-health support, equitable restructuring policies, and transparent communication strategies around job security. Without these elements, TQM's collaborative ethos becomes hollow, particularly during prolonged disruptions like a pandemic.

5.2.1.6 Policy and Procedural Compliance Under Strain

Data from interviews highlighted that employees encountered frequent, sometimes contradictory, policy changes. These changes originated from multiple sources: government regulators, health authorities, and internal cost-driven mandates. Over time, staff seemed to lose confidence that any new directive would remain valid long enough to be worth learning thoroughly. Partial compliance and workarounds proliferated, some employees openly admitted to ‘doing what made sense’ rather than trying to adhere to the official and often unfeasible policy of the week.

Connection to Change Management and TQM: Lewin (1947) classic model of change management, unfreeze, change, refreeze, outlines a deliberate process of implementing new policies. Yet in a crisis of the magnitude seen with COVID-19, organisations struggled even to complete the ‘unfreeze’ stage before fresh mandates arrived, rendering the ‘refreeze’ stage nearly impossible. Flory (2022) extends this logic by noting that systems prone to design flaws are ill-equipped to handle abrupt, large-scale changes. TQM, which relies on stable, iterative improvements, is similarly compromised when continuous flux overwhelms the capacity for thorough assimilation of new policies. From a TQM standpoint, policy compliance is intrinsic to quality assurance, especially in safety-critical industries where standardisation is linked to reliability. The airline’s experiences echo the concept that ‘rushed, top-down change’ rarely engenders enduring commitment among frontline employees. Instead, TQM underscores a more measured approach, involving stakeholder consultation, pilot testing, and continuous feedback loops, an approach that was largely absent here.

Regarding *sub-question 1, which core TQM principles are most relevant for crisis management in the aviation sector, and how were they operationalised (or not) during the COVID-19 pandemic?* (TQM Principles for Crisis Management). The data reinforce that robust documentation, immediate training, and real-time updates form an integral part of TQM-based crisis governance. However, to meet *sub-question 5, what policy recommendations, at both organisational and industry-wide levels, emerge from this study to reinforce sustainable, employee-centric, and quality-driven practices?* (Policy Recommendations), an airline or regulator must craft agile, coherent frameworks that can accommodate fast-evolving health mandates without becoming contradictory or infeasible. This may require flexible standard

operating procedures that incorporate a range of scenarios, thereby reducing the confusion that arises when single-solution policies are repeatedly superseded.

5.2.1.7 Accountability and Empowerment Deficits

One of the starkest contradictions to TQM's emphasis on distributed responsibility was the widespread centralisation of decision-making during COVID-19. Some employees reported feeling coerced into taking risky assignments or schedules, under an implied threat of disciplinary action if they refused. Middle managers similarly described being bypassed or used merely as conduits for top-down mandates, with little real authority to adapt protocols to local conditions. This dynamic stifled initiative, contributed to resentment, and weakened any sense of collective ownership over safety and service quality.

Connection to TQM Ideals of Empowerment and Leadership: TQM frameworks, influenced by scholars such as Scholtes (1998), emphasise frontline empowerment as a source of continuous improvement. Employees with 'on-the-ground' expertise are best positioned to spot inefficiencies, propose refinements, and enhance service delivery. When leadership remains highly centralised, however, these benefits evaporate, and employees become passive recipients of commands rather than active contributors to problem-solving (Burns, 1961). The notion of a 'learning organisation' (Senge, 1990), often aligned with TQM, presupposes that all levels of staff can exercise autonomy and creativity in service of shared goals.

The data from this study not only validate TQM's argument for empowerment but also highlight the detrimental outcomes when empowerment is lacking. Several participants described instances of minimal autonomy in responding to rapidly shifting flight conditions, thereby heightening stress and diminishing morale. Others felt that speaking up about safety lapses or contradictory policies would be futile or worse, career-threatening. This scenario runs counter to Deming's principle of 'driving out fear,' which he cites as essential for quality improvement and open communication.

This theme is relevant to *sub-question 3, in what ways did leadership approaches and employee engagement dynamics contribute to, or hinder, effective crisis response, as measured against*

TQM ideals? (Leadership/employee engagement), demonstrating how hierarchical, at times coercive, leadership styles directly impede TQM's core premise of frontline involvement. It also resonates with *sub-question 4, what enhancements or adaptations to conventional TQM models are warranted, given the crisis experiences observed in Jordanian aviation sector?* (TQM Enhancement Model), calling for institutional design changes that embed genuine empowerment mechanisms, such as delegated decision rights, transparent grievance processes, and performance evaluations that reward collaboration over unquestioning compliance.

5.2.1.8 Escalating Operational Pressures

Participants repeatedly referred to the compounding strain of juggling staff shortages, financial hardships, and new regulations. Consequently, they reported more intense workloads, fewer rest periods, and a pervasive sense of fatigue that endangered both employee well-being and service quality. Some staff suspected that upper management, under pressure to maintain solvency, prioritised 'operational survival' over strict adherence to normal safety or HR protocols, leading to an unsustainable cycle of burnout.

Connection to STST and TQM: STST (Pasmore, 1988) argues that organisations must balance technical efficiency with human well-being. The present findings illustrate how crisis pressures tipped this balance decisively toward operational imperatives, marginalising employee welfare. TQM, especially as conceptualised by Deming (1986a), positions workforce stability and satisfaction as preconditions for consistent quality output. The pandemic environment, however, disrupted traditional resource planning, leaving many staff members overextended and stressed.

Moreover, the aviation sector's already intricate schedule management was severely tested by border closures, changes in flight routes, and evolving quarantine rules. The airline found itself in an unending reactive stance, intensifying the tension between financial concerns and the core TQM principle of system optimisation through measured, data-driven improvements. This situation aligns with prior research on crisis-induced operational complexity (Skinner, 1974), but extends that literature by demonstrating how TQM ideals of continuous improvement can falter when the organisation becomes mired in perpetual crisis mode.

These operational pressures address *sub-question 2, how did COVID-19 contingencies, both external (e.g., rapidly changing health regulations) and internal (e.g., financial pressures) impact operational aspects of Jordanian aviation sector?* (COVID-19's Impact on Operations) by revealing the magnitude of disruption that required frequent schedule changes and staff redeployments. Additionally, they have clear policy relevance (*sub-question 5 what policy recommendations, at both organisational and industry-wide levels, emerge from this study to reinforce sustainable, employee-centric, and quality-driven practices?*), emphasising that TQM-based contingency planning must integrate flexible staffing, stress management, and mental-health support. Otherwise, as the data show, organisations risk depleting their workforce exactly when they need stability and focus the most.

5.2.1.9 Supervision and Supportive Practices

Despite the overarching shift toward autocratic communication, supervision styles varied significantly across departments. Some supervisors took a proactive approach, regularly checking in with crew members, clarifying protocols, and offering emotional support. In these pockets, employees reported feeling better equipped to handle stressful flights and more inclined to trust new mandates. Conversely, others relied on authoritarian oversight, issuing directives with little empathy or explanation, which deepened employee frustration and alienation.

Connection to TQM's Emphasis on Middle Management: TQM literature places considerable weight on middle management's role as 'culture carriers,' bridging strategic goals with frontline realities (Deming, 1993; Oakland, 2011). Mazzetti and Schaufeli (2022) underscore that supportive leadership boosts motivation and reduces burnout, linking it to higher performance outcomes. In line with these ideas, the study's findings highlight that even under top-down policy constraints, proactive supervisors can buffer negative impacts and exemplify TQM virtues at a local level. The variation in supervisory styles reveals, however, that TQM is not uniformly internalised and is highly dependent on individual supervisors' management philosophies and personal capacities. The data thus enrich TQM scholarship by suggesting that while top-level leadership often sets a strategic tone, it is the day-to-day supervisory

interactions that cultivate or undermine employee engagement and adherence to quality standards. This dynamic is particularly salient in crisis contexts, where employees look for immediate reassurance and practical guidance, rather than abstract corporate statements about TQM.

Supervision and supportive practices tie closely into *sub-question 3, in what ways did leadership approaches and employee engagement dynamics contribute to, or hinder, effective crisis response, as measured against TQM ideals?* (Leadership/Employee Engagement) by specifying how middle managers can either uphold or erode TQM-driven resilience. This also informs *sub-question 4, what enhancements or adaptations to conventional TQM models are warranted, given the crisis experiences observed in Jordanian aviation sector?* (TQM Enhancement Model), indicating a need for organisational structures that consistently train and evaluate supervisors on supportive, empathetic leadership competencies, ensuring TQM ideals endure at every managerial level even under crisis conditions.

5.2.1.10 Adaptive Operational Strategies

The airline attempted several adaptive strategies issuing dedicated ‘Corona Manuals’, running special repatriation missions, and shifting from reactive to partially proactive management. However, the pace of adaptation often outstripped the organisational machinery for planning, consultation, and refinement. Because frontline staff were largely excluded from the design process for these new procedures, adoption rates varied. Some employees resisted or misunderstood the changes, while others simply lacked confidence in the airline’s ability to sustain any new measures beyond an immediate crisis horizon.

Connection to Continuous Improvement (Kaizen) and PDCA Cycle: Adaptive strategies align conceptually with TQM’s focus on continuous improvement (Kaizen) (Womack, 1996) and Deming’s PDCA cycle. Crisis scenarios can be catalysts for innovation, prompting organisations to experiment with novel solutions. Yet the data reveal the incomplete integration of these new measures into a TQM framework; the ‘Check’ and ‘Act’ phases, in particular, were often underutilised. Frontline involvement a cornerstone of Kaizen was minimal, undermining the iterative learning that TQM prescribes. Thus, while TQM scholarship would

celebrate rapid adaptation, the airline's case shows that speed without systematic feedback can compromise long-term quality gains.

In relation to *sub-question 2, how did COVID-19 contingencies, both external (e.g., rapidly changing health regulations) and internal (e.g., financial pressures) impact operational aspects of Jordanian aviation sector?* (Operational/strategic impact of COVID-19) and *sub-question 4, what enhancements or adaptations to conventional TQM models are warranted, given the crisis experiences observed in Jordanian aviation sector?* (TQM Enhancement Model). These attempts at adaptation underscore both the potential and limitations of TQM under crisis. The airline was, in fact, capable of introducing major operational changes swiftly. However, the absence of robust participatory channels or consistent PDCA cycles limited the effectiveness and durability of those changes. As such, one of the pivotal lessons for TQM theory is that agility and inclusivity must work in tandem, particularly when organisations face extraordinary, rapidly shifting external conditions.

5.2.2 Connecting the Themes Back to the Literature

In referencing Donthu and Gustafsson (2020) and Reason (2016), this study supports the argument that clear and open communication pathways are essential for organisational safety and resilience. The empirical twist, however, is that leadership under crisis may intentionally or unintentionally truncate these pathways in favour of more rapid but less inclusive methods. This finding extends Donthu and Gustafsson's notion of organisational agility, highlighting how agility can devolve into autocracy if participatory mechanisms are not safeguarded by institutionalised protocols.

Aligned with Mayo's principles in (Mehta & Shah, 2005) and Reason (2003) advocacy for continuous training, the data reveal a stark contradiction in practice. While training is valorised in aviation, the pandemic context led to the neglect of psychosocial and crisis-response competencies. Thus, the study challenges the implicit completeness of existing aviation safety training frameworks. By accentuating this gap, it offers an empirical basis for broadening TQM-based training to encompass not only technical but also emotional and mental-health dimensions.

Building on Hofstede (2001) cultural dimensions and Schein (2002) emphasis on deep cultural underpinnings, the findings show that culturally embedded hierarchies can significantly dilute TQM's ethos of egalitarian teamwork. Instead of formal TQM structures enabling inclusive problem-solving, employees formed ad hoc, collectivist coping strategies. This addresses how TQM's universalist claims may clash with context-specific cultural realities, necessitating more culturally adaptive TQM frameworks.

The notion that aviation is universally standardised is ingrained in ICAO guidelines with emphasis on rule-based clarity. Yet the study's participants recounted frequent contradictions and ad hoc changes, indicating that standardisation frayed under the pandemic's pressures. This scenario suggests an urgent need for TQM-based crisis audits that incorporate feedback from diverse employee groups, ensuring that policy revisions remain intelligible, practicable, and consistent, even as conditions evolve rapidly.

The well-being of employees, a hallmark of Mayo's human-relations perspective and Deming (1993) 'people-first' principle, was repeatedly overlooked due to cost-saving mandates. This contradiction underscores that TQM's success is directly tied to organisational willingness to invest in human capital, particularly during crises. The study thus reinforces calls for a more ethically grounded TQM approach that treats employee welfare not as a peripheral matter but as a strategic imperative integral to quality outcomes.

Lewin (1947) classic three-step model, along with Flory (2022) analysis of systemic design flaws, finds partial validation in the airline's experiences. While the organisation attempted multiple policy shifts, the absence of a stable phase for employees to internalise changes proved deeply problematic. TQM's own cyclical PDCA structure was repeatedly interrupted by new mandates, suggesting that TQM-based organisations require a more agile, iterative version of these models, one capable of absorbing frequent policy updates without disorienting frontline staff.

Drawing from Scholtes (1998) on distributed leadership, and Burns (1961) on the perils of mechanistic structures, this study reveals that TQM's emphasis on empowerment is fragile under crisis. The enforced directives and threatened disciplinary actions reported by

participants confirm that empowerment and accountability can deteriorate swiftly. As a result, TQM must explicitly address how to maintain distributed decision-making in the face of acute external pressures, a gap that calls for more robust leadership development and cultural reinforcement mechanisms.

The intensification of operational demands aligns with Skinner (1974) strategic operations perspective, highlighting the vulnerability of aviation when resources dwindle. Simultaneously, Pasmore (1988) argues that socio-technical systems degrade when either the technical or social subsystem is overburdened. The study's findings validate this perspective, showing how unrelenting crisis mandates can produce burnout that jeopardises both safety and service quality.

Mazzetti and Schaufeli (2022), as well as Hackman (1980), have long underscored the correlation between supportive leadership and enhanced team performance. Although some supervisors exemplified these qualities, thereby sustaining pockets of TQM-minded resilience, the overall inconsistency highlights a shortfall in standardised leadership training. This points to a crucial knowledge gap in TQM literature: how to ensure uniform supervisory capability across large organisations when faced with unprecedented crisis scenarios.

Womack (1996) Kaizen-oriented frameworks and Deming (1993) PDCA cycle were partially mirrored in the airline's attempts at rapid adaptation. Yet the exclusion of frontline input indicates that the 'continuous improvement' ethos was only partially upheld. The study thus extends TQM theory by illustrating how organisations may initiate top-down adaptations in the name of agility but fail to integrate the essential 'Check' and 'Act' phases that sustain genuine improvement cycles.

5.2.3 Integrating the Findings into a Cohesive Narrative

While enumerating the themes helps clarify specific areas of dysfunction (or partial success), a truly comprehensive understanding emerges only when examining how these themes intersect. In particular, three broad areas of interconnection stand out:

- *Leadership and Communication:* Themes One (Communication Gaps) and Seven (Accountability and Empowerment Deficits) converge to illustrate the critical importance of leadership styles in shaping employee engagement and trust levels. In many instances, leaders who felt compelled by crisis pressures to adopt a more autocratic stance undermined TQM's emphasis on participatory problem-solving and continuous feedback loops.
- *Safety Culture and Training:* Themes Two (Training Deficiencies), Four (Inconsistent Risk Management), and Eight (Escalating Pressures) collectively reveal how aviation's hallmark rigorous safety culture was compromised by insufficient crisis training, conflicting protocols, and severe financial/staffing challenges. This triad underscores how TQM's promise of methodical improvement can unravel under extreme stress if training is neglected.
- *Employee Well-being and Cultural Dimensions:* Themes Three (Cultural Tensions) and Five (Employee Well-being) underscore the human dimension of TQM, demonstrating that no matter how strong operational protocols may be, TQM ideals cannot be fulfilled if employees feel marginalised, unprotected, and disconnected from organisational decision-making. Theme Nine (Supervision and Supportive Practices) further highlights the power of empathetic leadership to mitigate these stressors, albeit inconsistently.

By weaving these themes into a single interpretive framework, it becomes evident that TQM's successful implementation in a crisis demands robust communication channels, genuine employee empowerment, culturally sensitive leadership, and consistent training that addresses both technical and psychosocial needs. The final emergent theme Ten (Adaptive Operational Strategies), encapsulates this tension between aspiration and reality. While airlines did display instances of adaptive thinking, such as creating new flight manuals and pivoting to different operational routines, these adaptations frequently lacked the inclusive feedback cycles that TQM prescribes.

5.2.4 Thematic Synthesis: TQM Under Crisis in Jordanian Aviation

Taken together, the ten themes detail a comprehensive picture of TQM under strain. Prior to the pandemic, the airline claimed to operate under TQM principles, suggesting an organisational culture characterised by open communication, continuous improvement, and a strong safety ethos. However, once COVID-19 introduced financial threats, regulatory upheavals, and a heightened emphasis on immediate crisis management, TQM values became increasingly overshadowed by top-down control, ad hoc policy changes, and a marked neglect of employee well-being.

Communication failures and a regression into autocratic leadership styles form the connective tissue that links many of the themes. The absence of robust participatory mechanisms undermined trust and fostered confusion. Training deficiencies, particularly around crisis and mental health, not only violated TQM's call for ongoing workforce development but also magnified risk in an already hazardous operating environment. Meanwhile, cultural hierarchies and favouritism revealed that TQM's egalitarian ideals were never fully internalised, creating a parallel system of informal support networks that, while beneficial in the moment, do not solve deeper organisational rifts.

Aviation's revered safety protocols themselves suffered from inconsistent policy updates and contradictory mandates, pointing to a broad organisational difficulty in integrating TQM's PDCA cycle with the fast-paced realities of a global pandemic. The anxieties around job security, exacerbated by layoffs and salary cuts, highlight how quickly TQM's humanistic principles can be compromised when financial survival takes precedence. These conditions fed into widespread burnout, as staff were asked to do more with less under intensifying operational demands. Where frontline supervisors offered empathetic, hands-on guidance, TQM's promise of collaborative problem-solving momentarily resurfaced; where supervision fell short, frustration and demoralisation reigned.

Despite these systemic shortfalls, the airline did manage several improvisational successes, such as the creation of 'Corona Manuals' and the mounting of repatriation flights. However, even these adaptations often lacked the frontline consultation necessary for sustainable buy-in, reinforcing the overarching narrative: TQM ideals, while partially employed, were

insufficiently robust to withstand the onslaught of crisis pressures. The resulting tension underscores a larger message: TQM's formal adoption cannot guarantee resilience unless it is thoroughly embedded in organisational culture, leadership training, and crisis-oriented structures.

While each theme offers a unique perspective, some stand out for their foundational impact on the airline's overall performance. The first is the issue of communication gaps and top-down decision-making. Without genuine two-way dialogue, subsequent changes be they training programs, safety protocols, or job restructuring cannot be effectively deployed or refined. Second, training deficiencies loom large because aviation's historical success in safety heavily depends on thorough, standardised instruction. Leaving employees to 'figure it out on the fly' profoundly contradicts the sector's established norms and TQM's emphasis on continuous development.

Third, accountability and empowerment deficits represent a critical juncture for TQM's philosophy of distributed leadership. If staff feel coerced, both morale and innovation decline, harming the airline's ability to adapt effectively. Fourth, and perhaps the most emotionally charged theme, concerns employee well-being and job security. TQM rests on the belief that the workforce is an organisation's most valuable asset. When that asset is neglected or exploited during a crisis, the core of TQM unravels. Many of the other observed failures, including cultural tensions, inconsistent protocols, incomplete compliance connect back to these foundational breaches of trust and engagement.

5.2.5 Answering the 'So What?' Factor

The preceding sections have described how each emergent theme illuminates the strengths and weaknesses in applying TQM under the acute stress of a pandemic. To move beyond mere description, this section addresses why these findings hold broader significance. In short, the study both fills identifiable gaps in the existing TQM and crisis-management literature and challenges certain assumptions about how 'embedded' TQM truly is in high-stakes sectors like aviation.

One of the most consequential contributions of this study is demonstrating how TQM, often lionised in stable times can unravel under the intense pressures of an emergency. This challenges the implicit assumption in some TQM literature that once an organisation commits to participatory leadership and continuous improvement, it will remain so regardless of external shocks. In reality, COVID-19's abrupt onset created powerful incentives for rapid, top-down directives that bypassed TQM ideals. This empirical illustration should prompt TQM scholars and practitioners to integrate crisis scenarios into their models more explicitly, designing 'rapid TQM' protocols for extraordinary conditions.

Although TQM scholarship often acknowledges the importance of trust, empowerment, and cultural alignment, these 'soft' elements remain less systematically studied than the 'hard' process controls. The airline's experience uncovers how ignoring or undervaluing psychosocial training, mental-health support, and cultural inclusivity can decisively undermine TQM's broader objectives. Indeed, frontliners' reliance on informal peer networks to meet emotional and informational needs demonstrates a striking gap where official, TQM-sanctioned structures should have been.

Aviation is heralded for its unyielding safety culture, yet the pandemic's financial and regulatory shocks revealed latent vulnerabilities. Heightened operational and financial pressures exposed how standard safety procedures could devolve into inconsistent or contradictory practices. This tension highlights that safety, while integral to TQM, can be quietly subordinated when organisational survival appears at risk. For policymakers and industry stakeholders, this finding is a sober reminder that robust safety oversight must remain vigilant, especially during crises when the temptation to cut corners is at its peak.

Given that many TQM models assume universal applicability, the emergence of deep cultural cleavages and favouritism within the airline underscores the need for locally contextualised TQM adaptations. Employees in a Middle Eastern context, marked by distinct power distances and diverse workforce compositions, may engage with TQM principles differently than those in Western settings. When official channels fail, employees revert to collectivist strategies, e.g., informal WhatsApp groups, which can partially compensate but also risk fragmentation if these groups run counter to organisational goals or entrench cliques.

The deficiency in crisis and mental-health training stands as one of the study's most critical revelations. In an industry where methodical training is deeply enshrined, the pandemic laid bare organisational blind spots around employee emotional support. This underscores a call to expand aviation training paradigms, beyond technical or procedural modules to include psychosocial preparedness, stress management, and scenario-based crisis simulations. The data-driven evidence that staff felt both psychologically unprepared and organisationally unsupported demands a significant recalibration of future TQM-based training policies.

From a leadership perspective, the pandemic acted as a stress test revealing how quickly autocratic styles can resurface when organisations feel threatened. This should prompt reconsideration of TQM-based leadership theories, which often imply that once organisations adopt 'transformational' or 'servant' leadership patterns, they become enduring. Instead, this study aligns with contingency theories: leadership styles can shift dramatically under stress, undermining TQM's aspirational goals for sustained employee involvement.

The relation between formal organisational structures and the emergent, informal responses of frontline staff confirms socio-technical theories that emphasise adaptation at the grassroots level when top-down frameworks falter. It also challenges the notion, in some contingency writings, that decentralisation alone ensures resilience. The airline's experience shows that if communication remains primarily top-down, decentralised structures may not fulfil their purpose, leading to suboptimal or ad hoc coping strategies among employees.

From a policy standpoint, the empirical data underscore that issuing new protocols no matter how detailed does not necessarily translate into consistent compliance or trust. Policy clarity, staff buy-in, and accessible feedback channels are equally, if not more, important. This calls for a more participatory model of regulation in which frontline insights guide the design and revision of safety protocols. At a macro level, the findings advocate for agile, bottom-up frameworks that maintain fidelity to TQM's continuous improvement ethos, even in times of crisis.

Scholarship on TQM often rests on case studies from Europe, North America, or large multinational organisations in East Asia. By focusing on Jordanian aviation, an emerging market context with unique cultural, economic, and regulatory attributes this thesis broadens

the conversation to understudied geographies. It shows that while TQM can have universal principles, successful implementation demands cultural customisation and recognition of sociopolitical nuances. The observed reliance on informal peer support, the frequency of perceived favouritism, and the complexities of job security in a cross-cultural workforce all highlight potential lines of inquiry for future research in similar contexts.

Finally, these findings reinforce the need for integrated models that unite TQM's long-term, continuous-improvement ethos with the short-term agility demanded by crises. Traditional TQM frameworks often focus on gradual, iterative enhancements. Conversely, crisis-management literature tends to emphasise emergency response. The experiences of the Jordanian aviation sector suggest that organisations require both capacities simultaneously. It is not sufficient to simply overlay a crisis blueprint onto an existing TQM framework; deeper structural and cultural changes are necessary to ensure TQM principles hold firm under emergency conditions.

5.2.6 Practical and Theoretical Implications

Building on the empirical data and the thematic connections outlined above, the study generates several actionable insights for industry practitioners, policymakers, and leadership training programs. These measures are not intended as mere stopgaps but as strategic steps to fortify TQM infrastructures under crisis conditions.

First, the airline must establish two-way communication protocols that uphold TQM's participatory ideals while acknowledging the need for quick decisions. Even brief daily or weekly debriefing sessions can restore a sense of dialogue, enabling employees to share real-time concerns. Second, comprehensive crisis and mental-health training should become a standard part of TQM-based HR initiatives, ensuring that employees develop not only technical competencies but also emotional resilience. Third, addressing cultural tensions necessitates formal diversity and inclusion programs. These must be reinforced by transparent complaint channels and anti-favouritism policies. Fourth, standardising and clarifying crisis-driven safety protocols and incorporating frontline input in their design can reduce confusion and improve compliance. Finally, the airline should implement robust mental-health support systems and

transparent restructuring processes to mitigate the fear and insecurity that lead to talent attrition and diminished morale.

From a policy standpoint, regulators and governing bodies may consider mandating agile change-management frameworks that allow periodic audits of policy coherence, especially in crisis contexts. Ensuring that airlines pilot test or at least review new mandates with representative staff groups before widespread rollout can lessen the incidence of contradictory directives. Moreover, empowering mid-level supervisors with the authority to make context-specific decisions can align top-down directives with frontline realities, enhancing the overall sense of accountability and engagement.

On the theoretical front, these findings invite a rethinking of TQM, especially for safety-critical industries functioning under severe external pressure. The notion of a crisis-responsive TQM model resonates strongly here: such a model would integrate rapid decision-making protocols with structured feedback loops, guaranteeing that frontliners remain part of the decision-making process. In addition, the data reinforce the primacy of soft TQM elements, suggesting that empathy, cultural sensitivity, and psychosocial support must migrate from peripheral to central positions in TQM paradigms.

Leadership agility emerges as another key dimension. Far from being a stable trait, leadership style appears contingent upon perceived threats; autocratic tendencies can abruptly materialise if managers lack training or frameworks that support distributed decision-making under pressure. Future TQM-oriented scholarship might explore formal guidelines for ‘leadership backslide prevention,’ ensuring that crises do not dismantle progress toward inclusive leadership norms. Another area ripe for exploration is how TQM-based organisations can sustain safety culture when faced with existential financial concerns, testing whether certain TQM structures, like cross-functional crisis task forces can inoculate an organisation against the temptations of corner-cutting.

The implications for socio-technical and contingency theories are evident. The airline’s experiences show that TQM’s success in crisis scenarios demands close attention to emergent, bottom-up solutions, not just the formal strategic dictates. This suggests a deeper integration of TQM with socio-technical design, whereby both formal and informal coping mechanisms

are acknowledged, supported, and realigned to serve organisational goals, rather than existing in opposition.

Building on these insights, the Crisis-Responsive TQM (CRTQM) model synthesises TQM's continuous-improvement logic with contingency-sensitive adaptations and STST design principles to preserve quality and safety under fast-moving disruptions. Conceptually, TQM supplies the process discipline (PDCA/Kaizen, standard work, frontline problem-solving), contingency thinking specifies fit to shifting internal and external constraints (e.g., regulation/finance/health mandates), and STST keeps the technical–social balance in view so that rapid procedural changes do not degrade human performance, trust, or well-being (Deming, 1993; Donthu & Gustafsson, 2020; Oakland, 2014; Pasmore, 1988). In the present study, the ten themes reveal how, without explicit integration, crisis pressures produced top-down reflexes, truncated feedback loops, and weak psychosocial support precisely where CRTQM targets corrective mechanisms (Burns, 1961; Reason, 1990; Scholtes, 1998).

Operationally, CRTQM works through accelerated PDCA cycles embedded in routine work, but widened to include two-way communication and frontline empowerment even when decisions must be fast. 'Plan' and 'Do' are deliberately short-cadenced during acute phases; 'Check' and 'Act' are protected by brief but structured debriefs, micro-audits, and frontline-involved revision of SOPs. Contingency cues (e.g., abrupt regulatory change, staffing shock) trigger specific CRTQM playbooks so that the organisation varies how it applies TQM without abandoning its why. STST design elements role clarity, workload realism, usable tools/training, and psychosocial supports guard against eroding the social subsystem while ramping the technical one (Deming, 1993; Donthu & Gustafsson, 2020; Pasmore, 1988; Reason, 2016).

Culturally, CRTQM recognises that hierarchical norms and power distance can mute participation exactly when it is most needed. Accordingly, the model formalises brief participatory routines (e.g., shift-start huddles, post-flight debriefs) that are non-optional and time-boxed, lowering the barrier to voice even within high-power-distance settings. Leadership emphasis shifts from command compliance to psychological safety, with supervisors trained and evaluated on supportive behaviours that drive out fear (Deming, 1993; Hofstede, 2001; Schein, 2002; Scholtes, 1998). In short, CRTQM makes participatory mechanisms crisis-proof

by institutionalising them as part of the emergency cadence, thereby maintaining learning and trust while retaining decisiveness.

Table 22 consolidates this study findings into an actionable architecture. For example, Theme 1 (communication gaps) and Theme 7 (empowerment deficits) are addressed through mandated huddles/debriefs and supervisor coaching; Theme 2 (training deficiencies) and Theme 8 (operational pressures) are handled via short-burst micro-training and roster realism; Theme 4/6 (inconsistent protocols/compliance strain) are mitigated by crisis-cadence PDCA with frontline review; and Theme 3/5 (cultural tensions/well-being) are directly targeted through equity measures and psychosocial supports (Burns, 1961; Deming, 1993; Donthu & Gustafsson, 2020; Hofstede, 2001; Lewin, 1947; Oakland, 2014; Pasmore, 1988; Reason, 1990; Schein, 2002; Womack, 1996).

For scholars, CRTQM specifies mechanisms (accelerated PDCA with protected feedback, contingency-triggered playbooks, STST safeguards) and boundary conditions (regulatory flux, resource slack, cultural power distance) that explain when TQM perseveres or collapses under crisis (Burns, 1961; Deming, 1993; Lewin, 1947; Pasmore, 1988). For practitioners, it provides a deployment script:

1. Define crisis triggers,
2. Shorten PDCA cadence,
3. Mandate brief participatory routines,
4. Embed micro-training and psychosocial support,
5. Audit-revise SOPs with frontline input, and
6. Publish fairness safeguards to maintain trust.

These steps operationalise the study's 'so what' by translating themes into implementable levers while remaining consistent with TQM's ethos and aviation safety obligations (Donthu & Gustafsson, 2020; Oakland, 2014; Reason, 1990, 2016; Scholtes, 1998; Womack, 1996). Figure 15 distils CRTQM into a contingency to improvement pipeline. First, External and internal contingencies (e.g., abrupt regulation, cost shocks, staffing gaps) trigger predefined playbooks. These launch short-cadence PDCA cycles that keep standards visible and iterative even under time pressure, while protected feedback ensures that rapid decisions still

incorporate frontline insight (Deming, 1993; Donthu & Gustafsson, 2020; Oakland, 2014; Womack, 1996).

Second, STST safeguards are built in to prevent technical fixes from degrading the social system: workload realism/rosters, usable tools, micro-training, and psychosocial supports. In crisis, these guardrails preserve human performance and trust while PDCA accelerates (Pasmore, 1988; Reason, 1990, 2016). The deployment script at right makes the practitioner steps explicit. Define triggers; shorten PDCA; mandate brief huddles/debriefs; embed micro-training and mental-health support; audit/revise SOPs with frontline input; and publish fairness safeguards (Deming, 1993; Scholtes, 1998).

The model acknowledges boundary conditions highlighted in the study: regulatory flux, resource slack, and cultural power distance, which condition how far empowerment and participation can go (Burns, 1961; Hofstede, 2001; Lewin, 1947; Schein, 2002). When these are recognised explicitly and buffered through the mechanisms above, the expected outcomes are fewer contradictory directives, better compliance, higher perceived fairness, and enhanced resilience. Precisely, the model shows how contingency triggers activate an accelerated PDCA (TQM) with protected feedback and frontline empowerment, safeguarded by STST alignment; this drives revised SOPs/micro-training toward safety, quality, trust, and resilience outcomes.

Layer	Role in CRTQM	Key mechanisms (how/why)	Boundary conditions & moderators	Expected outcomes/indicators
Environmental & organisational contingencies	Sense and prioritise constraints (regulatory shifts, financial stress, staffing shocks)	Rapid scanning; trigger ‘crisis cadence’ PDCA; activate scenario playbooks	Volatility, resource slack, regulatory clarity, risk appetite	Faster coherent responses; fewer contradictory directives
TQM core routines (hard + soft)	Maintain improvement discipline under speed	Short-cadence PDCA; Kaizen with frontline voice; visible standard work updates	Leadership support; documentation capacity; data visibility	Fewer workarounds; improved compliance; reduced error reports
STST alignment (people–process–tech)	Protect human performance while modifying processes	Workload/roster realism; micro-training; usable tools/PPE; mental-health supports	Fatigue levels; training bandwidth; tool usability	Lower burnout; higher confidence; stable service/safety cues
Leadership & communication	Keep two-way channels open during autocratic drift	Time-boxed huddles/debriefs; safe-to-speak norms; supervisor coaching	Power distance; trust history; middle-management capacity	Increased voice; better uptake of SOP changes; morale
Learning & governance	Close the ‘Check/Act’ gap during crises	Micro-audits; incident/near-miss learning; frontline-involved SOP revision	Info systems; audit skills; non-punitive culture	Faster corrective action; fewer repeated issues
Culture & equity	Counter favouritism and stratification that block CRTQM	Transparent criteria; anti-favouritism policies; inclusive staffing/training access	Diversity mix; legacy practices; union/legal context	Perceived fairness; participation breadth; retention

Table 22 Crisis-Responsive TQM (CRTQM): Textual specification for use in crisis conditions.

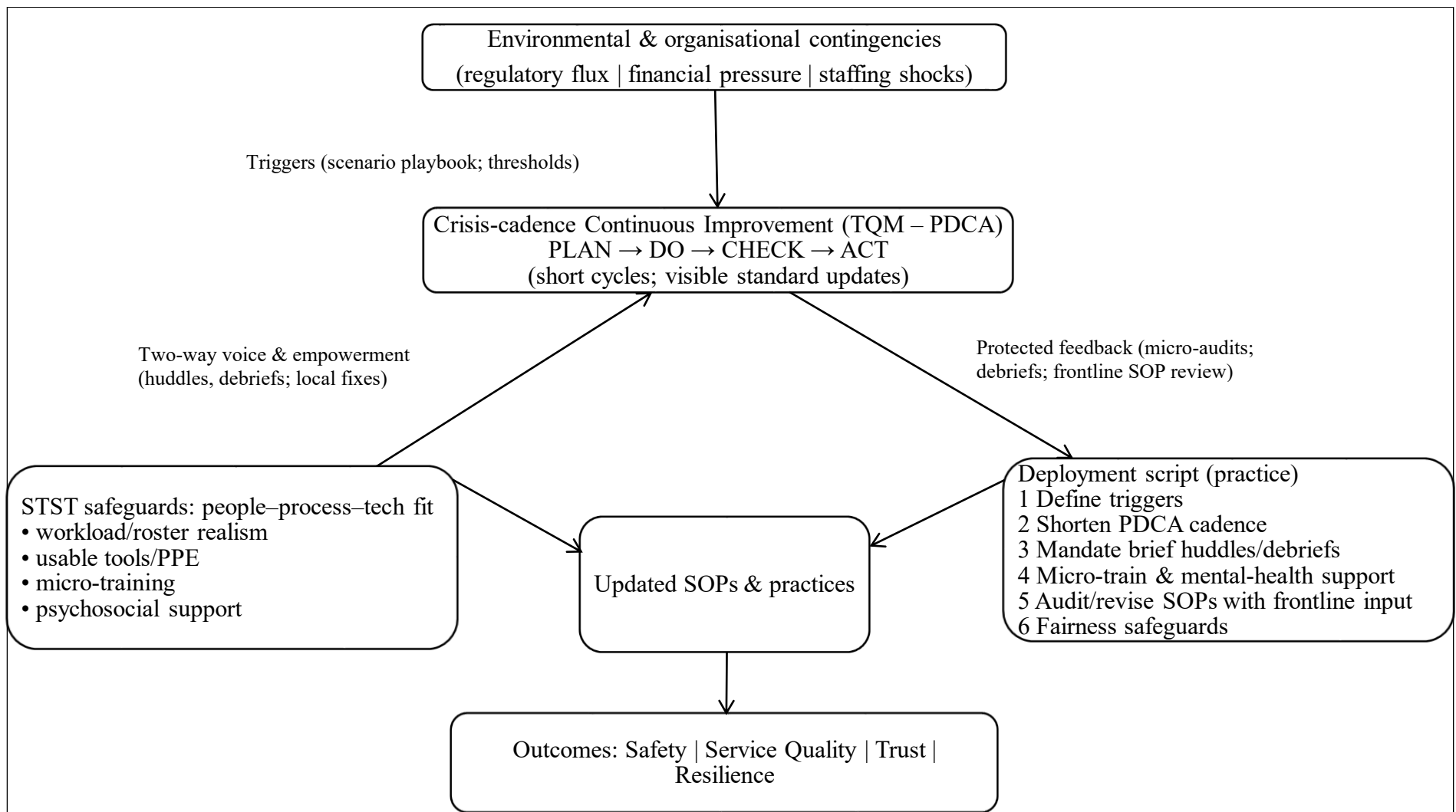


Figure 15 Crisis-Responsive TQM (CRTQM) model.

5.3 Conclusion: Toward a More Resilient and Equitable TQM

5.3.1 Reassessing the Research Questions

Reflecting on the five research questions, the discussion suggests the following conclusive insights:

- *TQM Principles for Crisis Management (RQ1)*: The study reaffirms that clear communication, people-centric leadership, and scenario-based training are non-negotiable pillars of TQM. Yet these principles must be adapted for crises through rapid feedback loops, culturally sensitive leadership frameworks, and robust mental-health support systems.
- *COVID-19's Impact on Jordanian Aviation (RQ2)*: The pandemic exposed fundamental vulnerabilities, from staffing shortages to inconsistent policy enforcement, showing that Jordanian aviation was unprepared for a disruption of this scale. The crisis forced an unplanned re-evaluation of standard procedures, but without sufficient TQM-based planning, many revisions were ad hoc and uncoordinated.
- *Leadership and Employee Engagement (RQ3)*: The data offer a clear verdict: hierarchical, coercive responses damage morale, trust, and the impetus for continuous improvement. Conversely, localised examples of empathetic supervision confirm that TQM-based engagement can buffer some crisis stresses. In the aggregate, the leadership challenge underscores how easily TQM ideals can regress under pressure.
- *Enhancement Model for TQM (RQ4)*: A refined TQM framework for crisis conditions emerges from the data, requiring agile adaptation, frontline empowerment, culturally tailored interventions, and explicit integration of psychosocial training. The traditional PDCA cycle must be accelerated and more inclusive, ensuring that updates occur quickly yet retain a measure of collaborative validation.
- *Policy Recommendations (RQ5)*: Specific policy recommendations include instituting two-way communication forums, formal mental-health support, transparent and culturally equitable HR practices, and standardised yet flexible crisis protocols. These recommendations target both organisational leadership and industry regulators, emphasising a multi-tier approach to future crisis preparedness.

5.3.2 Advancing TQM Theory and Practice

The broader contribution of this research is the demonstration that TQM's theoretical coherence is both validated and challenged by extreme real-world conditions. Validated, in that communication, training, empowerment, and cultural alignment indeed surface as central determinants of organisational resilience. Challenged, in the sense that TQM's typical formulations do not fully prepare practitioners for the speed and complexity of global crises like COVID-19. Therefore, a crisis-responsive TQM model emerges as a necessary evolution one that explicitly builds in rapid decision-making frameworks, robust mental-health support, and cultural-linguistic adaptation for diverse workforces.

Although this study focuses on Jordanian aviation, the implications extend to any high-stakes sector, healthcare, energy, transportation, where crisis disruptions can derail established procedures. The core message is that TQM cannot remain a static set of protocols and slogans; rather, it must be an adaptable philosophy with concrete mechanisms for urgent decision-making, employee well-being, and consistent communication. Industries that adopt TQM for 'business as usual' without crisis considerations risk discovering, too late, that their quality commitments cannot endure a systemic shock.

By examining the abrupt collision of TQM ideals with the realities of a global health crisis, this thesis contributes to a nuanced understanding of how deeply an organisation has (or has not) internalised TQM. The emergent ten themes, communication gaps, training deficiencies, cultural tensions, inconsistent protocols, well-being issues, compliance challenges, empowerment deficits, escalating pressures, supervisory discrepancies, and adaptive strategies, serve as a cautionary catalogue of the pitfalls that can arise when TQM remains more rhetorical than experiential. Yet they also highlight the possibilities: where TQM has been genuinely embedded, particularly at the supervisory level, there are glimpses of resilience, empathy, and improvisation that align well with TQM's vision of a learning, adaptive organisation.

Ultimately, this thesis invites airline leaders, policymakers, and TQM scholars to grapple with an essential question: If TQM is truly a guiding philosophy, how can it remain robust and

people-centric in the face of existential threats? The Jordanian airline's lived experience suggests that the answer lies in a strategic fusion of advanced crisis protocols, culturally aware leadership, and unwavering commitments to employee empowerment elements that, if nurtured consistently, may enable TQM to fulfil its promise of sustainable quality and resilience for decades to come.

5.3.3 Limitations and Future Directions

This study provides an in-depth qualitative examination of TQM implementation in a single airline, situated within Jordan's distinctive cultural and regulatory environment. Consequently, these findings may have limited direct generalisability to other contexts. Additionally, because the research relies largely on qualitative data, including interviews, observations, and document analyses, broader quantitative measurements such as turnover rates, safety incidents, and financial indicators were not integrated. Future investigations could bridge this gap by employing larger comparative samples, longitudinal designs, and diverse analytical approaches.

While qualitative methods provided rich contextual understanding, incorporating quantitative indicators, such as employee turnover, passenger satisfaction, and on-time performance, would deepen the empirical foundation of TQM research in crisis settings. Likewise, harnessing big data from crew scheduling software or passenger feedback platforms could illuminate correlations between leadership styles, employee well-being, and operational outcomes. This broader evidence base would strengthen the reliability of findings and guide more precise interventions.

Exploring TQM under crisis conditions in different airlines, whether domestic or international, would shed light on how varying cultural norms, economic pressures, and regulatory frameworks influence TQM's efficacy. Comparative studies could clarify which aspects of TQM are most adaptable across contexts and which require localised adjustments, ultimately informing global best practices for crisis readiness.

Most data in this thesis capture organisational strategies during a rapidly escalating crisis. A longitudinal follow-up could trace whether short-term improvisations and adaptive behaviours become embedded in standard operations or revert to pre-crisis practices once regulatory and financial pressures diminish. Such an approach would offer insights into TQM's durability and its potential to foster lasting organisational change.

Digital platforms, including WhatsApp, email, and Zoom, proved integral for timely decision-making and information dissemination. Future studies could investigate how these technologies mediate TQM principles by balancing top-down directives with bottom-up feedback. Such research might highlight how real-time digital communication, particularly under crisis constraints, both facilitates and challenges TQM's core tenets of collaboration and continuous improvement.

The psychosocial challenges observed during this crisis underscore the importance of mental-health support and cultural sensitivity within TQM frameworks. Scholars might explore how scenario-based crisis simulations, emotional-support services, and culturally adaptive training programs affect both staff resilience and operational stability. By systematically examining these 'soft' TQM dimensions, researchers can assess their impact on overall performance and employee well-being.

A greater focus on regulatory and policy environments would also enhance understanding of TQM's potential in crisis conditions. Aviation regulations, national labour laws, and international guidelines collectively shape airline responses, yet their alignment with TQM principles remains underexplored. Future policy-oriented research could examine how institutional and governmental stakeholders, working in tandem with airlines, might create proactive frameworks that strengthen industry-wide resilience.

Building on the insights generated here, future efforts should aim to create more robust, context-aware, and empirically tested TQM models that retain their core principles under the most demanding circumstances. This will likely require a cross-pollination of disciplines, ranging from organisational psychology to digital communication studies, alongside close collaboration with industry practitioners. Ultimately, a richer knowledge base on TQM's

performance under crisis will enhance both the theoretical toolkit available to researchers and the practical resilience strategies employed by airlines worldwide.

5.3.4 Personal Reflections (Reflexivity)

Conducting a doctoral study on TQM practices under crisis conditions in the Jordanian aviation sector inevitably involved both scholarly investigation and personal engagement with the subject matter. Over the course of my research, I found myself not only documenting the evolving strategies, policies, and leadership styles shaped by COVID-19, but also grappling with my own assumptions, beliefs, and emotional responses to the unfolding challenges reported by participants. While TQM frameworks often emphasise an organisation's 'hard' infrastructures, such as standardised procedures and safety protocols, my own experiences highlighted the substantial influence of 'soft' factors: empathy, trust, and cultural norms.

Prior to undertaking this doctoral work, I had professional practical experience adjacent to aviation, having worked with airline staff in various capacities. My familiarity with standard operating procedures, crew training protocols, and the broader safety culture in aviation initially gave me a sense of confidence in my theoretical grasp of TQM. Yet, as I immersed into the study, my preconceptions were repeatedly challenged by the real-world accounts of disempowered frontline staff, rapidly shifting managerial directives, and the strains of continuous operation during a global crisis.

From the outset, I was aware that my prior understanding of TQM, rooted in classical management theory, might skew my interpretation of the participants' experiences. On one hand, my familiarity with TQM's principles allowed me to recognise subtle deviations from best practices; on the other hand, it risked making me overly critical of airline leadership decisions if those decisions did not align neatly with TQM ideals. To mitigate this potential bias, I employed reflective journaling after each interview session. In those journal entries, I confronted my own emotional reactions, whether frustration at a perceived leadership shortfall or admiration for unexpected ingenuity at the frontline.

Listening to participants describe repeated policy changes, uncertain job security, and inadequate psychosocial support brought forth my own sense of empathy and, at times, helplessness. This empathic connection was both an asset and a challenge. It deepened my understanding of the human costs of organisational misalignment, but it also risked clouding my ability to remain dispassionate when interpreting the data. To address this, I regularly revisited my methodological notes and memos, systematically examining whether my emotional responses could have influenced the questions I posed or the way I interpreted specific interview transcripts.

In parallel, I noted how certain participant narratives evoked recollections of my own professional interactions in pressured organisational settings (albeit in different industries). Situations where employees felt unheard or undervalued resonated strongly with past experiences of mine, occasionally prompting me to analyse whether I was projecting my personal sense of frustration onto the participants' situations. recognising this possibility was essential for maintaining reflexive integrity; accordingly, I engaged in 'critical friendship' discussions (Bryman, 2016) with colleagues outside my immediate research domain to gain external perspectives on my interpretations.

Another dimension of reflexivity arose from the cultural context. As a researcher operating within Jordan, where hierarchical structures and collectivist cultural norms may shape organisational behaviour quite differently than in Western-based TQM models I had to remain sensitive to how local traditions, social hierarchies, and cultural expectations could mediate the application of TQM. My background, which blends exposure to both local and international management paradigms, gave me insight into these subtleties. However, it also meant I had to consciously avoid universalising Western TQM assumptions to the Jordanian context.

Consequently, I learned to adopt what Bourdieu (1996) calls a 'double listening' approach, staying attuned to local, context-specific interpretations of leadership and communication, while maintaining enough analytical distance to compare those interpretations against broader TQM theories. This balancing act was crucial. At moments, I found myself deeply sympathetic to top-down decision-making, given the health and financial pressures the airline faced, yet I also recognised that genuine employee empowerment, a TQM cornerstone, was consistently overshadowed.

Looking back on the research process, my personal involvement taught me that TQM is not merely a theoretical construct but a lived organisational reality shaped by people's fears, hopes, and day-to-day decisions. By systematically reflecting on my position as both an empathetic witness and an analytical observer, I believe I have arrived at a more balanced understanding of how TQM principles interacted with the unprecedented conditions of the COVID-19 crisis in Jordanian aviation. This reflexive stance has enriched my academic rigour, ensuring that the recommendations and theoretical contributions I provide emerge not just from data, but also from a conscientious, self-critical inquiry into my own role in generating and interpreting that data.

Chapter. 6 References

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Chapter. 7 Appendices

7.1 Appendix A: Cover Letter

Cover Letter

Dear Participant,

I hope this email finds you well. I am conducting research on the airline industry in Jordan for my Doctor of Philosophy degree. Specifically, I am looking to interview former colleagues and cabin crew members from airlines in Jordan to discuss their experiences during the COVID-19 pandemic.

The interviews will focus on management outcomes, employees' performance, strategies, leadership styles, and the impact of COVID-19 on the airline industry in Jordan. I assure you that all information provided will be used for research purposes only and will be kept confidential.

Each interview will take approximately 15 minutes to complete. I have attached a participant consent form and an information sheet. Please fill in your details on the consent form and return it to me to schedule an interview.

Your participation and support are greatly appreciated, and I am dedicated to contributing to a better future for the airline industry in Jordan. Thank you for your time and effort. Please feel free to contact me if you need further information.

Kind Regards,

Mohammad Adwan

PhD Candidate in Business and Management

The University of Sunderland

7.2 Appendix B: Interview Questionnaire

Semi-Structured Interview Questionnaire

These interview questions are designed to reflect the outcomes of research conducted to investigate the impact of COVID-19 on the aviation industry in Jordan. It has been divided into three sections to assess the organisation's strategy and leadership style and get an idea of the participant's feelings about the pandemic. The interview will be conducted with the managers and cabin crew of an aviation organisation in Jordan. The participant has been informed about the aim of the interview as the necessary approvals

General Information:	
Name/Code:	Position:
Date of Birth:	Gender:
Work duration/ Status:	Location:
Organisation:	Academic qualifications:
Previous Management Experience:	
Strategy and Risk Assessment:	
Pandemic Strategy: - Describe the strategy your organisation adopted before and during the pandemic. - How did the organisation adjust its practices to cope with the consequences of COVID-19? - How has this strategy impacted the well-being of the crew?	
Risk Management: - What risk assessment processes were in place before the pandemic, and how did they evolve during the crisis? - Did the organisation foresee the potential impact of the pandemic, and how did it prepare for it?	
Policy Changes:	

• What policies, procedures, and activities were modified due to the pandemic? • Were there any new policies introduced to manage safety, such as social distancing on flights or crew rest policies?
Workforce Adjustments: • Did the airline decide to reduce operations or expand into new markets? • How were the decisions about layoffs or workforce reduction made, and how did they impact the organisation?
Future Outlook: • What are your expectations for the recovery of the Jordanian airline industry post-pandemic? • How do you foresee the industry adapting to future challenges like COVID-19?
Leadership and Organisational Culture
Leadership Style: • How would you describe your leadership style during the pandemic? • How did the organisational culture influence your leadership approach during this time?
Impact on Employees: • In what ways do you think leadership style and organisational culture impacted the crew's experience and morale during the pandemic? • How important is communication between managers and cabin crew, and how effectively was it handled?
Challenges in Leadership: • What challenges did you face as a leader during the pandemic, and how did you overcome them? • What factors most impacted your ability to lead effectively during this time?
Crew Experience and Well-being
Work Environment:

• How did the pandemic affect your feelings about the work environment? • What changes in operations have most affected your daily responsibilities?
Training and Support: • Do you believe you received adequate training to manage the new challenges brought by the pandemic? • How did management support you in handling these challenges?
Mental and Physical Well-being: • How has the pandemic impacted your mental and physical well-being? • What could management have done better to support your well-being during this time?
Future Considerations: • Looking back, what could have been done differently to manage the situation better? • What are your thoughts on the future of your role and the aviation industry after the pandemic?
Reflecting on Organisational Responses
Management's Response: • How did management's approach to the pandemic evolve? • What improvements could be made to the management's crisis response?
Communication and Morale: • How effective was the communication from management during the pandemic? • In what ways did this communication impact your morale and job satisfaction?
Suggestions for Improvement: • What suggestions would you offer to improve leadership and management practices during crises? • How can the organisation better prepare for future global disruptions?

7.3 Appendix C: Ethics Approval Letter



**University of
Sunderland**

Downloaded: 03/04/2024
Approved: 20/01/2022

Mohammad Adwan
Sunderland Business School
Programme: PhD research programme.

Dear Mohammad

PROJECT TITLE: COVID-19 as a non-traditional crisis - Exploring the Impact of COVID-19 on changing the aviation industry in Jordan - a study to identify the role of leadership, and research the operations and the strategies for new risks
APPLICATION: Reference Number 011111

On behalf of the University ethics reviewers who reviewed your project, I am pleased to inform you that on 20/01/2022 the above-named project was **approved** on ethics grounds, on the basis that you will adhere to the following documentation that you submitted for ethics review:

- University research ethics application form 011111 (form submission date: 17/01/2022); (expected project end date: 30/09/2024).
- Participant information sheet 1018680 version 1 (17/01/2022).
- Participant consent form 1018681 version 1 (17/01/2022).

If during the course of the project you need to deviate significantly from the above-approved documentation please email ethics.review@sunderland.ac.uk

For more information please visit: <https://www.sunderland.ac.uk/research/governance/researchethics/>

Yours sincerely

Veronique Laniel
Ethics Administrator
University of Sunderland