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The importance of crisis management in the aviation industry: A case study on Kuwait

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Abstract: Despite being one of the fastest-growing industries, the aviation business is infamous for difficulties affecting its operations. During the past thirty years, the airline industry has faced multiple crises that crushed passenger demand. Nonetheless, the industry was always prepared and showed resilience by emerging stronger after every crisis. However, this fact appeared to change since the COVID-19 pandemic, whereby the industry encountered an unprecedented crisis. Countries closed their borders and airspaces, thus bringing airline operations to a complete halt. Therefore, airlines deployed all their knowledge in crisis management and emergency response to operate repatriation flights and ensure preparedness to resume operations whenever the situation changes. The aim of this paper is to identify the emergency response and crisis management procedures implemented by Kuwait Airways and Kuwait Civil Aviation Authority (DGCA) during the COVID-19 crisis and assess whether those measures can be used in any similar future crisis, which can be considered as qualitative research. Data was collected using expert interviews and document analysis. The study employed data triangulation by cross-referencing insights obtained from interviews with senior personnel at Kuwait Airways and the Kuwait DGCA with official documentation published by international authorities. These findings were further validated through additional interviews with experts from the aviation industry. The study found that Kuwait's aviation sector responded effectively to the COVID-19 crisis. This paper concluded that the procedures and guidelines followed by Kuwait's aviation sector can be replicated across different countries or country blocs taking into consideration challenges such as international collaboration and technological integration.

Keywords: *Airline industry, Airline operations, Crisis management, Crisis, Emergency response.*

1. Introduction

The aviation industry is one of the fastest-growing industries in the world. Since the first flight took off in 1914 until today, airlines connected cities together, reunited families, and transferred essential cargo suppliers. Aviation is considered one of the safest modes of transport. Based on the IATA annual safety report 2024, the accident rate per one million flights reached 1.13 in 2024 up from 1.09 registered in 2023, but still below five-year average of 1.25 [1]. However, every few years the industry gets rattled by unwanted events. Between 1990 and 1991 during the first Gulf War, passenger traffic measured in Revenue Passenger Kilometers (RPKs), dropped by 4.0% in 1991 compared to 1990, and airlines suffered significant financial losses [2]. In the following years, two overlapping crises shocked the industry between 2001 and 2003, namely the 9/11 terrorist attacks and the SARS outbreak. As a result, the industry took two years to recover to pre-crisis levels in terms of passenger traffic [2]. Even though the industry recovered after 9/11, the way we used to travel changed as airlines implemented excessive security measures to cope with the elevated security threats [3]. Moreover, the industry took another hit in 2008 during the Global Financial Crisis. As the global economy entered a recession, passenger

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traffic dropped by 1.0% in 2009 compared to 2008 [2]. Despite all the challenges, the industry emerged from every crisis, stronger and more capable of dealing with uncertainties. Between 2010 and 2019 the aviation industry grew yearly on average by 6.7% in terms of passenger traffic, which is twice the yearly GDP growth [2]. In 2019, aviation supported 86.5 million jobs and contributed a significant 4.1 trillion dollars (USD) to the global economy, which is equivalent to 3.9% of the world's GDP [4].

However, everything changed in 2020. The industry witnessed an unprecedented crisis that left the world fleet grounded as countries closed their borders [3]. As discussed earlier, the industry had managed to overcome every crisis, being one of the sectors most prepared for uncertainties, yet the COVID-19 crisis was different. Consequently, airlines, regulating bodies, and international and regional associations collaborated to develop crisis management plans and emergency response procedures, to operate repatriation flights and ensure business continuity after the crisis is over. The measures covered several operational aspects, including safety, security, flight operations, and maintenance. The aim of this of paper is to identify the crisis management plan implemented by Kuwait Airways and Kuwait DGCA, to develop a unified crisis management plan consisting of an emergency response framework and guidelines to be applied at every stage of any crisis similar to COVID-19.

2. Literature Review

This literature pertaining to this paper addresses three main themes. The first two relate to crisis management and emergency response in the aviation industry. They provide the reader with an overview of the procedures followed by airlines in structured situations and exercises. They further provide an overview of global and regional regulations related to the area of operations under scrutiny. The third theme will provide an overview of emergency procedures and guidelines developed by regulating bodies and international and regional associations during COVID-19 and will shed the light on airlines' best practices during COVID-19.

2.1. Crisis Management in the Airline Industry

Existing definitions of a crisis mostly have similar characteristics. Crandall and Menefee [5] stated that the definition of a crisis should not be limited to natural disasters but also include human-induced events. According to Hale and RE [6] crises are chains of events that can jeopardize human lives, property, the environment, or a combination of all three. Another component of a crisis is the element of surprise, as referred to by Massey [7]. In order to be classified as a crisis, either the event itself was unexpected to occur, or had a low probability of occurrence, or it was expected to happen in the future, but not at the time of occurrence [6, 8]. From an aviation perspective, the ICAO [9] defines a crisis as "any global, regional or local, natural or human-caused event or business interruption that runs the risk of a) Escalating in intensity; b) Adversely impacting ICAO's financial position; c) Endangering the safety and security of staff or damaging ICAO property; d) Resulting in close media or donor attention; e) Interfering with normal operations and wasting significant management time and/or financial resources; f) Adversely affecting staff morale; and g) Jeopardizing ICAO's reputation, brand, or executive management, and therefore negatively impacting its future" (p.2).

Based on the above information, a crisis can have consequences on stakeholders who are directly or indirectly related to the business and bring into view the organization's legal and ethical responsibilities and how well they are seen to be fulfilled [8]. Therefore, crisis management is essential, especially in the aviation industry, where crises encountering this sector grab attention from the media leading to negative consequences on the industry. For instance, during the 9/11 crisis, travel demand measured in RPKs dropped by 2.9% in 2001 compared to 2000. After 9/11, people were afraid to travel and the reputation of the whole industry was under scrutiny for not being able to protect its passengers [10]. ICAO [11] defines crisis management as "Taking appropriate actions to mitigate or reduce the source, size and impact of a crisis" (p.2). As such, well-prepared airlines are in a better position to protect their brand and operations during a crisis Mitroff, et al. [12]. Bundy, et al. [13] cited that a successful crisis management framework in the airline industry should focus on three areas, pre-crisis preparation and

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preparedness, the response phase, and service resilience and business continuity after the crisis. Several studies conducted before and after the pandemic [14-18] pointed out that an airline crisis management system should include five main aspects (covering both internal and external factors related to the industry):

1. A scheme of command that provides the relevant authority to senior management and emergency response teams to implement and run operating procedures, training programs, and to adequately mobilize resources.
2. Conducting crisis and preparedness drills with external parties such as airport firefighting squads, medical services, and external rescue teams.
3. Cooperation and coordination of emergency management, which includes timely communication with stakeholders, including government entities, partners, media, and a special coordination program with families of the victims and injured passengers.
4. Information should be transparent, accurate, and timely.
5. A strategy to improve the learning curve from previous experience, which builds resilience.

Similarly, other authors Bundy, et al. [13] and Pearson and Clair [19] cited that crisis management involves internal dynamics related to inhouse procedures, resources, and actions and external aspects related to managing stakeholders' response to the crisis. Others [20] argue that an essential element of crisis management focuses on how to deal with business stakeholders during a crisis, including their reaction to the crisis, the availability of resources and the means by which they can provide support, the extent to which the crisis will impact those stakeholders, and how stakeholders might exert a negative impact on the organization's ability to manage the crisis.

On the other hand, Cao, et al. [21] highlighted the challenges faced by airlines in crisis management, such as command incompetence, information credibility, and coordination and logistical difficulties. In addition, the International Air Transport Association (hereinafter mentioned as IATA) developed a guidance document on crisis communication and reputation management, which also highlights the challenges faced by the airlines in crisis management [22]. The document refers to the evolving network of social media, which spread falsified news and might cause damage to the reputation of the firm. Another challenge is the complex organizational structure of airlines. Most promotional material, such as new routes, fares, and promotions are posted on different channels which are owned by different departments. The lack of alignment between channel owners could lead to inconsistent or potentially insensitive communication by the airline during a crisis [22]. Furthermore, the reliance on third parties, such as Ground Handling Operators (GHAs), raises the potential of confusion between airline staff and third parties during a crisis. A great example was provided in the IATA [22] stating that if GHA staff are surrounded by "meters and greeters" demanding information and trying to record the incident on their mobiles, the airline may then discover a front-line "spokesperson" being quoted by the news media, even though he or she is not an employee and has no mandate to speak on the airline's behalf (p.7).

Rising expectations of families is also a rising challenge that airlines have to deal with in crisis management. Regardless of the legislation available, the expectations of accident survivors and families of victims increased over time, especially when class-action is taken [22]. Finally, another important aspect that is challenging concerning airlines in crisis management is the involvement of government agencies in the investigation or media response during a crisis. According to IATA [22] handbook, when government agencies handle investigations or media response in case of a crisis, this will limit the ability of the airline to interfere in the investigation and will be only allowed to take information from government entities. This will prevent the airline from unfolding their narrative about their accident and might put the integrity of the investigation under scrutiny.

During COVID-19 the concept of crisis management in the airline industry witnessed a significant change, unlike the conventional cases which were mostly unidimensional in scope. Take for instance the case crisis of the Icelandic volcano Eyjafjallajökull in April and May 2010. According to Alexander [23] the risk was concentrated in flying over Europe only. The latter conducted a study to assess the crisis

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management decision taken by aviation stakeholders to manage this crisis and resume normal operations. The study concluded that more coordination should be done across Europe, in which air travel should be replaced by other modes of transport if a similar crisis occurs. However, COVID-19 was nothing like a regional crisis; it was a trans-border crisis that required both national and international collaboration between all aviation stakeholders. A recent study conducted by Lee and Yoon [24] resulted in the amendment of all their decision-making models to include other stakeholders to deal with the crisis. The study shows that airlines pleaded for governments' interference and assistance to avoid total shutdowns. Further aspects concerning emergency procedures and guidelines applied by airlines during COVID-19 will be discussed in section 2.3.

2.2. Emergency Response Planning (ERP) in Aviation

Emergency response procedures differ between industries, depending on the nature of operations, parties involved, and training needed to handle a crisis. For example, in the tourism industry, a Tourism Emergency Response Network (TERN) group was formed to tackle the rise of the H5N1 avian [25]. The TERN is responsible for emergency response, crisis management, and training programs for the United Nations World Tourism Organization (UNWTO). For the airline industry, having an emergency response manual is mandatory for airlines to obtain an Air Operators' Certificate (AOC) in most countries around the world. ICAO Annex 19 related to aviation safety clearly states that "[t]he service provider required to establish and maintain an emergency response plan for accidents and incidents in aircraft operations and other aviation emergencies shall ensure that the emergency response plan is properly coordinated with the emergency response plans of those organizations it must interface with during the provision of its products and services" [9]. on the same front, IATA developed two publications to guide airlines on developing an Emergency Response Plan Template to be used during public health emergencies [26] and Emergency Response Handbook, which contains best practices in emergency response planning for airlines. Emergency Response Plan Template provides airlines with guidelines on how to prepare for a public health emergency, through a checklist of actions that can be used to ensure business continuity and respond to the crisis in a professional manner. According to the template the following actions need to be taken:

1. Consulting with National Public Health Authorities
2. Establishment of an Emergency Response Team
3. Establishment of an Emergency Response Centre
4. Dissemination of public health information for concerned stakeholders (such information needs to come from a credible international source such as the World Health Organization).
5. Activation of the Emergency Response Team and Centre
6. Providing clear definitions of Roles and Responsibilities
7. Developing an Emergency Response Checklist that includes actions related to medical representatives, communication (both external and internal), flight operations, cargo, maintenance, security and facilitation, in-flight services, operations control, legal matters, risk management, human resources, finance and procurement, and external affairs.

It is obvious that the emergence of a pandemic similar to that of COVID-19 was anticipated and IATA had in place a template on how airlines can respond to a public health crisis in principle. The checklist developed by IATA (click here to download) covers to a certain extent emergency response procedures that can be activated during a "normal" public health crisis. However, the checklist did not mention anything about a total shutdown of the aviation industry, where 80% of the world fleet was grounded due to border restrictions. Therefore, this checklist can be used as a starting point to develop a framework to deal with crises like that of COVID-19 from an emergency response perspective.

In parallel, the Emergency response handbook (2015) provides airlines the tools necessary to create a department for Emergency Response Planning (hereinafter mentioned as ERP) [27]. The handbook (p. 2) additionally allows airlines to:

1. Create a robust emergency response plan, aligned with industry best practices.

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2. Benefit from lessons learned, improvements and best practices gained from live activations.
3. Learn how to handle communication during a crisis.
4. Understand how to navigate the intricacies of social media during an incident under the full glare of public scrutiny.
5. Learn everything you need to know about Mutual Assistance Agreements.
6. Gain accurate and reliable resources to optimize your activation protocols.
7. Continually improve your ERP, as new material becomes available.

Due to research constraints and access limitations to the handbook, an in-depth scrutiny of its contents will not be conducted at present. However, reliance will be mainly on the feedback of interview participants with regards to information related to this handbook and the assessment of its effectiveness when it comes to dealing with a crisis such as COVID-19.

Similarly, airports need to have an emergency plan that is in line with the aircraft operations and other activities conducted at the airport [28]. The Airports Council International (hereinafter, referred to as ACI), developed a handbook on emergency preparedness and contingency planning handbook for airports. The handbook tackles topics related to business continuity during crises, emergency planning, emergency response, cooperation & coordination, training, exercises & testing, and documentation [29]. The document also includes checklists designed to be used by airports during crises including communication kits, risk sources and common hazards, and passenger information forms.

2.3. Emergency Procedures and Guidelines Applied by Airlines During COVID-19

In response to the widespread of the COVID-19 airlines applied several measures to mitigate the spread of the virus. Based on the several sources reviewed [30-37], those measures can be categorized as follows:

2.3.1. Pre-travel Guidance to Passengers

Pre-travel guidance to passengers includes raising awareness about testing protocols where applicable and advising passengers not to travel if they feel unwell, have a cough, or fever. In addition, pre-travel procedures inform passengers to complete their paperwork for travel electronically to achieve a touchless journey. Finally, airlines advise passengers to have enough masks and hand sanitizer for their entire journey as face masks need to be replaced every four hours.

2.3.2. Procedures at Airports

Procedures announced to be followed by passengers at airports include always wearing face masks, practicing social distancing wherever possible, and ensuring personal hygiene, including washing hands and changing masks frequently. Passengers were also advised to avoid touching their eyes, nose, or mouth, especially after contact with commonly touched surfaces. Airlines and airport operators developed cleaning and disinfection plans, especially for frequently touched areas. As for staff protection, airlines and airport operators are providing their staff with personal protective equipment (PPE), conducting health screening programs, providing staff with hand sanitizers, and applying physical distancing plans for workstations. For staff and teams working shifts, handovers should be conducted in a contact-free manner, i.e., via telephone, videoconference, electronic logs, or at least through physical distancing. Maintenance and repair work in public areas should be prioritized and their schedule adjusted or postponed if it is non-essential. As for training, the use of online training and virtual classrooms replaced physical training. Also, airlines and airport operators are using physical separators between selected staff and passengers, especially in areas of repeated exchanges and transactions. Finally, as instructed by governmental agencies airlines were obliged to collect passenger health information either through a physical or electronic health declaration form.

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2.3.3. Procedures Taken on Board an Aircraft

Procedures followed by airlines to limit the spread of the virus on-board the aircraft started from the first step passengers take into the bridge of boarding. Airlines adjusted their boarding processes to strictly apply boarding by aircraft section and boarding started from back to front. Passengers and crew were required to always wear face masks even when the aircraft is still on the Tarmac. Airlines also adopted crew protective measures such as instructing the crew to wear not only masks but other personal protective equipment such as face shields and gloves.

As for cleaning and disinfection procedures on-board the aircraft, many airlines implemented strict measures that involved full deep cleaning of aircraft after every flight while others implemented a less strict procedure involving cleaning and disinfection of aircraft once every 12 hours. In addition, airlines used HEPA filters to purify the air flow inside the cabin. According to Boeing [38] HEPA filters used on-board the aircraft are similar to those used in hospitals and can capture 99.9% of viruses and bacteria.

2.4. Guidance for Crew

Guidance for crew includes continuous health monitoring for fever, chills, cough, shortness of breath or difficulty in breathing, loss of taste, or other symptoms of COVID-19 in accordance with WHO guidance. Crew members were instructed to take their temperature at least twice per day during duty periods, and at any time they felt unwell, and stay at home or in their hotel room, notify the airline occupational health program, and not report for work if they develop a fever, shortness of breath, or other symptoms of COVID-19. They should not return to work until cleared to do so by the employers' occupational health program and public health officials.

During flight, if a crew member develops symptoms, he/she needs to stop working as soon as possible, notify the aircraft captain, wear protective equipment, and maintain physical distance from others. The pilot is mandated to contact the destination point public health authorities to make the necessary arrangements. Cabin crew are also mandated to wash their hands regularly. If hands are not visibly dirty, the preferred method is using an alcohol-based hand rub for 20–30 seconds using the appropriate technique. When hands are visibly dirty, they should be washed with soap and water for 40–60 seconds using the appropriate technique.

As for layover/transits, crew members are required to comply with national regulations related to public health to avoid any complications. In addition, airlines relied only on company cars for transportation, to ensure sanitization is done as per company guidelines. Every crew member was assigned a separate accommodation to minimize contact.

2.5. Guidance For Security and Facilitation

Airline security officers were instructed to perform to the most extent possible security checks using handheld devices and refrain from physical checks. In case a physical check is needed, security staff need to wear full protective equipment and sanitize their hands afterwards. Airlines also retrained their security staff to deal with passengers showing signs of illness.

In addition, many airlines used automated boarding pass scanners to avoid contact between facilitation staff and passengers and maintain appropriate physical distancing. Several airlines also allowed the use of mobile boarding pass scanners operated by the security staff.

2.6. Guidance for Maintenance Practices

Airlines increased their maintenance by around 30% to both the air and water systems to ensure they continue to protect the passenger and crew from viruses. In addition, to protect maintenance staff, continuous disinfection was conducted to shops, equipment, access panels, door handles, switches, and tools used during maintenance. Finally, to minimize contact, some maintenance procedures were done using camera-installed devices, where engineers can limit contact.

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3. Methodology

The choice of topic emanates from the major impact that the aviation industry has on the lives of people worldwide, and the limited amount of research conducted on the industry, whilst providing a holistic view. During the crisis and until the date when this paper was written, every organization, government, and regulating body issued their own crisis management plans and emergency response procedures to be followed by airlines during COVID-19. Most of these measures were tailor-made and not risk-based, nor were they based on reliable scientific data. For instance, despite allowing residents of most countries access to Kuwait, citizens of some nationalities are not allowed to enter Kuwait or can enter subject to institutional quarantine, as can be deduced from Kuwait Airways [37] Those measures are no different from those of many other countries around the world. As a result of those stringent measures, millions of jobs were lost, and the industry suffered severe financial losses. According to the most recent air transport data published by IATA [39] the airline industry revenues dropped by 54.1% in 2020 compared to 2019 to reach USD 384 billion, down from USD 838 billion recorded in 2019. In addition, airline revenues did not exceed pre-crisis levels until 2023 [39]. In addition, the WTTC [40] reported that 62 million jobs were lost that are directly and indirectly related to the aviation industry. Despite being harmful for the aviation industry, such measures still exist. The question is what next? And what needs to be done to protect public health yet at the same time regain consumers' confidence in travel, especially with the latter being an important layer of the Kuwaiti economy. According to the WTTC [40] contribution of the Travel and Tourism sector in Kuwaiti GDP reached 6.1% of total GDP in 2019. Therefore, supporting this sector is essential for the Kuwaiti economy.

Therefore, the following research questions needed to be answered:

1. To what extent were the government and airlines of Kuwait successful in their crisis response?
2. What it is the way forward to the restart and recovery of the aviation sector in Kuwait?
3. How can the government and airlines of Kuwait be prepared for a similar crisis in the future? And what can be the role of third-party providers?

The researchers conducted interviews with senior personnel at Kuwait Airways and Kuwait Civil Aviation Authority (DGCA), at different divisions (safety, security, engineering, and flight operations) to identify the measures applied by Kuwait Airways and the DGCA to gain their insights on the matter. Furthermore, data about similar guidelines were collected from the International Civil Aviation Organization (ICAO), European Aviation Safety Agency (EASA), International Air Transport Association (IATA), and several regional and global governments. All such data was examined and cross-checked with aviation experts from Kuwait Airways, Kuwait DGCA, and other associations to identify the effectiveness of crisis management procedures taken in Kuwait to resume travel activity.

4. Discussion and Analysis

In order to answer the research questions, five interviews were conducted with high level aviation experts working in Kuwait Directorate General of Civil Aviation (hereinafter mentioned as DGCA), Kuwait Airways, and international organizations/companies. The interviewees are:

1. Eng. Fahed Alanzi – Civil Aviation Security Director, Kuwait DGCA.
2. Dr. Falah Salman – Deputy Engineering Director Kuwait Airways.
3. Mr. Hany Bakr – Senior Vice President Aviation Security & Maritime at MedAire International.
4. Dr. Mazen Bekdash, Vice President, Business Development – Kenyon International Emergency Services, Inc.
5. Mr. Gary Leung, Manager - Security and Facilitation, Airports Council International.

This paper adopted the content analysis method to analyze qualitative data collected. According to McNabb [41] content analysis is a quantitative data analysis method used to interpret and analyze all types of written documentation, videos, and speeches. To answer the research questions, which are mainly related to the response of the aviation sector in Kuwait to the COVID-19 crisis and the way forward, interviews were conducted with representatives from Kuwait DGCA and Kuwait Airways. Also, interviews were conducted with professionals from the aviation industry to provide their general

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overview, which will allow this research to benchmark the industry's response to the crisis compared to the situation in Kuwait.

Such responses have been divided into four subheadings: Aviation industry responses to the crisis, the effect that collaboration among states had, the necessity of using adequate technology, and preventative measures to be taken in preparation for future crises.

4.1. Aviation Industry Responses to the Crisis

Based on the responses collected from Kuwait DGCA and Kuwait Airways interviewees, the aviation sector in Kuwait was successful in responding to the crisis in a timely manner and managed to take logical and successful measures. However, Mr. Alanzi mentioned that the nature of the pandemic was new to everyone, i.e., learning was work in progress, which improved over time. This was also highlighted by Mr. Bakr from MedAire, stating that *"for the first time on earth in aviation history, health, security, and facilitation learned to work together, the Ministry of Health, Civil Aviation Authorities, airport facilitation, management and safety personnel had to rehearse live on the scene. Aviation was impacted, airlines significantly reduced operations and both WHO and ICAO had to respond to restart aviation"*. Furthermore, Mr. Bakr asserted that no textbook stated how to deal with a crisis of such a magnitude that the world had faced. Most airlines have crisis management, emergency response, and business continuity programs which had to activate but the majority fell short to deal with a crisis of this magnitude. On the same front, Dr. Bekdash and Mr. Leung, agree that the response of the airline industry was highly affected by states' decisions on how, when, and where to operate.

According to Mr. Alanzi, Kuwait had to deal with a very complex situation, including government orders to repatriate nationals of Kuwait from abroad and evacuate expatriates who wish to leave the country. Thus, it was considered a huge challenge to transport all those passengers within a very short period at no cost. Procedures included booking tickets, establishing isolation zones, and arranging transportation, which was a detailed and lengthy process, but one which was well-managed. Similarly, Mr. Bakr stated that very few airlines and states were successful in dealing with the pandemic. Some airlines took independent measures that are commensurate to the threat in their country of origin, which includes wearing face masks, keeping the middle seat empty onboard, and using HEPA filters, which can ensure that the air inside the cabin is 99.99% germ-free. In addition, other operational measures were taken such as installing barriers between ground staff, enhancing sanitization, and mandating the crew to wear Personal Protective Equipment (PPEs). Mr. Bakr also mentioned that many airlines failed to operate completely during the crisis because of a government mandate.

Based on the aggregate responses, it is evident that airlines who managed to communicate, coordinate, and cooperate with their respective government entities, were successful in their response to the crisis while others who were obliged to follow strict measures were either unable to commence operations, or their operations were limited to repatriation and cargo flights only. This was mainly the case in Kuwait. Based on data reported from the Arab Air Carriers' Organization [42] Kuwait Airways did not commence any scheduled operations before October 2020.

4.2. Collaboration among States

Since the pandemic is global, measures taken to mitigate its impact should be collaborative. Therefore, interviewees were asked about their opinion concerning the level of collaboration between states, especially in the Arab region. Interviewees from Kuwait Airways and Kuwait DGCA agree that the key to overcoming the pandemic is coordination and collaboration between states. However, Mr. Alanzi mentioned that some states were reluctant to share data about their epidemiological situation and risk assessment strategies. According to the latter, the International Civil Aviation Organization regional office in the Middle East region (hereinafter mentioned as ICAO MID) played a crucial role in bringing decision-makers in the region together to find a common ground for information sharing. Furthermore, Dr. Bekdash argued that there was a lack of coordination between all concerned stakeholders on the regional and global level. He stated that *"coordination is key in crisis response; it is*

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mainly sharing information and data that allows us to respond better to crises. I think coordination was not very good, not only in this region, but generally across the globe albeit at different levels. Travel and tourism have been always the first to be impacted by global crises, but for sure better coordination could have helped with maintaining some acceptable travel activity especially after the borders where reopened". On the same front, Mr. Leung stated that harmonization and information sharing between states is a key component for the recovery of the air transport industry.

That being said, bringing states and aviation stakeholders together to agree on a harmonized approach is challenging. According to Mr. Bakr, practically speaking, bringing all 193 countries together to agree on a harmonized approach to deal with the pandemic is difficult. According to the latter, every country has its legal framework and risk assessment process. Furthermore, what is allowed in one country is forbidden in the other. Therefore, having 193 governments working in harmony and agreeing on each other's methodologies is an extreme challenge, and it can take a very long time to materialize. Mr. Bakr further argued that challenges that also need to be taken into consideration include language barriers, good communication protocols and the effective and efficient use thereof, reliance on adequate technology much of which is being developed to meet the challenges posed by the crisis, the availability of such technologies to states and industries, its servicing, and its compliance with data regulation. Although states might not be able to maintain and service such a platform for collaboration and information sharing, yet they can benefit from existing frameworks under the ICAO umbrella being a global vehicle for aviation. ICAO or any other global organization that already have such capabilities in place can work on collecting and disseminating data between states. The existence of such a platform for information sharing, provided the right technology is used, can facilitate travel and tourism recovery between states and reopen borders with minimal travel requirements.

4.3. The Adequate Use of Technology

As previously discussed, technology is an important factor in supporting governments' preparedness, response, and recovery. To this effect, interviewees were asked about their opinion on whether technology will be part of crisis preparedness, especially since it is not expected to be the last crisis that would probably halt travel around the world. All interviewees agreed that technology would be an essential component in enhancing preparedness, response, and recovery of governments if another crisis emerges. According to Mr. Alanzi, "technology *will not only enhance preparedness but also response and recovery will be directly enhanced when advanced technologies are acquired. Looking at the current pandemic, just imagine if we didn't have online booking systems, paperless tickets, self-check-in tools, electronic boarding passes, x-ray machines and walk-through metal detectors. The spread of the virus would have been worse and travel experience would be frightening".* This was also the opinion of Mr. Bakr, Dr. Bekdash, Dr. Salman, and Mr. Leung. In addition, Mr. Bakr stated that such technologies should be agreed upon amongst neighboring state blocks such as the EU and the Gulf Cooperation Council (hereinafter mentioned as GCC). He also claimed that COVID-19 has laid the foundation of adapting such technologies to deal with any other similar types of pandemics, and the main trick is to keep that current going and ensure that people continue with such practices even after the pandemic is over.

4.4. Preventative Measures for Future Crises

Finally, interviewees were asked about the role of their entities in enhancing preparedness of the aviation sector, to be able to deal with a similar crisis in the future. Starting from Kuwait DGCA, Mr. Alanzi stated that the role of the regulator is to ensure regulations are drafted and implemented in a way that ensures the safety and security of travelers and aviation stakeholders. He stressed that authorities need to be flexible during a crisis and engage with all stakeholders closely to confront an unusual situation. On the same front, Dr. Salman from Kuwait airways focused in his response on collaboration between the national airline and the regulator to ensure that regulations drafted are reasonable and applicable when dealing with exceptional situations. Similarly, Dr. Bekdash, Mr. Leung, and Mr. Bakr clearly stated that collaboration between aviation stakeholders, the international

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community, organizations, airports, and facilitation committees is needed in order to be ready for the next crisis. Moreover, Mr. Bakr stated that airlines need to proactively engage with their governments. They need to push the boundaries and have proactive, predictive and frank discussions with their local authorities and exert a lot of effort to encourage their local authorities to give them the necessary assurances, to enable airlines to operate safely and effectively.

5. Conclusion and Recommendations

This research was conducted to assess the crisis management plan implemented by Kuwait Airways and Kuwait DGCA, identify the gaps in this plan, and propose a unified crisis management plan to the industry consisting of an emergency response framework and guidelines to be applied at every stage of any crisis similar to COVID-19. Based on the responses of Kuwait DGCA and Kuwait Airways representatives, COVID-19 was well managed by aviation stakeholders in Kuwait, yet more coordination was required between state entities and airlines.

Based on the responses aggregated from the interviewees, a fully harmonized crisis management response framework is hard to be achieved given the complexity of regulations, procedures, and guidelines every state has. That being said, all interviewees agree that a degree of harmonization can be reached whenever states work together in a collaborative manner, which will aid the recovery of the travel and tourism industry. Therefore, this paper proposes high-level recommendations, which can serve as the basis to agree on a harmonized approach between states and airlines to tackle a similar crisis in the future:

1. Document all procedures, guidelines, and regulations drafted and implemented during COVID-19 in one repository and make those documents available for aviation stakeholders so that they don't have to rehearse on the spot. The availability of such a repository will allow aviation stakeholders to be proactive in taking decisions.
2. State entities need to engage with aviation stakeholders before drafting procedures, guidelines, and regulations to assess their applicability. At the same time aviation stakeholders, especially airlines, need to do their best in supporting governmental entities.
3. States need to share information openly and transparently about their risk assessment processes and epidemiological situation to give the chance for other states (whether neighboring states or country block) to assess the situation and take the decision to open/close borders based on actual information and haphazard decisions. Such a mechanism can be found under the umbrella of ICAO (Global and MID Region office).
4. Invest in technological solutions that will allow airlines, passengers, and other organizations to do their job in an efficient and effective manner during crises.

It is also concluded that if the above high-level guidelines are considered by individual states and/or country blocs (for example the European Union, which invested in technology for instance and deployed the green pass initiative and started sharing it with other countries) the travel and tourism industry will be in a better position to tackle any similar crisis in the future and recover from the COVID-19 crisis shortly.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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