

A Thesis for Master in Business Administration

 **Examining the business strategies post covid 19 – Planning and copying strategies: A case study of the aviation industry.**

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I dedicate this research to my late parents Angela Kapindi Tholosi and Charles Chinyama Kambangu as well as my grandparents who have always encouraged me to go for further studies and believed in the best of me even when I felt like I was not enough; all your tireless and priceless greatest-support enabled my Degree of Master of Arts in business administration became a reality. I also dedicate this work to all my siblings, your encouragements, your love and your support has helped me see the value of family

**ABSTRACT**

The COVID-19 pandemic sent shockwaves through the aviation industry, disrupting global travel patterns and challenging the traditional business models of airlines and airports. This research endeavors to comprehensively explore the post-pandemic landscape of the aviation sector, with a primary focus on understanding the business strategies adopted by industry stakeholders to navigate this turbulent environment. The research begins by highlighting the unprecedented challenges faced by the aviation sector due to the pandemic, including travel restrictions, border closures, reduced passenger demand, and financial losses. The study underscores the need for airlines to swiftly adapt their business strategies to ensure long-term sustainability in the face of this crisis. The primary objective of this study is to examine the business strategies adopted by airlines in the post-COVID-19 era within the aviation industry. Specific objectives include assessing the impact of COVID-19 on the aviation industry, analyzing the strategies employed by airlines and airports to thrive in the post-pandemic environment, evaluating the effectiveness of marketing and communication strategies in regaining passenger confidence, and exploring shifts in customer behavior and preferences. The theoretical framework of this study encompasses the Contingency theory of organizations, highlighting the importance of adapting to changing environments, and the PESTEL analysis theory, which examines the political, economic, social, technological, environmental, and legal factors influencing the aviation industry. This research is significant as it contributes valuable insights to the aviation industry, policymakers, and researchers. It offers practical guidance for airlines in navigating crises effectively, developing resilient business models, and optimizing their operations. The findings also benefit policy makers in formulating strategies to promote industry recovery and enhance passenger safety. Academically, the study expands the theoretical understanding of strategic management and serves as a foundation for future research in the field. The study incorporated a diverse group of industry professionals, spanning various roles and levels of experience within the aviation sector. Findings revealed that the pandemic brought about profound disruptions, impacting flight operations, passenger demand, and organizational stability. Aviation organizations responded with a multifaceted approach, including digital transformation, cost-cutting measures, collaborations, and safety enhancements. Communication strategies played a pivotal role in instilling passenger confidence, but varied perceptions highlighted the complexity of addressing diverse passenger expectations. Changes in customer behavior and preferences emphasized the importance of health and safety measures, contactless processes, flexible booking policies, and sustainability practices. Recommendations emerged, advocating continuous adaptation, collaboration, and innovation as essential strategies for the aviation industry's long-term sustainability and growth in the post-pandemic era. Overall, this research provides a comprehensive understanding of the aviation industry's response to the challenges posed by the COVID-19 pandemic and offers practical recommendations for airlines and airports to adapt and thrive in the post-pandemic era. These insights are vital as the industry continues its journey toward recovery and sustainability in an ever-changing aviation landscape.

1. **Keywords**— COVID-19 pandemic, Aviation industry, Business strategies and Adaptations.

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**List of Abbreviations**

COVID-19 -Coronavirus Disease 2019

WHO - World Health Organization

CLT - Consolidated Labor Law

ILO - International Labour Organization

PPEs - Personal Protective Equipment

GDP - Gross Domestic Product

PESTEL - Political, Economic, Social, Technological, Environmental, and Legal

PPEs - Personal Protective Equipment

GRZ - Government of the Republic of Zambia

SWOT - Strengths, Weaknesses, Opportunities, Threats

GDP - Gross Domestic Product

WTO - World Trade Organization

ACI - Airports Council International

# **CHAPTER ONE: INTRODUCTION**

## 1.0 Overview

This chapter provides an overview of the study, examining the business strategies post COVID-19 in the aviation industry. It begins by presenting the background to the study, highlighting the context and significance of the research. The chapter also discusses the problem statement, outlining the specific challenges and issues faced by the aviation industry in the aftermath of the global pandemic.

## 1.1 Background

The COVID-19 pandemic has presented unprecedented challenges to industries worldwide, with the aviation sector being one of the hardest hit. The global travel restrictions, border closures, and reduced passenger demand have severely disrupted the operations and profitability of airlines, airports, and related businesses. As a result, the aviation industry has been compelled to swiftly adapt its business strategies to navigate through the crisis and ensure long-term sustainability. Prior to the pandemic, the aviation industry experienced steady growth, driven by globalization, increasing disposable incomes, and a rising demand for air travel. However, the onset of the COVID-19 pandemic in 2020 caused a sudden and drastic decline in air travel, leading to significant financial losses and operational challenges for airlines in Zambia as well as worldwide.

According to the World Health Organization (WHO) in 2020, COVID-19 is a contagious illness caused by a recently discovered coronavirus. This global pandemic originated in Wuhan, China and rapidly affected numerous countries worldwide. On March 11, 2020, the World Health Organization declared it a pandemic. To mitigate the spread of the virus, various measures such as school closures, travel restrictions, quarantines, remote work practices, and curfews had been implemented in our country. This situation extends beyond being solely a health crisis and has evolved into an unparalleled socio-economic crisis, placing significant strain on all nations. Governments were compelled to reassess their internal and external operations while ensuring the safety and well-being of their citizens. Consequently, there was a need to establish healthy and secure work environments that prioritize both the health of individuals and productivity.

Since preventive measures must also be taken in the workplaces which are the common areas of use, in order to limit the spread of the Coronavirus and fight the epidemic, the work activities have been completely interrupted or restricted by many employers, or the remote work or working from home method has been applied by private sector employers. Although it is possible to work remotely or from home in workplaces with technological infrastructure, employers must take occupational health and safety measures in workplaces where the remote working model cannot be applied due to nature of their work. In addition, the basis for worker protection rules is based on the Constitution and CLT No. 4857 and employers have many responsibilities, depending on the managing authority in the workplace. The most important of these responsibilities is the adoption of the necessary occupational health and safety measures in the workplace, as part of the employer's supervisory obligation (Occupational Health & Safety Act No. 36, 2010).

In the joint statement ILO/WHO Committee in 2020 on Occupational Health stated the aim should be at promoting and maintenance of the highest degree of physical, mental and social wellbeing of workers in all occupations; the prevention amongst workers of departures from health caused by their working conditions; the protection of workers in their employment from risks resulting from factors adverse to health; the placing and maintenance of the worker in an occupational environment adapted to his physiological and psychological capabilities; and, to summarize, the adaptation of work to man and of each man to his job." Given this statement and magnitude of the spread of Covid19, the workplaces have become hot spots for the spread of this droplet infection (WHO, May 2020).

In Zambia, the Occupational Health and Safety Act deal with occupational health and safety. According to the Occupational Health and Safety Law, it is the employer's duty to ensure the health, safety and well-being of employees in the workplace; and placing and maintaining employees in an occupational environment adapted to their physical, physiological and psychological qualities. The employer must provide a safe working environment without risks to the health and safety of workers in the workplace (Ministry of Health, 2020). An employer, is further required to prepare a health and safety policy regarding the protection of the health and safety of employees, including a description of the organization and how to carry out reviews of that policy. The employer must provide facilities and systems of work that are, as reasonably as possible, safe and without risk to human health and maintain them in these conditions. The employer may also consult a health and safety representative for guidance and support. The worker must also take due care of his own health and safety and that of others who may be affected by his acts or omissions in the workplace (Occupational Health & Safety Act No. 36, 2010).

With regards to World Health Organization’s declaration of Covid-19 a pandemic and a public health emergency, needing drastic measures to contain it, the Zambian government had to relook at how employee will be protected as an additional part to existing health and safety arrangement. While avoiding a total lockdown of the nation, the government passed Statutory Instrument 21 and 22 of the Public Health Act stipulating measures to prevent and control the spread of the virus. This resulted in providing guidelines to observed both in the community and workplaces. In the workplaces, apart from providing PPEs, working hours were adjusted to mostly asking employees work from home. The public sector under which the study site falls, in order to sustain essential services, the government directed people work on rotational basis to mimise exposure to the virus. In addition, entry to such workplaces had to abide to minimum hygienic standards by ensuring all points of entry are provided with running water, soap and sanitizers for the hands, that is besides of wearing masks (Mhango, et al., 2020).

As preventative workplace measures that are now common to limit the spread of Coronavirus, work activities have been completely interrupted or restricted by many employers, or the remote or home working method has been applied by employers of the private sector. Although it is possible to work remotely or from home in workplaces with technological infrastructure, employers must take occupational health and safety measures in workplaces where the remote working model cannot be applied due to nature of their work (Koh D (2020).

The covid-19 pandemic has had an unprecedented worldwide impact in contemporary history (Saab, et al., 2020). As numerous studies have noted, input-output links amplify COVID-19-related output losses caused by demand and/or supply shocks (Baqaee and Farhi, 2020; Çakmaklı et. al., 2020; Barrot et. al., 2021). Under Covid-19 the policymakers are in a state of severe uncertainty. Additionally, the influence of the Covid19 problem varies significantly within and between countries, having a significant impact on governments polices in a variety of ways, including crisis management efforts and reaction strategy (Allain-Dupré, Chatry, Michalun, & Moisio, 2020). Every period appears to undergo terrible disturbances of routine, but the impacts of the COVID-19 epidemic on business and corporate investment were extraordinary. As the ground rules evolved in unprecedented ways, some businesses collapsed and others fought to survive (Wagdi and Rabie, 2021). As was the case with other traumatic situations, like as the September 11, 2001, terrorist attacks (Kettl, 2003), examining how firms responded to the epidemic provides an unparalleled chance to develop knowledge. Governments have taken significant effort to mitigate the threat posed by coronavirus. As a result of the increased security procedures, several nations came to a complete halt (Dzigbede rt. Al., 2020; Caduff, 2020; Benavides and Nukpezah, 2020; Uddin et. al., 2021). Covid-19 generated various issues as a result of its virulence, since it significantly harmed economies worldwide by restricting persons' employability or even income; however, this impact varied by nation; yet, many nations have been suffering from economic troubles (Maital and Barzani, 2020; Elsafty and Ragheb, 2020; Erikson and Wlezien, 2021 ). From the foregoing, the study finds that business has witnessed many large variables that have an impact on many aspects of human life and business patterns, which can be classified as systematic risk, or in other words, the Covid-19 epidemic is classified as a systematic risk. The term "systematic risk" refers to the portion of overall risk that is caused by circumstances outside the control of a particular firm or individual. Systematic risk is a result of external variables. Because all of the company's investments are vulnerable to systematic risk, it is an un-diversifiable risk. Systemic risk cannot be eliminated via diversification. However, systematic risk includes interest rate fluctuations, inflation, recessions, and wars, among other significant events. Changes in these areas have the potential to reverberate throughout the market and cannot be prevented (Wagdi and Rabie, 2021). Therefore, there will be many changes in the business environment as a result of the epidemic. This opens up many opportunities for business units, along with many restrictions, which can lead to a change in the strategy of the business unit, and this was taken care of in this study by focusing on strategic aspects for business units.

## 1.2 Statement of the problem

The COVID-19 pandemic has unleashed a profound crisis in the aviation industry, disrupting global air travel and posing significant challenges to the survival and profitability of airlines. As the industry enters the post-pandemic era, it becomes crucial to understand the business strategies adopted by airlines to effectively recover, adapt, and position themselves for long-term success. The current body of knowledge lacks comprehensive research that specifically focuses on the strategies undertaken by airlines to recover and thrive in the aftermath of the pandemic. While there have been general discussions on the impact of COVID-19 on the aviation industry, there is a scarcity of detailed analysis. This study aims to bridge this gap by exploring and analyzing the business strategies post COVID-19 within the aviation industry.

The COVID-19 pandemic has spread worldwide, with considerable public health and socio-economic impacts that are also seriously affecting health and safety of workers, as well as their employment stability (WHO, 2020). In this respect, the Zambian government has adopted containment measures, including social distancing, work arrangements (working from home) and suspending of diverse non-essential work activities at the peak of covid19 (GRZ, 2020). Conversely, employers need to take these measures in their workplaces as part of occupational health and safety regulations against Coronavirus. In case the employer violates these obligations, criminal and legal responsibilities arise. Furthermore, if it is determined that the employee has been affected by a Coronavirus outbreak due to the work done by the employer, this situation will be accepted as an injury at work and liability will also arise (WHO, 2020). However, despite all these measures, the impact of Covid 19 in Zambia, most effective business strategies post covid 19 have not been well established. This study willexamine the business strategies post covid 19; a case study of the aviation industry.

## 1.3 General objective

1. Examining the business strategies post covid 19 in the aviation industry

## 1.4 Specific Objectives

1. To explore the effects that covid 19 had on the aviation industry and how the industry responded to that change in the external environment.
2. To examine the business and management strategies adopted by airlines and airports to navigate the post-pandemic environment.
3. Evaluate the effectiveness of marketing and communication strategies employed by airlines to regain passenger confidence and stimulate travel demand in the post-pandemic era.
4. Explore the changes in customer behavior and preferences in the aviation industry following the COVID-19 pandemic, and identify strategies for airlines to adapt and cater to the evolving needs of travelers.

## 1.4 Research Questions

1. How did the COVID-19 pandemic impact the aviation industry, and what were the responses and adaptations implemented by the industry to address this external change?
2. What are the business strategies employed by airlines and airports to navigate the post-pandemic environment successfully?
3. How effective were the marketing and communication strategies implemented by airlines in regaining passenger confidence and stimulating travel demand during the post-pandemic era?
4. What are the changes in customer behavior and preferences within the aviation industry following the COVID-19 pandemic, and what strategies can airlines adopt to adapt and cater to the evolving needs of travelers?

## 1.5 Theoretical framework

The research will be framed in the Contingency theory of organizations and PESTEL (Political Economic, Social, Technological, Environment and Legal) analysis theory.

**1.5.1 Contingency Theory**

The Contingency theory states that organizations adapt to the environment (Bess and Dee, 2008). Bess et al., (2008:138) define contingency theory as “a process of achieving a ‘fit’ between the conditions of the environment and the design of the organization”. Contingency theory holds that there is no “one best way” to organize, and organizations perform best when they adapt to fit their contingencies (Bess and Dee, 2008). An alternative to Taylor’s (1911) scientific management and Weber’s (1924) bureaucracy, contingency theory contends that the correct management approach is contingent on the organization’s situation” (Cole,2010). Since the aviation industry operates in the competitive environment with contingencies, it needs a correct management approach. With this background the contingency theory is assumed to be applicable.

**1.5.2 PESTEL Analysis Theory**

The PESTEL whose letters stands for Political Economic, Social, Technological, Environment and Legal respectively is thought to be created by a Harvard Professor Francis Aguilar in his book in 1967 entitled Scanning the Environment,” (Johnson,2008) This theory is based on the premise that a business is affected by political, economic, social, technological, environmental and legal factors. Since the aviation industry operates in an environment surrounded by these factors, PESTEL analysis is suitable to be used in this study. Jones (2004) defined business environment as a set of forces surrounding an organization that have the potential to affect the way it operates and its access to 17 scarce resources. This environment is not static but is under constant change which can be unforeseen as was the COVID-19 pandemic. Therefore, organizations initiate, build and sustain competitiveness through a set of interrelated factors within its environments. Ansoff and McDonnel (1990) argue that business firms are in constant two – way interaction with environment. These forces are:

**1.5.2.1 Political /Legal Factors**

Wheelen (2008) asserts that political factors refer to forces that allocate power and provide influences as originating from government decisions. Hiriyappa (2008) contends that legal factors comprise a number of laws that regulates the conduct of a business, while some rules are constraining; others are protecting operations of firms. Some of the political and legal factors include: taxation laws, antitrust laws, deregulation laws, labour laws, pricing policies, foreign trade regulations, liberalization laws, pollution laws, patent rights, government subsidies, and laws on special incentives (Pearce & Robinson, 2011).

**1.5.2.2 Economic Factors**

Hiriyappa (2008) states that economic factors concern the nature and direction of the economy within which a business organization operates. Some important variables in the economic segment are: general availability of credit, the level of disposable income, the propensity of people to spend, money supply, currency markets, wage/price controls, inflation rates, interest rates, trade deficit or surplus, budget deficit or surplus, personal saving rates, business saving rates, trends in gross domestic products amongst others.

**1.5.2.3 Social –Cultural Factors**

The social and cultural factors that affect a firm are beliefs, preference, norms, traditions, customs, values, attitude, opinions and lifestyles of a people in a firm’s external environment, as developed from cultural, ecological, demographic, religious, educational and ethnic conditioning (Pearce & Robinson, 2011). As social attitudes changes so too does the demand of various types of goods (Smith, 2003). Social factors are dynamic with constant change resulting from efforts of individuals to satisfy their desires and needs by controlling and adapting to environment factors.Technological FactorsPearce and Robinson (2011) observed that the technological 11 advancement in manufacturing, processing, preservation, and packaging have facilitated product improvement as well as introduction of new products in the market. Technological 19 segment comprises institutions and activities involved with creating new knowledge and translating that knowledge into new output product or services, processes and materials. Equally, technology can generate new markets and innovative goods or significantly lengthen or shorten life of a product or a firm (Pearce, 2011).

**1.5.2.4 Ecological Factors**

Pearce and Robinson (2011) refers to the term ecology as the relationships among human beings and other living things and the air, soil and water that support them. Ecological factors concern firms’ relation to living and non-living things like air, water and land as well as issues relating to pollution, global warming, loss of habitat and biodiversity. Of late firms are increasingly called upon to pay special attention to ecological factors by providing protection to the natural environment through corporate social responsibility.

**1.6 Significance of the study**

The significance of this study lies in its potential to contribute valuable insights and knowledge to the aviation industry, policymakers, researchers, and other stakeholders. By examining the business strategies post COVID-19 within the aviation industry, this research holds several key implications. This study will offer practical insights into the specific adaptations, innovations, and initiatives undertaken by airlines to recover and thrive in the aftermath of the COVID-19 pandemic. By understanding successful business strategies, airlines will be equipped with evidence-based knowledge to guide their decision-making processes, enabling them to navigate through future crises effectively. The findings will help airlines identify best practices, develop resilient business models, and optimize their operations to ensure sustainability and long-term growth.

A study onexamining the business strategies post covid 19 is one important aspect of change to management research. New knowledge will be generated on how organizations adapt to change in response to changing environment that will add to the body of knowledge. The study is likely to benefit the aviation industry as it will bring out recommendations on best ways of ensuring adaptability with regards to COVID19. The study would also benefit policy makers in both the public and private sector more especially the activities surrounding mechanical flight and the aircraft industry as these would assess findings and act on recommendations that are of significance in policy formulation. This study can assist in developing frameworks that promote industry recovery, enhance passenger safety, and support the overall resilience of the aviation ecosystem.

Academically, this study will contribute to the existing body of knowledge on business strategies in the aviation industry, specifically in the context of the post-COVID-19 period. By conducting an in-depth case study analysis, this research will expand the theoretical understanding of strategic management and provide empirical evidence on the effectiveness of specific strategies in navigating crises. The study can serve as a foundation for further research and exploration of related topics.

## 1.7 Scope of the study

This study focuses on examining the business strategies implemented by airlines in the post-COVID-19 period within the aviation industry. While the aviation industry comprises various stakeholders such as airports, aircraft manufacturers, and ground handling services, this research specifically centers on the strategies employed by airlines.

## 1.8 Operational definition of terms

1. **Business Strategies:** In this study, business strategies refer to the deliberate actions, decisions, and plans implemented by airlines in response to the COVID-19 pandemic. These strategies encompass a range of measures such as cost-cutting initiatives, changes in operational procedures, marketing and promotional activities, route network adjustments, partnerships and alliances, and innovations aimed at addressing the challenges posed by the pandemic and ensuring long-term viability.
2. **Post-COVID-19 Period:** The post-COVID-19 period refers to the time frame following the initial outbreak and peak of the COVID-19 pandemic. Specifically, this study focuses on the strategies adopted by airlines during the recovery phase and beyond, as the aviation industry adjusts to the new normal and works towards restoring operations, rebuilding passenger confidence, and achieving sustainable growth.
3. **Aviation Industry:** The aviation industry encompasses various stakeholders involved in air transportation, including airlines, airports, aircraft manufacturers, ground handling services, regulatory bodies, and related service providers. For the purpose of this study, the aviation industry primarily focuses on the activities, strategies, and challenges faced by airlines.
4. **Adaptations:** Adaptations refer to the adjustments, modifications, and changes made by airlines in response to the COVID-19 pandemic. These adaptations may include alterations to business models, operational procedures, service offerings, and customer experience to align with new health and safety protocols, changing customer expectations, and market conditions.

**CHAPTER TWO: LITERATURE REVIEW**

**2.0 Overview**

The COVID-19 pandemic brought about unprecedented challenges to various industries globally, with the aviation sector being one of the most profoundly affected. This literature review aims to provide an in-depth analysis of the impact of COVID-19 on the aviation industry and explores the strategies that airlines and airports have adopted to navigate the post-pandemic environment. Additionally, it evaluates the effectiveness of marketing and communication strategies employed by airlines to regain passenger confidence and stimulate travel demand. Lastly, the review delves into changes in customer behavior and preferences in the aviation industry following the pandemic, suggesting strategies for airlines to adapt and cater to evolving traveler needs.

**2.1** **Effects of covid 19 on the aviation industry and how the industry responded to that change in the external environment.**

The aviation industry plays a central role in the global economy as it acts as a trade, industry, and collaboration vehicle. The pre-COVID-19 tourism growth witnessed before 2020 was largely driven by the growth of the aviation industry and air connectivity. The aviation value chain has positive economic spin-offs on other facets of the economy. As such, robust aviation industry is beneficial by and large to the economic prospects of a country or region. This makes the welfare and well-being of the aviation industry a global concern.

The COVID-19 pandemic had a debilitating impact on the global aviation industry in the main. The impact of COVID-19 by far surpassed previous experiences with other aviation shocks, such as the SARS. The pandemic resulted in declines in air mobility in many parts of the world for both civilian and military flights (ibid). According to Asongu (2021), the COVID-19 pandemic’s impact on aviation has been much more pronounced since it disrupted the global supply chain. The disappearance of airlines also adversely impacted the collection of weather data in some regions of the world. This could pose challenges for the aviation industry which depends on weather and climate data in flight path planning and also create climate data gaps at a time when there is a need to understand climate patterns to plan for climate change adaptation.

In 2020, the COVID-19 pandemic swept the whole world and exerted a significant impact on the global society and major industries. As of September 2021, the COVID-19 pandemic has affected over 200 countries in the world with more than 23 million confirmed cases accumulated, causing more than 470 million death. Airline industry is vulnerable to major external events such as energy crisis and major public health. This has had a huge impact on the global civil aviation industry. In 2020, at the beginning of the pandemic, China's airline industry experienced a cliff-like decline. The entire industry completed a passenger traffic of 417,778,200, a decrease of 36.7% compared with the year 2019. The pandemic caused a decline in passenger flow, the number of flights, and the number of routes offered, which caused unprecedented shock to the whole industry. The Airline industry is very sensitive to public health emergencies. Since the beginning of the twenty first century, major global public health events have erupted from time to time, such as severe acute respiratory syndrome (SARS) in 2003 and the influenza A virus (H1N1) in 2009. The impact of public health emergencies on China's airline industry has been turned out to be greater than on the country's railway system and highway system. Facing the uncertain risks brought by the COVID-19 pandemic, it is necessary to use effective means to assess and resolve them, which will help the recovery and sustainable development of aviation industry and related industries.

Despite the negatives of the COVID-19 pandemic in some respects, the pandemic resulted in unintended consequences. There is new evidence that suggests that in as much as there are several airlines that went bankrupt as a result of the pandemic. The disease outbreak caused the mushrooming of new airlines in some parts of the world. Sun et al. (2019) noted that the pandemic ushered in a whole new era of airline start-ups which came largely at the expense of old airlines that had a better risk appetite and were innovative in their operations. Several of the new start-ups seem to have been in Europe and Asia. These present policy challenges for the sector in many respects. There is a need to acknowledge that the pandemic, apart from unleashing terror on the tourist market, also created a whole new business culture and ecosystem. It forced a rethink of the tourism and aviation business model as we know it and resulted in many questioning the sustainability of the aviation business model. At the height of the pandemic, many employees in the tourism and aviation industries were laid off through retrenchments. Many of the laid-off staff were skilled and experienced. Indeed, other staff members succumbed to the disease, while others opted for other jobs altogether. Many academics warned that the post-pandemic tourism aviation industry was likely to be transformed and, in many ways, a departure from the old traditional industry.

Given that COVID-19 altered many aspects of people’s lives, including those working in aviation tourism, there is a huge demand to understand how aviation companies were fairing during recovery. There is also a need to understand some of the innovations, successes, and challenges of the new normal, which is technology driven. Such learnings are key for policy, practical interventions, and future pandemic lessons. It is against this background that this study is conceptualised. With the new normal after some severe cash burn, new challenges emerged, and so are the new opportunities that this study seeks to explore. The study emerges from the highly touted uncertainties that were highlighted post the emergency of the COVID-19 pandemic.

The COVID-19 crisis is the subject of various aviation-related studies. Lamb et al. (2020) and Song and Choi (2020) study factors influencing passenger willingness to fly during and after COVID-19 in the USA and South Korea. While the threat of the virus and passenger fear are identified as significant determinants for traveling by air, factors such as trip purpose, social perceptions, choice of destination and local self-isolation regulations, transparent communication efforts, and the airlines’ preventative measures are mentioned as implications for restoring passenger confidence. The willingness to travel during and after COVID-19 is influenced by a complex set of factors and is often not supported by the variety of measures and regulations put in place by different countries or stakeholders along the travel chain. Examples are hygiene measures such as wearing a mask or maintaining social distancing and regulations regarding health certificates and quarantine obligations. Many factors depend on the country of arrival. Some countries allow quarantine-free traveling in flight corridors, and nations with a large share of vaccinated population might ease restrictions and controls, often depending on the appearance of new virus variants (Airport Research Center, 2020; Sydney Airport, 2021; Gostin et al., 2021). Most work focus on single countries or markets, and further research might confirm the determinants for passenger willingness to re-travel after COVID-19.

As for the impact of the COVID-19 on China's airline industry, Li et al. (2021) use a gradient boosting decision tree to study the dynamic impact of COVID-19 on China's intercity tourism and find that during the pandemic, China's intercity travel was reduced by nearly 50%. The analysis results of air transportation capacity, traffic flow, revenue, and international market show that the impact of COVID-19 on airlines is different. The less-funded airlines are negatively affected, while airlines that focus on the domestic market and economy class and receive more funding have limited impact. The impact of the COVID-19 pandemic on cargo airlines and passenger airlines is somewhat different. The reason is that pandemic prevention measures are mainly for air passengers, while air cargo is less affected. The risk index is used to quantify the risk of imported cases on inbound international flights. The results show that after China implements strict control on inbound flights, the number of imported cases has dropped by about 50%, while Hong Kong, Taiwan and other areas with dense international flights have a higher risk of imported cases during the COVID-19 pandemic, the impact of the three modes of transportation including high-speed rail, air and long-distance buses on the spread of the pandemic. It is found that the speed of the pandemic's spread was significantly related to the number of cities' airports and high-speed rail stations, but its correlation with the total number of confirmed cases is very high.

Many flights from Hong Kong were cancelled in March 2020 due to the pandemic. Early March 2020 saw 10% of all flights cancelled compared to 2019. As the pandemic progressed, 40–60% fewer flight movements were recorded in late March with international flights affected the most. By April 2020, over 80% flight movements were restricted across all regions. Research shows that world recovery of passenger demand to pre-COVID-19 levels is estimated to take 2.4 years (recovery by late 2022), with the most optimistic estimate being 2 years (recovery by mid-2022), and the most pessimistic estimate 6 years (recovery in 2026). Large regional differences are detected: the Asia-Pacific has the shortest estimated average recovery time of 2.2 years, followed by North America in 2.5 years, and Europe 2.7 years. For [air freight](https://en.wikipedia.org/wiki/Air_freight) demand, a shorter average world recovery time of 2.2 years is predicted if compared to passenger demand. On the regional level, Europe and North America are comparable with average recovery times of 2.2 years, while the Asia-Pacific is predicted to recover faster in 2.1 years. In 2022, recovery of travel demand exceeded airlines' ability to hire back pilots and ground staff quickly enough, causing several months of widespread delays and cancellations across the United Statesand Europe. As passenger flights were cancelled, the cost of sending cargo by air changed rapidly. The cost of sending cargo across the Pacific Ocean tripled by late March 2020. Adjusted cargo capacity fell by 4.4% in February 2020 while air cargo demand also fell by 9.1%, but the near-halt in passenger traffic cut capacity even deeper as half of global air cargo is carried in passenger jets' bellies. Air freight rates rose as a consequence, from $0.80 per kg for transatlantic cargoes to $2.50–4 per kg, enticing passenger airlines to operate cargo-only flights through the use of preighters, while cargo airlines brought back into service fuel-guzzling stored aircraft, helped by falling [oil prices](https://en.wikipedia.org/wiki/Oil_price). Passenger airlines were enticed to convert aircraft.

At the end of March 2020, cargo capacity was down by 35% compared to the previous year: North America to Asia Pacific capacity fall by 17% (19% in the opposite direction) Asia-Pacific to Europe was down by 30% (reverse: -32%), intra-Asia was down by 35%. Lagging the capacity reductions, demand was down by 23% in March, resulting in higher freight rates: from China/Hong Kong, between 2 March 2020 and 6 April 2020 +158% to Europe and +90.5% to North America. By May, freight rates from Shanghai were $12/kg to North America, $11/kg to Europe. The cargo shortage may evaporate if the global economic crisis depresses demand: the [WTO](https://en.wikipedia.org/wiki/WTO) forecast a global trade contraction of 13–32% in 2020. International mail between many countries stopped completely, either due to suspension of domestic service or lack of transportation. Business aviation was less affected than airline traffic, in that top executives' travel is often considered essential. [London Biggin Hill Airport](https://en.wikipedia.org/wiki/London_Biggin_Hill_Airport) reported traffic to be around 30% of 2019 levels, with transatlantic traffic strong. Once lockdown restrictions are eased, business aviation has an opportunity to capture premium passengers who might previously have chosen airlines, but who may prefer the social distancing afforded by a private jet.

United States [air charter](https://en.wikipedia.org/wiki/Air_charter) travel strongly increased in February and March as airlines slashed schedules, making commercial flights increasingly unpredictable; however, some charter operators such as [Jet Suite](https://en.wikipedia.org/wiki/JetSuite) subsequently saw a drastic drop in business as widespread stay-at-home orders took effect in April 2020.

Mrazova, M. (2021) explains that on 5 March 2020, the [International Air Transport Association](https://en.wikipedia.org/wiki/International_Air_Transport_Association) (IATA) estimated that the airline industry could lose between US$63 to 113 billion of revenues due to the reduced number of passengers. IATA had previously estimated revenue losses of around US$30 billion two weeks before their 5 March estimate. By 17 March, IATA had stated that its 5 March estimate was "outdated", and that airlines would require $200 billion in bailouts to survive the crisis. IATA further revised their revenue loss estimate on 24 March to be $252 billion globally, a 44 percent drop. Another further estimate was published on 14 April, which forecasted a revenue drop of $314 billion (55 percent) and a traffic drop of 48 percent in passenger count for 2020. Due to the sudden and large losses of revenue, airlines began to hold out against refunding cancelled flights and tickets to conserve cash, despite government regulations. In Europe, airlines had successfully negotiated to defer some $1.2 billion in [air traffic control](https://en.wikipedia.org/wiki/Air_traffic_control) charges. [Oliver Wyman](https://en.wikipedia.org/wiki/Oliver_Wyman) reported that Asian airlines reduced their [available seat miles](https://en.wikipedia.org/wiki/Available_seat_miles) by 23 percent in March 2020. In Europe, the impact of the outbreak is expected to accelerate [corporate consolidation](https://en.wikipedia.org/wiki/Consolidation_%28business%29) in the airline industry. According to consultancy CAPA Centre for Aviation, most airlines would be bankrupted by the end of May 2020. Air travel demand rose 2.4 percent year-on-year in January 2020, the lowest it has been since the [April 2010 eruptions of Eyjafjallajökull](https://en.wikipedia.org/wiki/2010_eruptions_of_Eyjafjallaj%C3%B6kull), though travel disruptions due to coronavirus only began in late January. By March, the number of flights had plummeted, with about 280,000 flights reported between 24 and 30 March 2020 compared to around 780,000 in a similar period the previous year. Despite a lack of passengers, regulations regarding [flight slots](https://en.wikipedia.org/wiki/Landing_slot) initially compelled British airlines to fly empty planes to European airports to avoid losing their slots. Fuel prices dropping (due to an [oil price war between Russia and Saudi Arabia](https://en.wikipedia.org/wiki/2020_Russia%E2%80%93Saudi_Arabia_oil_price_war)) by around a quarter could not compensate for the fall in demand.

Analysts expect airlines to reduce the size of their fleets as a result of the downturn, and point out that this could be done either by modernizing fleets hastening the retirement of older aircraft and maintaining planned deliveries of new, more fuel-efficient models or by retaining older planes and reducing capital expenditure on new aircraft.

By mid-April 2020, the inactive fleet ballooned to almost 14,400, over two thirds of the 22,000 mainline passenger airliners, leaving 7,635 in operation stood: predominantly in Europe, where less than 15% are operating, than in North America (45%) or Asia (49%); and affecting [narrow-body aircraft](https://en.wikipedia.org/wiki/Narrow-body_aircraft) (37%) less than [wide-body aircraft](https://en.wikipedia.org/wiki/Wide-body_aircraft) (27%). Consequently, demand for aircraft storage increased to the point where runways and taxiways in normally busy airports such as [Frankfurt Airport](https://en.wikipedia.org/wiki/Frankfurt_Airport) and [Atlanta Airport](https://en.wikipedia.org/wiki/Hartsfield%E2%80%93Jackson_Atlanta_International_Airport) were closed to make room for storage.

In April 2020, global passenger capacity is down 91%; the [ICAO](https://en.wikipedia.org/wiki/ICAO) anticipates 1.2 billion fewer travelers by September 2020 compared to a typical year, a revenue fall of $160–253 billion for the first nine months of 2020. While European airlines owe $10 billion for cancelled flights, IATA is predicting a 55% fall in revenue compared to 2019, a $89 billion hit, costing $452 billion on the wider economy. Boeing anticipates passenger traffic recovering in two to three years to 2019 levels, but expects production to take longer. The [Airports Council International](https://en.wikipedia.org/wiki/Airports_Council_International) estimates 4.6 billion fewer passengers in 2020, down from 9.1 billion in 2019. The IATA expects [RPKs](https://en.wikipedia.org/wiki/Revenue_passenger_kilometer) to be down by half from 2019 except in North America, down by 36%; for $314 billion lower revenues, a 55% fall. The association forecast air travel to lag economic recovery by up to two years: air traffic in 2021 would still be down by 24% from 2019, and a return to 2019 levels would happen by 2023–2025.

By June 2020, the IATA was projecting a collective net loss of $84.3 billion yearly for Airlines, worse than the $30 billion loss during the [financial crisis of 2008-2009](https://en.wikipedia.org/wiki/Financial_crisis_of_2008-2009), and projects that income will remain negative through 2021. By mid-April 2020, 14,500 mainline airliners were stored, leaving 7,400 active: one third of the whole fleet, even one fifth for European carriers; down from 20,200 in active service and 1,800 in storage before. By mid-June, 10,500 were still stored while 11,500 were active, with an average daily utilization down by 35% from 2019; led by Asia-Pacific airlines with almost 75% of the fleet flying, then Europe with one third still stored, then North America with a 50/50 split. Major airliner deliveries dropped from a typical 90 to 100 aircraft a month to an average of less than 40 in the first half of 2020. As traffic may not return to pre-pandemic levels until 2024, older, less fuel-efficient, and higher-maintenance aircraft retirement is accelerating, including the [Boeing 777](https://en.wikipedia.org/wiki/Boeing_777), [Airbus A330](https://en.wikipedia.org/wiki/Airbus_A330) and [Airbus A380](https://en.wikipedia.org/wiki/Airbus_A380). They are replaced with newer [Airbus A350](https://en.wikipedia.org/wiki/Airbus_A350) and [Boeing 787s](https://en.wikipedia.org/wiki/Boeing_787), as a surplus of used aircraft is expected until 2030. By the third quarter of 2020, [China Southern](https://en.wikipedia.org/wiki/China_Southern) became the first of the large Chinese carriers to return to profitability, while [Air China](https://en.wikipedia.org/wiki/Air_China) and [China Eastern](https://en.wikipedia.org/wiki/China_Eastern) managed to narrow their losses, helped by domestic travel recovery by September after traffic bottomed out in February but international demand is still in the doldrums. By May 2021, 7,850 airliners were still in storage, down from a peak of 16,522 in April 2020. As US traffic recovers, networks are evolving towards more [point-to-point transit](https://en.wikipedia.org/wiki/Point-to-point_transit) to [leisure destinations](https://en.wikipedia.org/wiki/Tourism), bypassing major [airline hubs](https://en.wikipedia.org/wiki/Airline_hub) while [business travel](https://en.wikipedia.org/wiki/Business_travel) is still lagging.

Masson, The aggregation of the 66 largest airlines with public financials showed a revenue falling by 60% from $658Bn in 2019 to $262Bn in 2020, while net profits went from $17bn to a $140bn loss, a $157bn decrease. By the end of 2021, the global airline industry had returned to 79% of its pre-Covid size according to [Airline Business](https://en.wikipedia.org/wiki/Airline_Business), using an index from 13 of the largest airline groups: 86% of the workforce size, 96% of the fleet size, 71% of the revenue and 62% of the passenger numbers. As demand plummeted, values fell 2% to 22% between January and May 2020 for five-year old aircraft, and [lease](https://en.wikipedia.org/wiki/Aircraft_lease) rates by 4% to 26%.[[54]](https://en.wikipedia.org/wiki/Impact_of_the_COVID-19_pandemic_on_aviation) By August, values fell further by 9% to 25% since January, and lease rates by 12% to 45%.[[55]](https://en.wikipedia.org/wiki/Impact_of_the_COVID-19_pandemic_on_aviation) By November, market values of 20-year-old large [single-aisles](https://en.wikipedia.org/wiki/Single-aisle) had fallen by 22% to 29% while their lease rates had fallen by 44% to 50%, and market values of 20-year-old [wide body](https://en.wikipedia.org/wiki/Widebody) twins had fallen by 15 to 35% while their lease rates had fallen by 20 to 44%.As the pandemic reduced demand for new jets in early 2020, manufacturers trimmed airliner production rates and were producing aircraft they are unable to deliver. Airbus cut its monthly production from 60 to 40 [A320s](https://en.wikipedia.org/wiki/Airbus_A320_family), from 4.5 to two [A330s](https://en.wikipedia.org/wiki/Airbus_A330), and from nine to six [A350s](https://en.wikipedia.org/wiki/Airbus_A350). Boeing reduced its output per month from 14 to six [787s](https://en.wikipedia.org/wiki/Boeing_787_Dreamliner), from five to two [777s](https://en.wikipedia.org/wiki/Boeing_777), and [737 Max](https://en.wikipedia.org/wiki/Boeing_737_MAX) production was already halted, as a rate of 31 per month was targeted by early 2022. [Bloomberg](https://en.wikipedia.org/wiki/Bloomberg_News) was expecting Airbus and Boeing to deliver 30 jets monthly each in 2021, mostly for single-aisles.

In 2020, deliveries were down by more than 50% compared to 2019, after 10 years of growth. [Cirium](https://en.wikipedia.org/wiki/RELX) forecasts a traffic recovery towards 2024 and a 3.3% growth per year over 20-years, needing 43,315 airliner deliveries. The projection is 8% less than before the crisis, while [retirements](https://en.wikipedia.org/wiki/Aircraft_retirement) are accelerated. [Airbus](https://en.wikipedia.org/wiki/Airbus) reduced its wing production on factories in [Broughton](https://en.wikipedia.org/wiki/Broughton%2C_Flintshire), [Filton](https://en.wikipedia.org/wiki/Filton) and [Bremen](https://en.wikipedia.org/wiki/Bremen), and reduced working hours in the sites. It’s French and Spanish sites suspended production for several days before a partial resumption on 23 March. Monthly production was cut to four A220s, forty A320s, two A330s and six A350s. Airbus delivered 122 aircraft in the first quarter, 40 fewer than in the previous year, and 60 could not be handed over due to travel restrictions. Airliner [revenues](https://en.wikipedia.org/wiki/Revenue) were down 22% to €7.5 billion, [earnings](https://en.wikipedia.org/wiki/Earnings) dropped by 82% to €57 million, and their adjusted [EBIT](https://en.wikipedia.org/wiki/Earnings_before_interest_and_taxes) was down 59% to €191 million. The company [free cash flow](https://en.wikipedia.org/wiki/Free_cash_flow) was a negative €8 billion, including the €3.6 billion bribery penalties, similar to the negative €4.3 billion of the previous year without. For the first quarter, Airbus' total adjusted EBIT was halved to €281 million, and it made a net loss of €481 million (compared to a €40 million profit in the previous year). In 2020, [capital expenditure](https://en.wikipedia.org/wiki/Capital_expenditure) should be reduced by €700 million to €1.9 billion.

[Boeing](https://en.wikipedia.org/wiki/Boeing) froze hiring and reportedly laid off employees due to a large number of cancellations, which outpaced new orders in February 2020. On 11 March, it was revealed that Boeing was to exercise its whole US$13.8 billion loan facility (which it secured in February). Prior to the pandemic, Boeing's business had been impacted by [groundings of its 737 MAX aircraft](https://en.wikipedia.org/wiki/Boeing_737_MAX_groundings). By 7 April, Boeing had indefinitely suspended production at [Boeing South Carolina](https://en.wikipedia.org/wiki/Boeing_South_Carolina) and [Puget Sound](https://en.wikipedia.org/wiki/Puget_Sound_region), [Washington](https://en.wikipedia.org/wiki/Washington_%28state%29), completely halting the assembly of its commercial aircraft. On 21 April, Boeing announced a management structure overhaul. On 27 May, it announced plans to lay off 12,000 employees, while it reported zero new orders in April 2020. In October, it announced plans to lay off thousands more employees through the following year, with the expectation that it would end 2021 with 19% fewer employees than its pre-pandemic workforce. [Bombardier](https://en.wikipedia.org/wiki/Bombardier_Inc.) on 26 March 2020 announced a suspension of most Canadian production in [Ontario](https://en.wikipedia.org/wiki/Ontario) (for 2 weeks) and [Quebec](https://en.wikipedia.org/wiki/Quebec) (until 13 April), in addition to halting production in [Northern Ireland](https://en.wikipedia.org/wiki/Northern_Ireland). 12,400 Bombardier employees in Canada (70 percent of the workforce) were furloughed. [CFM International](https://en.wikipedia.org/wiki/CFM_International) deliveries of [CFM LEAP](https://en.wikipedia.org/wiki/CFM_LEAP) engines across the first nine months of 2020 fell to 622 from 1,316 in the same period in 2019, and 123 [CFM56s](https://en.wikipedia.org/wiki/CFM56) against 327, while Leap fleet cycles were down 15% year-on-year and CFM56 cycles were 48% lower.

[Embraer](https://en.wikipedia.org/wiki/Embraer) reported deferment of orders of its commercial aircraft.[[70]](https://en.wikipedia.org/wiki/Impact_of_the_COVID-19_pandemic_on_aviation) It also suspended its financial guidance for 2020. [General Electric](https://en.wikipedia.org/wiki/General_Electric) announced on 23 March 2020 that it would cut one tenth of employees in its [jet engine arm](https://en.wikipedia.org/wiki/GE_Aviation), amounting to around 2,500 employees, in addition to furloughing around half of its maintenance and repair staff. [Mitsubishi](https://en.wikipedia.org/wiki/Mitsubishi_Aircraft_Corporation) in May 2020 halved the budget of its [SpaceJet](https://en.wikipedia.org/wiki/Mitsubishi_SpaceJet) programme and repatriated all work from the US to Japan. In October 2020 it announced a further budget reduction and put almost all SpaceJet activities on hold. [Rolls-Royce](https://en.wikipedia.org/wiki/Rolls-Royce_Holdings) planned to cut 9,000 jobs, mainly in its civil aerospace division, and mainly affecting its UK site at [Derby](https://en.wikipedia.org/wiki/Derby). [Textron](https://en.wikipedia.org/wiki/Textron) Inc., the parent company of [Textron Aviation](https://en.wikipedia.org/wiki/Textron_Aviation) and [Bell Helicopter](https://en.wikipedia.org/wiki/Bell_Helicopter), announced a 1,950 jobs layoff. [United Aircraft Corporation](https://en.wikipedia.org/wiki/United_Aircraft_Corporation), Russian Industry and Trade Minister said "is quite balanced as a production unit". Because recovery is quicker in Russia than abroad, the production program is drafted for 2020–2021. Also, the market will require up to 1,500 new civil jets within the next 15 to 20 years, adding that there is scope for optimism in the domestic industry. On 25 April 2020, Boeing announced it had terminated the planned [Boeing–Embraer joint venture](https://en.wikipedia.org/wiki/Boeing%E2%80%93Embraer_joint_venture) after the 24 April delay expired, attributing it to Embraer's failure to meet conditions. Later the same day, Embraer asserted that it had satisfied the conditions for consolidation to proceed, and that it would seek compensation for Boeing's allegedly wrongful termination of the deal. Aviation analyst Scott Hamilton believed the collapse in demand for airliners caused by the pandemic and the resulting cash constraints motivated Boeing's defection, along with the desire to avoid the perception that it was using government pandemic relief funds for foreign investment.

From March 2020, various United States airlines stored hundreds of disused aircraft at [Southern California Logistics Airport](https://en.wikipedia.org/wiki/Southern_California_Logistics_Airport) and [Roswell International Air Center](https://en.wikipedia.org/wiki/Roswell_International_Air_Center). Runways and taxiways at [Frankfurt Airport](https://en.wikipedia.org/wiki/Frankfurt_Airport), Hartsfield–Jackson Atlanta International Airport, and [Tulsa International Airport](https://en.wikipedia.org/wiki/Tulsa_International_Airport) were closed and used as aircraft storage areas by [Lufthansa](https://en.wikipedia.org/wiki/Lufthansa), Delta Air Lines, and American Airlines respectively. [Ciudad Real International Airport](https://en.wikipedia.org/wiki/Ciudad_Real_International_Airport) and [Madrid Airport](https://en.wikipedia.org/wiki/Madrid_Airport) benefited from medical equipment cargo corridors from China. By mid-April 2020, [Airports Council International](https://en.wikipedia.org/wiki/Airports_Council_International) (ACI) observed a 95% fall in traffic in 18 airports in major aviation markets in Asia-Pacific and the Middle East. On 27 April 2020, [Westchester County Airport](https://en.wikipedia.org/wiki/Westchester_County_Airport) closed to airlines for about a month for a major runway repaving project, which was originally scheduled to be undertaken in stages late at night over the span of four months. The decision to close and expedite the project was made because the number of daily flights had fallen drastically. This was the first total closure of a United States commercial airport for pandemic-related reasons. Various airlines from outside Australia stored aircraft at [Alice Springs Airport](https://en.wikipedia.org/wiki/Alice_Springs_Airport). On 5 May 2020, ACI World estimated that in 2020, passenger traffic worldwide would amount to less than half of what was previously projected for the year. UK airports axed expansion plans valued at £1 billion. In May 2020, [Dallas/Fort Worth International Airport](https://en.wikipedia.org/wiki/Dallas/Fort_Worth_International_Airport) (DFW) was the world's busiest airport [measured by aircraft movements](https://en.wikipedia.org/wiki/List_of_busiest_airports_by_aircraft_movements) despite significantly lower traffic than normal. [American Airlines](https://en.wikipedia.org/wiki/American_Airlines) diminished [point-to-point](https://en.wikipedia.org/wiki/Point-to-point_transit) routes and instead sent flights through its DFW [hub](https://en.wikipedia.org/wiki/Airline_hub), creating traffic volumes surpassing those at the normally busier [O'Hare International Airport](https://en.wikipedia.org/wiki/O%27Hare_International_Airport) and [Hartsfield–Jackson Atlanta International Airport](https://en.wikipedia.org/wiki/Hartsfield%E2%80%93Jackson_Atlanta_International_Airport) by substantial margins. In May 2020, [Salt Lake City International Airport](https://en.wikipedia.org/wiki/Salt_Lake_City_International_Airport) reported that an in-progress redevelopment project would be sped up by as much as two years by the pandemic. Lower passenger numbers meant that larger areas of the airport could be closed much earlier than expected for demolition and renovation, saving up to $300 million for the project overall. [Orly Airport](https://en.wikipedia.org/wiki/Orly_Airport) in Paris was closed to commercial traffic from 1 April to 25 June 2020. In Europe, some of the airports that saw the most parked airliners during the pandemic were [Ciudad Real International Airport](https://en.wikipedia.org/wiki/Ciudad_Real_International_Airport), [Madrid Airport](https://en.wikipedia.org/wiki/Madrid_Airport), [Teruel Airport](https://en.wikipedia.org/wiki/Teruel_Airport) and [Istanbul Airport](https://en.wikipedia.org/wiki/Istanbul_Airport). In late October 2020, [ACI Europe](https://en.wikipedia.org/wiki/Airports_Council_International_Europe) stated that 193 (mostly regional) of the 740 airports in Europe were risking bankruptcy. Coronavirus related travel restrictions imposed in 2020 reduced traffic by 70% at the Dubai International Airport. The number of travellers through this tourism hub dropped to 25.9 million in 2020. As compared to Q1 of 2020, Dubai International Airport's passenger traffic has plunged 67.8% to reach 5.75 million in Q1 of 2021. Along with the main airports in Tokyo, Los Angeles, London, Chicago and Paris, Dubai has also dropped out of the top 10 rankings for total passengers last year. On 17 July 2021, ACI World estimated that global passenger traffic in 2020 was reduced by over 5.9 billion passengers, a loss of 62.3% of what was estimated for the year. In 2021, the loss is estimated at just over 5 billion passengers, representing 50.9% of the total estimated for the year. In Summer 2022, many airports experienced extraordinary long delays and a large number of cancelled flights, as a consequence of the pandemic. In particular, at [Amsterdam Airport Schiphol](https://en.wikipedia.org/wiki/Amsterdam_Airport_Schiphol), the pandemic lead to recession of air traffic and subsequently to the shortage of security staff and walkout of baggage handlers, which resulted in hours long queues.

In March 2020, the United States [Federal Aviation Administration](https://en.wikipedia.org/wiki/Federal_Aviation_Administration) (FAA) announced that it would not take enforcement action against pilots whose medical certificates expired between 31 March and 30 June, due to the difficulty of scheduling appointments with certified Aviation Medical Examiners. In June, the FAA expected that the exception would be extended. The FAA announced on 23 April 2020 a reduction in the operating hours of over 100 [control towers and terminal radar approach control](https://en.wikipedia.org/wiki/Air_traffic_control) facilities, citing a drop in air traffic of as much as 96%. Pilots were advised that certain air traffic control services and [instrument landing system](https://en.wikipedia.org/wiki/Instrument_landing_system) approaches may be periodically unavailable. On 8 June 2020, the Austrian [conservative](https://en.wikipedia.org/wiki/Austrian_People%27s_Party)–[green](https://en.wikipedia.org/wiki/The_Greens_%E2%80%93_The_Green_Alternative) [coalition government](https://en.wikipedia.org/wiki/Second_Kurz_government) concluded a support deal for [Austrian Airlines](https://en.wikipedia.org/wiki/Austrian_Airlines) (a subsidiary of Lufthansa) for €150 million in taxpayer grants, and €300 million in banking loans that are to be paid back. This was significantly less than expected (Austrian Airlines had applied for €767 million), and came under the stringent conditions (some of which also applied to other airline companies operating in Austria) to restrict short-distance airline operations, to ban cheap tickets below €40 and include a €12 environmental tax to each ticket, and to half its CO2 emissions by 2030. Many United States [general aviation](https://en.wikipedia.org/wiki/General_aviation) social events and [fly-ins](https://en.wikipedia.org/wiki/Fly-in) scheduled for the spring of 2020 were cancelled or postponed, including [Sun 'n Fun](https://en.wikipedia.org/wiki/Sun_%27n_Fun) and several conducted by the [Aircraft Owners and Pilots Association](https://en.wikipedia.org/wiki/Aircraft_Owners_and_Pilots_Association).

Santos et al. (2021) use a two-step regression method to study the differential impact of COVID-19 on air travel demand. The study finds that short-density and low-density routes are one of the most affected aviation markets, while commercial routes are more affected than leisure routes, the COVID-19 pandemic also has a certain impact on the economic and financial markets of the aviation industry. The COVID-19 pandemic has greatly reduced travel demand, affected investor expectations, and caused a negative impact on airline stock prices. In terms of the impact of global air transport of different scales, the impact of COVID-19 on international flights is much higher than domestic flights. Uncertainty is the main driving factor of many economic recessions, and the economic shocks related to uncertainty spread over time. These uncertain shocks may be caused by many factors, including financial crisis, terrorism-related events, disease outbreaks and natural disasters. Empirical economics research has already discussed the theoretical problems of uncertain shocks on macroeconomic conditions, and the increase of uncertainty often reduces the actual activities in the economy. The stock market is a barometer of economic development. The change of stock price can not only reflect the economic performance, but also predict the future economic development situation to a certain extent. The stock price may have structural change under the impact of uncertainty, and produce differences among different companies within the industry. Most studies often use the method of event analysis to study specific time points and build econometric models to quantify economic impact.

In addition to time uncertainty, the impact of public health emergencies on the airline industry and its subsequent survival are also related to its business model. Existing airlines are mainly divided into two categories: full-service airlines and economy airlines. Economy airlines are also known as low-cost airlines (Low-Cost Carriers). Low-cost airlines generally use a single-type fleet. The model can save the proportion of the number of aircrews and mechanics required by airlines. On the one hand, it improves the efficiency of daily operation and maintenance of the aircraft, and on the other hand, it saves human resources. Secondly, compared with the full-service type of airlines, low-cost airlines generally have no frills, that is, they generally do not provide passengers with in-flight catering and entertainment services or only provide basic beverages or snacks, thus eliminating the need for in-flight food heating equipment to make the aircraft cabin layout the space that becomes simple and free can increase the number of seats, and most importantly, it saves the company food procurement and labour costs. Therefore, low-cost airlines generally rely on cost advantages to implement long-term low-cost strategies on various routes and formulate looser ticket usage conditions. Due to the significant reduction in operating costs, the fares of low-cost airlines are generally lower than that of full-service airlines. The second category of civil aviation is full-service airlines. Full-service airlines generally have more than one type of aircraft. According to different sales and travel plans, there are different aircraft fleets for adjustment, and full-service airlines generally to provide differentiated services, in addition to some basic services including a certain limited baggage allowance, it will provide passengers with on-board catering and entertainment services, which greatly improves the comfort and happiness of customers. Full-service airlines tend to adopt hub-and-spoke route networks, establish the status of airport hubs, and use density economies and scope economies to form barriers to entry for other carriers that provide homogeneous products, including take-off and landing times, use of airport facilities, etc. All aspects have advantages. Generally, a wide and balanced domestic and international route network has been formed during the operation of full-service airlines for many years, and a balanced and complementary route network has been formed. Compared with economical airlines, they have absolute route advantages.

**Argentina**: The government suspended domestic flights in March 2020 during the beginning of the pandemic in the country and imposed restriction of international flights for several months. In June 2021, the government imposed a daily limit of 600 entries per day to prevent the entry of the [SARS-CoV-2 Delta variant](https://en.wikipedia.org/wiki/SARS-CoV-2_Delta_variant). On 3 July 2021, domestic flights resumed between some cities in the country.

 **Canada**: Canadians were advised to avoid non-essential travel on 13 March 2020, while Canadian border was closed except for Canadian citizens and permanent residents on 16 March ([Canada–United States border](https://en.wikipedia.org/wiki/Canada%E2%80%93United_States_border) closed later on 18 March). Essential travel is exempted, and international travellers must enter through [Calgary International Airport](https://en.wikipedia.org/wiki/Calgary_International_Airport), [Vancouver International Airport](https://en.wikipedia.org/wiki/Vancouver_International_Airport), [Toronto Pearson International Airport](https://en.wikipedia.org/wiki/Toronto_Pearson_International_Airport), or [Montréal–Trudeau International Airport](https://en.wikipedia.org/wiki/Montr%C3%A9al%E2%80%93Trudeau_International_Airport) with mandatory 14 days' quarantine. The border closure has been extended multiple times and remained closed until at least 21 August. Most transborder flights have been cancelled since late March due to the lack in demand. The prolonged international travel ban resulted in [Air Canada](https://en.wikipedia.org/wiki/Air_Canada)'s loss of C$1.75 billion in August and they have since urged for easing in travel restrictions.

**China**: Roughly two thirds of international flights to and from China were cancelled in February 2020. Flights between Japan and China saw a 60 percent reduction in traffic, while the US and China saw a reduction of 86 percent. Two thirds of domestic flights within China were similarly cancelled, numbering around 10,000 flights daily, while the ticket prices for remaining flights dropped [South China Morning Post](https://en.wikipedia.org/wiki/South_China_Morning_Post) reported that a seat for a three-hour flight between Shanghai and [Chongqing](https://en.wikipedia.org/wiki/Chongqing) cost as little as 29 Yuan (US$4.1). Passenger traffic between 25 January and 14 February dropped by 75 percent compared to the same period in 2019. Since 23 March 2020, all international passenger flights bound for Beijing are diverted to twelve designated first points of entry, under the [Civil Aviation Administration of China](https://en.wikipedia.org/wiki/Civil_Aviation_Administration_of_China) (CAAC)'s guideline. Since 29 March, all international flights to and from China are reduced, with flight limit. Since 4 June 2020, CAAC decided to allow more foreign airlines to operate passenger flights to China from 8 June, while "circuit-breaker" measures would also be implemented.

**Colombia**: Colombia ceased all commercial air travel at the beginning of the pandemic. Domestic flights resumed gradually beginning on 20 July 2020, Colombia's Independence Day, with a single flight of less than 200 km. [El Dorado International Airport](https://en.wikipedia.org/wiki/El_Dorado_International_Airport) in Bogotá reopened on 1 September with 38 flights.

**Denmark**: Passenger figures went down by around 99% in April 2020 compared to April 2019. This affected both domestic and international flights. Denmark closed its border to all tourism and other non-priority travel. Two noticeable cases were [Aarhus Airport](https://en.wikipedia.org/wiki/Aarhus_Airport) which had no passengers in April, and [Bornholm Airport](https://en.wikipedia.org/wiki/Bornholm_Airport) which had 16% as many passengers in April 2020 compared to 2019. On most domestic air routes car travel is possible with 3 to 4 hours' drive time, but Bornholm is an island where ferry and air is the only possibilities.

**Fiji**: In April 2020, [Fiji Airways](https://en.wikipedia.org/wiki/Fiji_Airways) suspended all international flights and the [main international airport](https://en.wikipedia.org/wiki/Nadi_International_Airport) in [Nadi](https://en.wikipedia.org/wiki/Nadi) was closed. As a result, the national airline terminated more than 700 employees. On 26 May, the government issued guarantees in support of FJ$450 million (US$208 million) worth of initiatives aimed at strengthening Fiji Airway's cash reserves.[[126]](https://en.wikipedia.org/wiki/Impact_of_the_COVID-19_pandemic_on_aviation)

**India**: Indian airlines are estimated to report a loss of US$600 million (not including state-owned [Air India](https://en.wikipedia.org/wiki/Air_India)) for the January–March quarter. The government of India is planning a rescue package for the aviation industry for as much as ₹120 billion (US$1.6 billion).

**Indonesia**: On 2 April 2020, Indonesia banned foreigners from entering their borders. Starting on 24 April, all passenger flights, except those carrying medical personnel/supplies or repatriating Indonesian citizens from abroad/foreigners from Indonesia, were banned. After implementing health guidelines, the ban on passenger flights was lifted on 7 May, starting with the resumptions of domestic passenger flights.

**Italy**: Due to the outbreak and the ensuing national lockdown, thousands of flights to and from Italy were cancelled.

 **Mauritius**: As from March 2020 all international flights to [Mauritius](https://en.wikipedia.org/wiki/Mauritius) was suspended. The national carrier, [Air Mauritius](https://en.wikipedia.org/wiki/Air_Mauritius) entered voluntary administration after making losses for quite years.

**Nepal**: From March 2020 to prevent the importation and spread of coronavirus infection, all aircraft including domestic and international (with the exception of humanitarian flights) were banned arriving in Nepal.

 **Pakistan**: The [Government of Pakistan](https://en.wikipedia.org/wiki/Government_of_Pakistan) had allowed domestic flights to resume, following suspension during the [COVID-19 pandemic](https://en.wikipedia.org/wiki/COVID-19_pandemic_in_Pakistan) on 16 May. Six days later, [Pakistan International Airlines Flight 8303](https://en.wikipedia.org/wiki/Pakistan_International_Airlines_Flight_8303) crashed in [Karachi](https://en.wikipedia.org/wiki/Karachi) from [Lahore](https://en.wikipedia.org/wiki/Lahore).

 **Philippines**: The National Economic and Development Authority projects a loss of at least 1.2 million tourist arrivals assuming that the pandemic persists by June 2020.

**South Africa**: [South African Airways](https://en.wikipedia.org/wiki/South_African_Airways) had been placed in bankruptcy protection in December 2019. However, with the pandemic leading to the complete grounding of all flights, and the government refusing to make more finance available, the airline is heading for a winding down process, or liquidation, depending on the outcome of negotiations with unions and workers on retrenchments.

**Turkmenistan**: From March 2020 to prevent the importation and spread of coronavirus infection, all aircraft arriving in Turkmenistan from abroad are redirected to the [Turkmenabat International Airport](https://en.wikipedia.org/wiki/Turkmenabat_International_Airport). Passengers arriving from outside of Turkmenistan are carried screened for signs of active infection, in particular, body temperature is measured. Visitors who are flagged during screening are transported to an allocated hospital. The airport medical center is equipped with personal protective equipment. After passing a medical examination, the plane, together with passengers on board, leaves for Ashgabat. Departures from Turkmenistan are carried out from [Ashgabat International Airport](https://en.wikipedia.org/wiki/Ashgabat_International_Airport). Persons authorized solely for diplomatic, official, humanitarian purposes are allowed to enter the territory of Turkmenistan.

**United Kingdom**: On 22 February 2021, UK's PM Boris Johnson announced that leisure travel overseas will not start until 17 May.

**United States**: Multiple airlines waived fees for flight booking changes and cancellations during the coronavirus outbreak following a request from Sen. [Richard Blumenthal](https://en.wikipedia.org/wiki/Richard_Blumenthal). Between 20 January and 7 March 2020, stock prices in US airlines decreased by 30 percent. Flight fares for domestic flights also dropped.

On 25 March, the [United States Senate](https://en.wikipedia.org/wiki/United_States_Senate) passed a bill that would allocate $58 billion in loans and guarantees to aviation-related companies, including $25 billion for passenger carriers and $4 billion for cargo carriers, plus $17 billion for companies "critical to maintaining national security", such as Boeing. The airlines accepting the package would be barred from increasing executive pay, issuing dividends, or buying back shares during the aid period. On 3 September 2020, the CEO of the lobbying group [Airlines for America](https://en.wikipedia.org/wiki/Airlines_for_America) said "We don't see it [demand] fully rebounding until 2024...Right now, we're fighting for survival."

**Vietnam**: Despite Vietnam's success in containing the epidemic, [Civil Aviation Authority of Vietnam](https://en.wikipedia.org/wiki/Civil_Aviation_Authority_of_Vietnam) (CAAV) said the aviation industry is in the worst situation in 60 years of development. Of the 234 Vietnam registered aircraft, more than 200 were grounded while airlines still have to spend hundreds millions dollars to maintain operations such as: aircraft leasing cost, paying for employee, aircraft maintenance and apron parking fee. [Vietnam Airlines](https://en.wikipedia.org/wiki/Vietnam_Airlines) estimates its 2020 revenues could decline by US$2.1 billion. This has seen as many as 10,000 employees of the national flag carrier, over 50% of its staff strength, taking unpaid leave. Duong Tri Thanh, CEO of Vietnam Airlines stressing that the carrier was going through the hardest time in its history.

**2.2** **Management and business strategies adopted by airlines and airports to navigate the post-pandemic environment.**

Airline business models have evolved over time adapting to the conditions of the regulatory framework and to the changing markets. One major change was produced by the liberalization of markets which started in the US in 1978 and, eventually, expanded to other markets worldwide (Doganis, 2010). This created the opportunity for new players to enter the market with different business model approaches, prominently, the low-cost model. Some of the characteristics of low-cost carriers (LCC) that distinguish them from the full-service network carriers (FSNC) have been the operation of point-to-point network instead of hub and spoke, uniformity of the feet, greater labour productivity, higher seat density, increased aircraft utilization and unbundled fares with ancillary services offered for a fee (Magdalina and Bouzaima, 2021). However, given the dynamic nature of the commercial air travel industry (Mason et al., 2013), the classifcation of airline business models in these two categories does not appropriately describe the reality of the market and the airlines that compose it. Some of the LCCs have over time adopted some of the characteristics of the FSNCs (Lohmann and Koo, 2013) and FSNCs have also been forced to use some of the strategies of the LCCs, such as selling ancillary services, to stay competitive.

In this regard, Mason and Morrison (2008) developed a product and organizational architecture approach (POA) that allowed to classify and compare airlines within a business model based on a number of variables representing their organization and operation. In a similar line, Lohmann and Koo (2013) suggested that, rather than classifying airlines in discrete categories, it is more adequate to place them in a continuum. This idea brought up the concept of hybrid airlines, which could be placed along a spectrum between the FSNCs and LCCs models. Further delving into the hybrid business model concept, Magdalina and Bouzaima (2021) conducted a study of European airlines in which, through a clustering process, they defned four categories: FSNCs, LCCs and two hybrid in between. Bachwich and Wittman (2017) also refer to the phenomenon of LCCs adopting practices that bring them closer to the FSNCs and, in a study on the US market, describe how this led to the emergence of ultra-low-cost carriers (ULCC) with a distinct business model. Although with different nomenclature, this approach is consistent with the idea of hybrid business models. In this case, the traditional LCCs have become the hybrid model and the ULCCs have flled the void at the end of the spectrum.

An additional phenomenon linked to the growing number of LCCs was the creation of airline-within-airline models. This was the response of FSNCs that created their own LCCs airline or brand within their company (Raynes and Tsui, 2019). However, although some of these airlines have managed to succeed for example in Europe (e.g. Transavia) or in Asia (e.g. Scoot), there has been a high failure rate. In the USA many of the legacy airlines unsuccessfully attempted this option, and currently there is none in operation.

The passenger air transport industry as it is today quite vulnerable to external factors (Gossling, 2020). Brown and Kline (2020) classify the exogenous shocks in three categories: macroeconomic events, insecurity and terrorism, and health and safety. The recovery of the sector after recessions created by these shocks has been widely investigated. However, there is no consensus on whether economic shocks cause transitory or permanent impact on the growth trends in the sector (Gudmundsson et al., 2021). The COVID-19 crisis provides an opportunity to further study the impact of external shocks in the industry. The academic consensus is that it is an unprecedented crisis (Gossling, 2020; Magda ¨ lina and Bouzaima, 2021; Scheiwiller and Zizka, 2021), which spurred research in different felds related to the industry (Sun et al., 2021).

The literature about the early stages of the pandemic focused on the impact of the crisis on airlines’ business models and strategies, and an immediate interest was in fact drawn to the initial responses of airlines. Albers and Rundshagen (2020) categorize these responses into four groups: retrenchment, preserving, innovating, and exit and resume. They also differentiated among the responses with a short-term focus from those with a longer one. Within these initial reactions, some attention was also given to the communication strategies during the crisis linked to reputational issues of airlines (Scheiwiller and Zizka, 2021). Other studies analyse what we can learn from this crisis in terms of managerial responses to exogenous shocks. In this regard, Amankwah-Amoah (2020b) provides a conceptual framework that distinguishes among internally generated and externally imposed strategic and tactical responses in the short and long terms. Additionally, Brown and Kline (2020) highlight the importance of environmental scanning in enhancing the ability to face external shocks and how airline managers missed forewarning of the risks of a pandemic provided by previous events such as the 2002-2004 SARS outbreak. Also on this issue, Linden’s work provides guidance to aviation managers on how to manage and prepare for external shocks based on a combination of short-term reaction with long-term planning (Linden, 2021).

Placing the focus on the long-term, some authors have addressed whether the COVID-19 crisis will have permanent effects and whether the crisis has provided an opportunity to transform the aviation industry in line with the requirements linked to societal challenges such as climate change. In this regard, Suau-Sanchez et al. (2020) identify structural aspects that will shape airlines’ medium and long-term actions. These structural elements include supply, demand, regulation and business ethics. For his part, Gossling (2020) ¨ provides a critical perspective of the airline industry pre-pandemic, stressing its vulnerability and dependence on state-aid, which has become even more apparent during the COVID-19 crisis, as evidence of the need for change. He also raises the existence of negative externalities linked to the industry such as the spread of diseases and the impact on climate change, and accordingly suggests that shifting towards business models that focus on proftability rather than revenue would allow to have more robust airlines with a smaller climate impact. However, AmankwahAmoah (2020a) warns of the risk of airlines and other industry players sidestepping environmental initiatives and the challenge in maintaining momentum for such practices in times of crisis.

Finally, considering the great dependence of airlines on public support during the crisis, another group of articles has focused on aspects related to the role of governments and how public policies affected airlines. Abate et al. (2020) analyse the factors that defne the willingness of governments to support airlines and the different types of support schemes. They also look into the implications of governmental support in terms of competition, ownership and the environment. Providing a complementary perspective, Akbar and Kisilowski (2020) refect on the complexity of nonmarket strategies of airlines in the COVID-19 context, which includes aspects related to compliance with governmental regulation, dependence on support schemes and legitimacy perception. Broadening the scope of the analysis, Macilree and Duval (2020) review the key policy issues in the industry in the postCOVID-19 era. Among these, they identify the key role of governments in the defnition of support mechanisms for the different actors in the aviation value chain.

Organizations have had to think outside the box to keep not only their customers, but their employees engaged and active, through the use of various technological advances. Adapting to the “new normal” is indeed overwhelming as people adjust to taking on other responsibilities that have been brought about by the global disruption experienced due to COVID-19. One such disruption has been the enforcement of virtual work environments, a situation where those who could work from home had to do so and had no choice but to adapt. People have had to rely on their ability to transform and adapt to these unprecedented changes and disturbances. The COVID-19 pandemic has also caused disruptions which have impacted people’s emotions and their emotional balance (Abdel-Fattah, 2020). The economic impact the world will have to endure or sustain post this pandemic is unknown. The pandemic has interrupted global markets and has brought with it a test of emotional resilience.

The COVID-19 pandemic has inflicted unprecedented damage on the global economy and has put severe strain on the financial system in many countries. The COVID-19 pandemic represents a massive macroeconomic demand and supply shock with significant adverse effects for global economic growth, employment, and poverty and demands an unprecedented response by national policy makers and international organizations. Its full magnitude and duration as well as its economic and social impacts remain difficult to predict. In Zambia, first COVID-19 (coronavirus) case was recorded in March 2020 and its cumulative impact on the SMEs has been significant. According to the Bank of Zambia, the country’s macroeconomic challenges and government arrears were already testing the resilience of the private sector even before the outbreak of COVID-19, with high treasury yields which led to crowding out lending to the private sector from 15.7% of gross domestic product in 2015 to 12.4% in 2019 (BOZ, 2020). In Zambia’s agribusiness sector, there has been a consumer demand reduction which is by far the biggest shock attributed to COVID – 19.

According Mutale (2020), agribusiness includes the processing, packaging and supply of high-value and traditional crops initially saw an uptick in demand after the border lockdown started. But there’s been a sharp fall in demand from the hospitality sector and reduced consumer spending as the crisis drags on. Firms in the agriculture sector have pivoted to cultivate basic crops such as maize and onion, which can be dried and stored, as well as poultry in order to cushion the impact COVID – 19 has brought on the agricultural sector. They have also taken the initiative to diversify into integrating digital platforms like Facebook and WhatsApp to launch home delivery services. The use of digital technologies has helped stabilize some of the revenue losses (CUTS, 2020). A survey conducted by CUTS on the impacts of the pandemic on Agro-processing plants in Zambia, indicated that certain companies which produce millet meal, porridge and sorghum meal, was temporarily closed during the initial months of the crisis and then was relocated to a larger facility to meet social distancing guidelines. New workers had to be trained and the cost of sourcing inputs from farmers who supply crops or livestock also increased (CUTS, 2020). According to the Bank of Zambia, most communications and content creation companies have integrated technology into field research and in outreach campaigns which have been a successful undertaking with regards to copying with the pandemic. This has been necessitated by the high costs of adhering to social distancing and other health guidelines. While the focus on public health sector has mitigated some of the immediate impact of COVID-19, the continued uncertainty makes it difficult to plan for the future (BOZ, 2020).

According to Woldometer (2019) unemployment will likely worsen if the risks associated with COVID-19 persists and containment measures are sustained or escalated. Surveyed businesses indicated they would lay off a total of 1,662 workers temporarily and 406 permanently if the threat of COVID-19 and associated containment measures persist for the next months. Applying sample weights obtained from Uganda Bureau of Statistics on these numbers, we estimate that 3.8 million workers will lose their jobs temporarily while 625,957 risk losing their employment permanently if the threat of COVID-19 and associated containment measures persists for the next six months. Such layoffs would constitute a reduction of 42 percent in temporary employment and 7 percent in permanent employment. Notably, over 75 percent of employees projected to lose their jobs permanent employment are from the service sector. Given most services in Uganda involve face-face interactions that contravenes the social distancing requirements, this finding is not surprising (Portes, 2019). The type of businesses that have been dramatically affected by COVID-19 in Somalia includes; travelling agencies, hotels, restaurants, cafeterias, shops, Khat sellers, road side businesses, hairdressers, supermarkets. An observation made by the researcher indicating that the items of the sanitary and hygiene kits’ prices increased as well as soap, shampoo, masks, and gloves’ prices are also increased due to dire demand and less supply especially masks and gloves (McKibbin & Fernando, 2020).

The coronavirus pandemic engendered a global crisis that, unlike most other crises in the world history, entails both supply and demand shocks. Worldwide, more than twenty million people have been infected as of August 2020, and due to lockdown measures, around 300 million fulltime employees have become unemployed or have had a reduction in work hours and pay (International Labour Organization, 2020). The pandemic has affected employment, investment, and growth prospects, and may result in permanent changes in consumption and work patterns (Baldwin , et al., 2020). Although both large companies and SMEs have been affected by the crisis, recent reviews (Balla-Elliott et al., 2020; Bartik et al., 2020; Dua et al., 2020; Lindsay et al., 2020; OECD, 2020) acknowledge that its effects are greater on SMEs. The OECD summary of 40 surveys in member states and partner countries OECD, (2020) reveals that more than half of SMEs have had substantial revenue loss and fear to be out of business within a quarter unless public assistance is available and extended over the duration of the crisis. There is evidence that SMEs are increasingly digitizing operations to adapt to changing circumstances, but temporary closures, employment and wage reductions, and bankruptcies have occurred. The most widely used policy instruments directed at mitigating the effects of the crisis are income and profit tax deferrals, loan guarantees and direct lending to SMEs, and wage subsidies (OECD, 2020). Small and Medium-scale Enterprises (SME) constitute the majority of businesses in Zambia and play an important role in employment creation and economic growth. The sector is estimated to account for 97% of all businesses in Zambia contributing 70% to GDP. Accounting for 88% of employment, SMEs also play a key role in society as they tend to employ a large share of the most vulnerable segments of the workforce (CUTS,2020).

The Consumer Unit Trust Report of 2020 indicates that SMEs face significant challenges in Zambia particularly in accessing finance thereby limiting their growth potential. In order to address this, the government through the 7NDP emphasizes the creation of a credit guarantee scheme for issuance of low interest, long-term loans to Zambian SMEs, as well as initiatives to accelerate informal sector formalization, foster skill development, create urban industrial clusters, strengthen value-chain linkages and provide business development services to SMEs. Considering the Covid-19, a survey conducted on 98 SMEs in March 2020, 93% of the respondents indicated that the pandemic has a negative impact on their businesses. Respondents indicated that they were most concerned about the implications that the pandemic would have on their sales, salaries and wages, and rentals (UNECA , 2020). In looking towards the future only 48% of the respondents indicated that they expected their businesses surviving through the pandemic and the rest either did not see themselves surviving or were unsure. The SMEs indicated that the top three ways that the government could assist them during this time was by offering tax exemptions, subsidies and grants. Given the importance of the sector to the economy it will be imperative for the government to put in place measures to protect SMEs, especially in the earlier identified sectors, during this time (BOZ, 2020). Academically, little is known about this pandemic which was discovered in China in 2019 (Chinazzi et al., 2020; Hopman, Allegranzi, & Mehtar, 2020; Kraemer et al., 2020; Wu & McGoogan, 2020; Zu et al., 2020).

This is not because education is not directly affected by the effect of the COVID-19 epidemic but rather because studies in education rarely incorporate effects of disease on the effective provision of education to learners across the globe. The rate at which COVID-19 has rapidly been spreading has made every sector of human life to immediately feel its impact (Sintema, 2020). COVID – 19 caused an indefinite closure of learning institutions in Zambia and this only gave little hope re-opening them soon for progressive education information dissemination especially for the examination candidates who were scheduled to sit for final examinations in 3 months and 6 months’ time respectively. According to Best and Kahn, individuals who earn daily wage for survival were the most affected in times of Covid-19 pandemic (Best & Kahn, 2020). Although the proactive measures taken by the government were successful at the initial stages to contain the spread to identified clusters and control was expected to reach a good level by early May to resume normal activities. However, due to fast spreading nature of the pandemic the number of infected cases are increasing further and it is difficult to predict normalcy once the people’s movements are relaxed. However, at present the spread is confined to identified clusters in quarantine centers and some security personnel who were involved in the operational activities and the virus is not socialized according to health authorities (Best & Kahn, 2020). Varshney & Vyas (2020) conducted a study on the potential impacts of the pandemic on the MSMEs in South Africa. The results of the study indicated that the effects Covid - 19 pandemic on MSMEs is significant in that 69% of MSMEs reported a decrease in business revenue generation since the beginning of the coronavirus outbreak. The predominant reason for a fall in revenue was a decline in consumer demand for the products (71%), followed by supply chain issues (15%). Interestingly, the study further revealed that about 14% of the MMSEs reported an increase in revenue – these were mostly businesses that dealt with essential goods and services, delivery of foods and household goods, and security.

Amin et al., (2020) also conducted a study in India to assess the short- and long-term effects of the pandemic on the access to finances by SMEs. The results indicated that access to working capital, by far, was the most cited requirement (71%) for businesses to grow and mitigate the adverse effects of the crisis.

Those who consider their business as an income source are more likely to identify working capital as the primary constraint (77%), compared to those who see it as an entrepreneurial venture (66%). According to respondents, the least necessary requirement thus far is access to qualified workers and digital literacy skills. Despite the need for working capital, 73% of respondents have been unsuccessful in raising funds for their businesses to manage the impact of the pandemic. A significant number of respondents (61%) have already tapped into their own savings for additional sources of funding, followed by another 36% who have approached family and friends for a loan. Moneylenders are a distant third source (13%), followed by banks (7%) (Amin, et al., 2020). The Ministry of Commerce, Trade and Industry on 3rd July 2020 launched the report of the Business Survey, undertaken with the support from the United Nations Development Programme (UNDP), to assess the impact of the Covid-19 pandemic on various businesses in Zambia. The results of the survey show that Covid-19 had a major impact on businesses in Zambia. Seventy-one percent (71%) of the respondents indicated that their businesses were partially closed while fourteen percent (14%) were totally closed. Only fifteen percent (15%) reported to have maintained normal operations (UNDP , 2020). The Education, Transport and Catering and Accommodation Sectors have been particularly impacted by Covid-19 while other sectors were almost not affected. Eighty-five percent (85%) businesses working in education reported were completely closed, while sixty percent (60%) of businesses in the human health and social work sector maintained normal operations (Ministry of Commerce, Trade and Industry, 2020).

The Survey revealed that the majority of enterprises are committed to continue operations by adhering to the new normal requirements to do businesses alongside Covid-19 threats. Enterprises have further resolved to adopt new development strategies by embracing and exploring new business models, accelerating technological, product and services innovation, and strengthening global reach of supply chain and expansion of overseas market. However, 7% of the total responding enterprises reported to have failed to cope with the epidemic and expressed their intention to withdraw from the market. The COVID-19 pandemic has been a unique crisis in that it simultaneously shocked firms through several channels: a supply shock (reduced labor supply as workers stay at home, unavailability of inputs, disrupted supply chains); a demand shock (reduced demand from laid off and homebound consumers, precautionary savings, investor caution); uncertainty (unable to count on a stream of future revenues that justifies replacement of workers or machinery for example); and the unavailability of finance which interact to create a downward spiral of firm activity. Consumers are postponing demand for non-essential goods and services, such as clothing, tourism, durable goods and so on. The fall in domestic demand directly hits domestic suppliers. But for firms in global value chains, consumer spending in high-income destination markets affects demand for their exports.

Consumption patterns in these countries has been closely following the virus transmission, fewer COVID cases restores consumer confidence and more cases erodes it (Chetty et al., 2020; Leer, 2020). Therefore, the duration of the demand shock facing firms in developing countries is tied to the health response both domestically and in developed economies. SMEs have been more severely affected by demand shocks than large firms in general; while they are less exposed to shocks to foreign demand in particular through exports (Baldwin , et al., 2020).

In Singapore, the government unveiled several measures to help businesses and SMEs amid the coronavirus outbreak. These measures include wage subsidies to help businesses keep their workers, deferment in income tax payments for companies and self-employed persons for three months, as well as cash pay-outs (World Bank , 2020). According to McKibbin & Fernarndo, (2020) firms received wage subsidies of between 25% and 75% for all local workers as part of the Jobs Support Scheme, and eligible self-employed persons (SEPs) were given three quarterly cash pay-outs of $3,000 each in May, July and October 2020, as part of the SEP Income Relief Scheme. To further ease cash flow for businesses, the government also announced the enhancement of property tax rebate (for qualifying commercial properties), as well as of various existing financing schemes including the Enterprise Financing Scheme’s SME Working Capital Loan, the Loan Insurance Scheme and the Temporary Bridging Loan Programme. The SMEs Go Digital Programme and the Productivity Solutions Grant was also enhanced (Abiad, 2020). In the private sector, Hong Leong Finance (HLF), Singapore’s largest finance company, rolled out Covid-19 Loan Relief Schemes to support SMEs and individual customers, and the United Overseas Bank (UOB) allocated $ 3 billion to provide companies financial relief in the forms of unsecured finance, overdraft facilities, and more (OECD , 2020). In Hong Kong, starting April, 2020, SMEs were able to tap into loans of up to $2 million that was fully guaranteed by the government of Hong Kong. The initiative was under the SME Financing Guarantee Scheme (SFGS) of $20 billion to ease the operational burden of SMEs, which was unveiled in the 2020-2021 Budget in February 2020. In the private sector, banks offered to delay repayments or extend loan tenors, and reduced their fees. Some are also unsecured loan products for SMEs and made special arrangements to expedite loan approvals (World Bank, 2020). In south Africa, a recent survey done by Retail Capital indicated that 69.8 percent (68.9%) of local small and medium enterprises (SMEs) were closed as a result of the national lockdown, with 85 percent reporting a decreased turnover. As such, the South African Government, big businesses and civil society have recognised the impact that Covid-19 is having on local small businesses and have implemented a host of relief packages (Reeves, et al., 2020). The Department of Small Business Development has introduced a "SME Support Intervention" which involved a Debt Relief Fund and a Business Growth/Resilience Facility to mitigate the impact of the expected economic slowdown on SMEs in South Africa.

Moghavvemi et al (2015) carried out a research on Factors Influencing the use of Social Media by SMEs and its performance outcomes on SME owners in Malaysia. The research was carried out to investigate the factors that influence Facebook usage on financial and non-financial performance of the SMEs. The results revealed that 61.4 percent of the SMEs do not use any other social media tools other than Facebook, while 38.6 percent of the SMEs reported that they do use other social media tools such as Twitter, Instagram and Blogs. The results also showed that Facebook usage had a positive impact on the Malaysian SMEs in terms of financial performance and non-financial performance such as cost reduction, enhancement in customer relations and information accessibility.

The factors such as compatibility and cost effectiveness of Facebook were found to be significant factors that influence usage in the organizations. Similarly, cost effectiveness was found to have significant relationship with Facebook. Since SMEs have limited financial resources, they can reach large numbers of audience through advertisements, promotions and campaigns on Facebook without huge investment. It’s observed in the above study a very good sample size was used but a poor response rate of 28% was received. The study placed more emphasis on one social media marketing tool which was Facebook. In this study various social media marketing tools that will be among the results will be analyzed. One other study carried out by Wamba and Carter (2014) on Empirical Study of Social Media Tools Adoption and Usage by SMEs and a web-based survey to SME managers was administered. The sample included the then current members of Business-to-Business (B2B) small businesses. Data were collected in Australia, the US, the UK and India with equal distribution. The study revealed that firm innovativeness, the size of the firm, manager’s age and industry sector have a significant impact on the adoption of social media tools by SMEs. The results of this study indicate that the firms that are open to new ideas and tools are more likely to utilize social media tools. Larger SMEs are more likely to use social media tools than smaller SMEs. Younger managers are more likely to adopt social media tools than old managers.

When it comes to industry sector, manufacturing companies are more likely to implement social media tools than the companies from other sectors. It is worth to note that the above study used a heterogeneous sample (population) in that data were collected in Australia, the U.S and India. With a low respondent turnout of 15%. They are from 15 various geographic regions and represent different economic and cultural backgrounds (e.g, developed and developing countries), and these factors are likely to give a wrong generalization about a whole bigger population. However, this study will use a sample from the same area. The above study used a web-based survey and obtained quantitative for its analysis. This study will employ a qualitative approach to data collection that will allow respondents to freely and accurately express themselves.

The use of social media by small and medium sized enterprises is beneficial to these enterprises but it does not go without challenges. Small and medium sized enterprises face challenges when using social media as a marketing tool some of the challenges presented by various researchers are as follows. Wess (2021) conducted a study in the USA titled as the 5 social media challenges for small businesses in which she suggested that many small businesses encounter the same social media challenges. In this study, 500 small business owners and managers were surveyed with the intent of determining the most prevalent social media challenges currently on the market in order to pave way for solutions and learning. The findings of this research showed that 93% of small businesses struggle with many social media challenges, she explained in the research that some different challenges come with a different type of social media tool. For instance, the research showed that 19% of small businesses using Instagram mostly struggle with gaining new engaged followers, 32% of small businesses on LinkedIn have a challenge of generating high quality leads whilst on tik tok 17% of small businesses also experience difficulty creating content that will be able to engage a rapidly growing platform.

Wess’s research leaves a gap because this research is solely based on Small businesses in the USA and so our research needs to carry out a research in order to determine if these are the same challenges also being faced by SMEs in Lusaka today. Choi et al (2014) conducted a research titled “the social media implementation by SMEs: overcoming the challenges of measurement.” in this research it was proposed that SMEs face the challenges of social media measurement. Social media management is understood to be an essential part of any social media campaign that uses metrics to help determine how you are performing on social media. However, many SMEs fail to execute social media measurement due to many factors such as financial resources, lack of market information, lack of expertise and also lack of support as supported by (Fillis 2002; Gilmore et el 2006). The analytical evaluation report collected from the consultancy agency identified challenges that prevent social media measurement such as unplanned approach taken by SMEs, lack of social media marketing expertise, inadequate resources and also lack of enough data by SMEs.

Prenaj 2016, in the study of social media as a marketing tool for SMEs: opportunities and challenges bring out some of the challenges that SMEs face when using social media as a marketing tool. The research points out that the effective use of social is also a challenge that SMEs face because SMEs may use social media ineffectively whereby SMEs may tend to overuse advertising, trying too hard for sales which may be seen badly by the audience. The other challenge mentioned in his research is the complexity of social media such as privacy, security, intellectual property, employment practices or other legal risks that theses SMEs need to understand when they engage in the use of social media to avoid violation terms provided by the media. (Mosha, 2019) Conducted a study on the use of social media network on small and medium sized enterprises in Tanzania in which one of the objectives of the research was to identify the challenges of using social networks on the SMEs in Tanzania. This study used a sample size of 75 SMEs located Dar-es-salaam. some of the challenges that are faced by SMEs in the use of social media as identified in this study are high frequency of network breakdown, government regulations on social media, incompliance with business culture and also identified that lack of ICT skills is also a major challenged faced by SMEs when initially the efficiency of social networks by SMEs on the goodness of the ICT infrastructure. Chan (2015) Brings about some challenges SMEs face in his research titled 5 social media challenges faced by SMEs. One of the social media challenge discussed is choosing the right social media platform. This is because social media offers a wide range of social media platforms to choose from and can be overwhelming to the business owners. This makes it complicated for SMEs to know which social media platforms are best for them. The types of social media include: social networks (Facebook, Myspace, and LinkedIn), micro-blogs (Twitter, Plurk, and Friend Feed), reviews and ratings (Yelp, Amazon, and Trip Advisor), video (YouTube and Vimeo), and more. Business.com (2010).

Beese (2016) also adds that choosing the right social media platform is tricky because it all comes down to your target audience but amassing hundreds of followers on a social media platform doesn’t necessarily mean you have an audience because there are abandoned, idle and fake accounts to consider. So this poses a challenge for SMEs to select social media platforms in which they can engage with the target audience and are effective enough to get the job done. Attracting new customers is also one of the challenges that SMEs face when using social media says Willmet (2019). In his report, he includes empirical literature form a research by Statasia where 79% of UK SMEs stated that their toughest challenge was attracting new customers. He also recorded that another challenge SMEs face is embracing technology because although most businesses have welcomed technological advancement in the past few decades some SMEs still struggle with embracing these new technologies. Therefore, it is really important for every SME to understand the downside that exits when using Social Media Marketing. In general, Social Media Marketing is a really useful and powerful marketing tool that not every SME knows how to use properly yet, especially those in emerging countries. It is still very new way of marketing to lesser developed countries like Zambia and it needs to be implemented through a real and concretely defined strategy. It is also imperative to understand that social media as well as its challenges is an evolving topic and evolves due to many factors such as technological advancements, technological knowledge of users.

It is therefore important to carry out this research even though past studies have been made to see if the challenges being faced by SMEs in the use of social media are static or evolving especially even under different operating contexts such as the Covid-19.

To this effect, the Department made over R500 million available to the Debt Relief Fund, and the SME Finance Scheme will comprise of soft-loan funding for a period of 6 months from 1 April 2020. The Business Growth/Resilience Facility provide working capital, stock, bridging finance, order finance and equipment finance to small businesses which supply in-demand medical supplies. Furthermore, the Department of Tourism has made an additional R200 million available to In Zambia, the government approved K8 billion kwacha ($439 million) economic stimulus package financed through a COVID-19 bond in an effort to alleviate the pandemic’s impact on SMEs. The government also announced a waiver of tax penalties and interest on outstanding tax liabilities resulting from the impact of COVID-19. The Zambia Revenue Authority (ZRA) issued guidelines on the period of relief, waiver qualification criteria and other related modalities. The Bank of Zambia, the country’s central bank, announced a series of regulatory relief measures for the banking sector. These relief measures are intended to encourage banks, in turn, to provide financial relief to their borrowers (SMEs) (BOZ, 2020).

He & Harris (2020) observe that, when the pandemic hit, many companies working in the manufacturing, telecommunication, retail, and banking sectors have proactively engaged in various CSR activities. Such activities include producing and donating ventilators, personal protective equipment, and hand sanitiser; making medical gowns free of charge for NHS; introducing access to unlimited mobile data for vulnerable pay-monthly customers; allocating opening hours, particularly for the elderly and NHS workers; donating food to food banks and charities; offering free practice lessons to children and their parents around the world; and waiving interest on overdrafts for personal banking customers for a fixed period (He & Harris, 2020; Rodriguez & Talman, 2020). However, the global pandemic has also created dramatic and unprecedented challenges for employees, and we have seen sudden and large-scale unemployment. For example, about 47 million Americans have filed for unemployment as the pandemic took its toll (Rushe, 2020) – many job losses the US has not seen since the Great Depression (Aratani, 2020). LouisPhilippe et al. (2020) examine the short-term consequences of COVID- 19 on employment and wages in the US and find that the pandemic increased the unemployment rate, decreased work hours, and increased labour market inequalities.

**2.3** **Marketing and communication strategies employed by airlines to regain passenger confidence and stimulate travel demand in the post-pandemic era.**

The COVID-19 outbreak has caused airlines to adapt their marketing strategies and focus on different aspects than before the pandemic. In order to protect passengers and respond to their needs, nowadays the emphasis lies in offering a virus-free travel experience. The current focus of airline marketing is on high cleanliness standards and sanitizing efforts. The marketing specialist Pavel Bogomolov (2020) explains the necessity to inform passengers about the presence of the so called HEPA filters in the majority of aircrafts. The purpose of these systems is to filter the air on board during the entire flight (Bogomolov, 2020). The presence of air filters onboard of an airplane has gained importance since the beginning of the pandemic. An air filtration system in the cabin is implemented in nearly all passengers aircrafts. These are known for effective replacement of air in the cabin taking place in regular intervals and for minimizing the risk of virus contamination (Congressional Research Service, 2020). The reintroduction of air traffic depends to a certain extent on the perceived probability of COVID-19 transmission inside an aircraft (Bielecki et al., 2020). According to studies performed on the probability of getting infected by COVID-19 on board of an airplane, assuming that all regulations are strictly being followed the risk is considered to be minor. This also applies for a scenario when there is an infected person among passengers (Bielecki et al., 2020).

A recent experiment on the in-flight COVID-19 transmission during a long-haul flight has revealed that travelers wearing surgical masks are less probable to get infected with the disease (Nir-Paz et al., 2020). The Harvard T.H. Chan School of Public Health (2020) points out the importance of wearing face masks while traveling by air (Harvard T.H. Chan - School of Public Health, 2020). They are highly protective for individuals who spend time in aircraft environment or at airports and should be used during the entire journey. The combination of wearing face masks, keeping distance and sticking to hygiene standards can reduce the likelihood of disease transmission (Harvard T.H. Chan - School of Public Health, 2020). These findings are supported by WHO (2003) and extended with the recommendation to perform temperature checks for both travelers and staff (WHO, 2003). WHO (2003) also emphasizes that everyone who shows symptoms similar with COVID-19 is supposed to reschedule the journey by air up to the point of recovery (WHO, 2003).

Further air-travel related measures include RT-PCR and rapid antigen testing. In both cases, the purpose is to detect the presence of COVID-19 among passengers early enough. Based on the specific requirements of a country, airlines require travelers to hold a negative certificate in order to approve their arrival. In case of the RT-PCR test, the evidence is very accurate but only available after several hours (European Centre for Disease Prevention and Control, 2020). Even though the specific travel requirements may vary, currently above 100 countries enforce the so called RT-PCR certificate from people traveling by air. This test must indicate a negative result and it cannot exceed the maximum time limit of validity, that the individual country has decided on, which is mostly between 48 and 96 hours (Bielecki et al., 2020). A rapid antigen test delivers a result within a couple of minutes and can be done for instance, directly at airports. Another measure of preventing infectious cases to spread the disease in a country is the introduction of mandatory quarantine for incoming passengers (European Centre for Disease Prevention and Control, 2020). In some selected regions it is the case that - in order to prevent the need for quarantine - next to a COVID-19 test done before the journey an additional test must be provided after arrival in the final destination within a pre-specified period of time (Pitrelli, 2020). A study has been performed on the effectiveness of conducting routine asymptomatic tests for airline travelers. The recommendation resulting from the research is to give rise to testings and quarantine after returning back to the home country. This appears to be especially important when travelers are coming back from an area with high incident rate (Kiang et al., 2021). Despite of the fact that the Antigen test method delivers a result within shortest period of time, it does not replace a PCR certificate and therefore cannot be used in order to enter a country in most of the cases (Bielecki et al., 2020).

A combination of testing for COVID-19 and mandatory quarantine is also a frequent approach in fighting against the pandemic. Measures that bring the most serious implications for the aviation sector are travel bans and border closures. These have proven to have catastrophic consequences for the financial stability of the air traffic industry (European Centre for Disease Prevention and Control, 2020). The procedures prior, during or after a flight are implemented to help the industry to restart its operations. Before being accepted on a flight, travelers might be asked to fill out a health declaration form. As proposed by ICAO (2020) these forms can raise the confidence of travelers and countries. The process of submitting such form might be facilitated through e.g. an application (ICAO, 2020).

In addition, guidelines on systemic boarding are increasingly being adopted by various airlines. In this way, they intend to mitigate the health risk exposure of travelers. A sequential mode of boarding is a method adopted and currently applied by several airlines. This can for example consist of travelers who were assigned a window seat to enter the aircraft first, or systematically enter from back to front (Milne et al., 2020).

By any measure, the COVID-19 pandemic massively disrupted the world's aviation industry, so that the industry has had no option but to find ways to adapt to and deal with and survive this crisis. The actions that the aviation industry has taken in response to the pandemic and the actions that they are planning to make, or may make in the future, were discussed by a number of presenters. This chapter describes those discussions. Josh Cohn, the director of airport planning at InterVistas, put this in context. “Aviation really isn't a stranger to disruption,” he said, mentioning such things as the changes brought about by the 1958 invention of the modern boarding bridge, which revolutionized how passengers got on and off airplanes how terminals were designed; the 1970 introduction of the Boeing 747, which, by transporting 300–400 passengers, allowed international travel to grow on a large scale and created the need to process passengers faster as they came back into the country; the 9/11 terrorist attacks, which revolutionized approaches to security; and the introduction of the Airbus 380, which, because of its size and weight, forced designers to rethink how airfields works, how aprons work, how thick the pavement needs to be, how the plane's larger wing clearances would effect movement onto the runway, and how to get passengers from a double-decker jet to the terminal. “Maybe it's the eternal optimist in me,” Cohn said, “but I think what we've seen in the industry over the last 60 years has brought opportunity for new ideas and ways to make the industry better.” Several speakers provided details on how airlines responded to the COVID-19 pandemic. Laurie Garrow, co-director of the Center for Urban and Regional Air Mobility at the Georgia Institute of Technology, provided a broad overview of the response of airlines to the pandemic. David Garrison, senior vice president for corporate safety, security, and compliance at Delta Airlines, described Delta's approach to handling the pandemic. Michael Delaney, the chief aerospace safety officer and senior vice president of global aerospace safety at Boeing, and also a member of the workshop planning committee, described what actions Boeing took in response to the pandemic and, in particular, the establishment of the Confident Travel Initiative. And similarly, Stefan Roemelt, senior vice president of engineering, cabin and cargo at Airbus, offered an overview of Airbus's response to the pandemic.

The pandemic started out as a sanitary crisis and then became a financial crisis, Roemelt said, but it also created a trust crisis in which people did not trust that it was safe to travel on commercial airlines. Thus Airbus created a program called Keep Trust in Air Travel to help airlines regain and maintain the trust of the people who fly commercially. How could such trust be regained? Because Airbus is an engineering company, Roemelt said, “We need to talk with facts, with scientific proof.” So it set out to find ways to block viral transmission on aircraft through the air and surfaces and to prevent the virus from getting on the plane in the first place. It did this in collaboration with other OEMs through the International Coordinating Council of the Aerospace Industries Association. And Airbus used its customer experience teams, which usually do such things as present and explain new cabin layouts to its airline customers, to share information about Airbus's pandemic efforts and also to listen to its customer's pandemic-related problems. As an aircraft manufacturer, Airbus's main focus in the Keep Trust in Air Travel program was the aircraft, with initiatives aimed at such things as disinfection and airflow, but the company realized that regaining trust also involved other aspects of air travel, such as the airport, the people (not just passengers and flight crews but airport employees and others), and even the broader society. But Airbus's major strengths are engineering-related, he said, and so most of the company's response to the pandemic involved the engineering of ways to make air travel safer. As an example, Roemelt described Airbus's work on ways to clean the cabin in order to minimize the risk of viral transmission. The company's researchers chose five disinfectant methods that have been shown to have some effect on the virus: fogging and spraying, thermal methods, hydrogen peroxide, UV light, and “apply and wipe off.” This last method, which involves applying disinfectant and wiping it clean with a towel, is the standard method used on airplanes but which has been shown to be very efficient. They then assessed each of those five methods in four areas: efficacy against the virus; material properties (e.g., what effect does it have on the color or flammability of a material in the cabin?); how much time and effort is required; and effects on the health and safety of workers, crew, and passengers. After some initial studies, the researchers carried out studies in a mock-up of an aircraft cabin located in Hamburg, Germany.

Working with the Fraunhofer Institute, the researchers applied a surrogate virus in the mock-up and then tested the various disinfectant methods to see how well they removed the virus from surfaces, particularly those surfaces most likely to be touched by passengers and crew. Depending on the method used, Roemelt said, they found efficacy in removing the virus of 99 to 99.99 percent. With the resulting information on efficacy, time requirements, material effects, and safety, he said, Airbus can offer its customers disinfectant methods that are tailored to their particular operational needs. Moving to Airbus's efforts on cabin ventilation, Roemelt said that the cabins of aircraft made by Airbus and other major manufacturers provide clean air by design. In particular, the cabin in an Airbus aircraft has a constant injection of fresh air, and the air is fully renewed every 2 to 3 minutes. The air is pushed through hospital-grade HEPA filters that remove more than 99.9 percent of particles in the air. Furthermore, top-to-bottom air flows limit mixing between rows, and the backs of seats act as additional barriers to mixing. To understand the risk of viral transmission in an aircraft cabin with an infected person, Airbus engineers worked with a computational fluid dynamics model of air flow within a cabin. They modeled the air flow in a portion of a cabin that included the row in which an infected person sat as well as two rows in front and two rows in back. It was an extremely detailed simulation, he said, involving 50 million data and 1,000 successive calculations to represent just one second of air flow. The question posed was this, If an infected person coughs and expels 10,000 droplets and aerosol particles—a number drawn from the literature—how many of those will reach a person sitting in the next seat? The calculations assumed that both people are wearing masks. If so, the model predicted that the combination of the masks, gravity, and air flow would reduce those 10,000 droplets and aerosols to just 5 that reach the other person. In short, Roemelt said, the cabin's air flow combined with masks and the effect of gravity create a safe environment.

Finally, Roemelt spoke about Airbus efforts to model approaches to make air travel safer that extend beyond the aircraft. “We are not necessarily medical experts,” he said, “but we are experts in how to simulate the risk in flight safety.” In particular, Airbus has developed various models for how to rate a risk and how to prevent a risk, and the company has combined this knowledge with inputs from medical experts to create an end-to-end risk assessment that covers a passenger's entire journey. At each step on that journey the model examines the effects of, say, testing or quarantine on the risk. That assessment model is available from Airbus, he said, for anyone who is interested in modeling the effects of different measures. While it is still being honed, the first results of the simulations have been very promising, he said. It shows “what can be done if you release the engineering power of an engineering company.”

Two speakers described how airports responded to the pandemic. Ivan Bassato, the executive vice president of operations at Aeroporti di Roma, the company that manages the two airports in Rome, Italy, focused on how the pandemic affected those airports and their response. And Cristian Panait, a medical expert with the aircrew and medical department with the European Aviation Safety Agency (EASA), gave a broader look at how European airports dealt with the pandemic. The larger of the two airports operated by Aeroporti di Roma, Rome Fiumicino, is Italy's major airport, with about 100 airlines connecting Rome with more than 200 destinations. It is a major hub airport in Europe, Bassato said, with flights to more than 50 long-haul destinations, including 12 in China. It has about two dozen daily departures serving the U.S. market. It was named the best airport in Europe in 2018, 2019, and 2020.

Italy was the first country in Western Europe to experience the outbreak of the COVID-19 pandemic, Bassato noted. The first case was transmitted locally in mid- to late February 2020, and the country was under a national lockdown from March 9 to May 4. After that, the lockdown was gradually lifted, but mask mandates and social distancing remained in place. A second wave arrived in October and peaked in November. As with the rest of the world, Bassato said, the impact of the COVID-19 pandemic on airport operations in Rome was huge. The number of passengers using the Fiumicino international airport dropped from 43.5 million in 2019 to just 9.8 million in 2020—a total that had not been seen since the 1960s, the first era after the construction of the airport. There had been a mild recovery in the number of passengers over the summer, but the second wave that hit Europe and much of the rest of the world in the fall of 2020 pushed those numbers back down again, and the number of passengers using the airport in January 2021 was down 89 percent from a year earlier. Aeroporti di Roma's strategy for responding to the pandemic is built on three pillars, Bassato said. First, as a pre-requisite to restoring air connectivity, it is essential to have biosafe airports and air travel. Second is the creation of clean corridors where all passengers are tested before departure as a safer alternative to “trust-based quarantines.” And the third is the extensive digitalization of the protocols and processes that have been put in place.

Going into more detail on each of these three pillars, Bassato first described what Aeroporti di Roma did to ensure a biosafe airport. It begins with strict implementation of the new COVID-19 regulations promulgated by various agencies and organizations. For Roma airport authority, this includes the Italian government's COVID laws, the European Aviation Health Safety Protocol, and the Italian Civil Aviation Authority's guidelines for operators. In addition to that, Aeroporti di Roma looked to stimulate innovation and create best practices that respond to the COVID-19 challenge. Doing so, Bassato said, meant reengineering all of the airport processes to meet health safety requirements, setting up a standing “COVID innovation lab” for quick adoption of new technologies being made available by industry, continuous communication with the public, and using models of the airport to make sure any new set-ups maintained health safety. In addition, the new airport set-up was subjected to third-party certification. In practice, all of these changes resulted in an airport that looked very different from a year earlier, Bassato said. Dozens and dozens of changes were made, including a collection of ubiquitous light-blue signs that instruct those in the airport on the new procedures they need to follow. There are social distancing and mask requirements, more than 300 gel dispensers scattered around the airport, UV light disinfection of security trays and escalators, terminal entry restrictions, the chemical disinfection of hold baggage, touchless self-boarding, sanitization booths, sanitizing robots, masks in vending machines, and much more. According to surveys, passengers passing through the airport are satisfied with the steps the airport has taken, with 99.6 percent of them saying they felt safe at the airport. The passengers have also mostly abided by the safety regulations, with 98.1 percent of them wearing masks correctly and only 1.9 percent wearing them incorrectly, and 90.1 percent of them keeping a social distance of 1.5 meters (with Italian law recommending 1.0 meters). Moving to the idea of clean corridors, the second pillar, Bassato said that experience has shown that it is not sufficient to rely on airport passengers self-quarantine. Some infected people will still get on airplanes and put others at risk. So in 2021, many European Union countries began to institute pre-departure testing, but not in a coordinated manner; some countries requested molecular or antigenic tests, some only molecular tests, some both molecular and antigenic tests, and so on.

In light of this, Aeroporto di Roma has proposed the establishment of “clean corridors” for air travel. To carry this out, all passengers from certain critical areas would need to have a negative test before boarding an aircraft; what constitutes a “critical area” would be based on certain predetermined criteria or in response to a contingent situation, such as the emergence of new variants in an area. In particular, the idea of clean corridors is to make sure that everyone who boards an aircraft is healthy, which would then obviate the need to test passengers when they deplane at their destinations, so that healthy people can travel unimpeded. Aeroporti di Roma has taken several steps to lay the groundwork for such clean corridors, Bassato said. The Fiumicino airport now has three testing facilities within the airport that offer rapid antigen detection tests to arriving passengers, with a capacity of 5,400 passenger tests a day. There is also a major drive-through testing facility in the airport's long-term parking lot. More to the point, there was a pilot program that ended January 31, 2021, that was set up to demonstrate the idea of a clean corridor. Working with Alitalia, Aeroporto di Roma set up COVID-tested flights on the Rome-to-Milan shuttle. Every passenger had to either take a rapid antigen test at the airport or show a medical certificate with a negative COVID test (molecular or antigenic) performed within 72 hours of the flight. The purpose was to demonstrate the operational viability and overall effectiveness of the clean corridors proposal. As a further test of the concept, there have been clean corridor flights into the Rome airport from New York City (via Alitalia) and from Atlanta (via Delta). The passengers must have had a negative COVID test within 48 hours of boarding and take a rapid antigenic test upon arrival in Italy, but once in Italy they are not subject to the usual quarantine but are free to move around.

The pre-flight testing was very effective in preventing infected passengers from boarding the flights from the United States to Italy, Bassato said. Out of 3,867 arriving passengers, 18 tested positive with the rapid antigen test upon arrival, but only 5 of those had the infection confirmed by PCR, or molecular, testing. Thus only 0.13 percent of the passengers on the flight were potential sources of infection. Surveys found that 90 percent of the passengers would recommend flying on these COVID-tested flights, and the number of passengers flying on these routes increased significantly after the new COVID-tested flights were offered. The World Tourism Organization of the United Nations has endorsed this pilot project, Bassato said, regarding it as the most viable strategy to restart tourism around the world. Concluding with the third pillar of the strategy, Bassato spoke briefly about the digitalization of health protocols as a way to move the clean corridors strategy forward. Since January the Aeroporti di Roma has been carrying out a trial study of an “AOK Pass” app, which serves as a digital health pass. In particular, passengers on the Rome-to-New York route can get a “digital negativity certificate” by taking a rapid antigen test at the airport. This certificate is carried with the AOK Pass app and used to speed up boarding and other processes associated with a passenger's COVID status. With these three pillars, Bassato said, the hope is that air travel that is both safe and convenient can be reestablished in the near future. Panait began by explaining that EASA has a function in Europe much like that of the Federal Aviation Administration in the United States, that is, it is the European regulator for aviation safety. In response to the COVID-19 pandemic, the main document EASA published is COVID-19 Aviation Health Safety Protocol, which provides guidelines for the management of airline passengers in crew relative to the pandemic.

Debilitated by COVID-19, airlines are preparing to cut more than 30,000 jobs as soon as next month. The CARES act, passed in March, included $32 billion for passenger airlines, cargo carriers, and contractors to maintain a set level of service and prevent job and pay cuts, and politicians have been debating further aid for the industry. We asked Prof. Kevin Williams to explain some of the economics of air travel and how the industry can survive in an age of stay-at-home orders. Most air carriers offer different types of tickets, and this will immediately impact how much you pay. Think economy class versus first class. Over the past decade, there have been substantial changes to economy tickets. We’ve seen a “de-bundling of the bundle.” Historically, an economy ticket got you a seat assignment, a free checked bag, etc. Low-cost carriers were the first to offer basic fares that did not include these characteristics. This created downward pressure on prices for more traditional airlines who were still offering the bundle, but now at lower prices. These carriers eventually responded by creating basic fares. We’ve also seen some airlines create premium economy seats. Hence, airlines offer tickets of different qualities.

When you buy is important for two reasons. Most airline tickets have advance purchase (AP) requirements, which means that the price depends on the number of days before departure. The most common are 7, 14, and 21 days before departure, but they can vary by market. Here is an example. Suppose the 21-day AP fare is $250, and the 14-day AP fare is $275. What this means is that if you do not buy your ticket 21 days before departure and check back the next day, the ticket will now be $25 more expensive. Average prices go up (by a lot) as AP fares expire, so my advice is always to book early. However, I don’t think you need to book too early—there is some evidence that fares are U-shaped, with the lowest fares being offered around maybe 120-140 days before departure. Several travel websites provide suggestions on when to book tickets, and you may have seen “Buy now” or “Wait” suggestions online. There is another reason why when you buy matters. Fares also depend on how full the plane is. Airlines are constantly updating prices based on current bookings and updated forecasts. If bookings are lower than expected, prices may fall. This makes sense: why have a plane go out at half capacity when lowering the price would fill more seats? So if you happen to be looking at a flight that is underperforming, the price may go down tomorrow or in the future. This is commonly referred to as revenue management.

By “when you fly,” I mean seasonality and related factors. Many airline markets have predictable fluctuations in demand: Winter in the U.S. typically means full planes and high fares on flights to Australia. Weekend flights to Ft. Lauderdale are full because of cruise ships. Thursdays and Fridays are busy for many business markets. This will affect prices.

Where you go is also important. Los Angeles to Bangkok typically has much lower prices than Los Angeles to Singapore because of differences in business versus leisure traffic. Nonstop flights may or may not be cheaper than connecting itineraries. However, where you fly also means, who can you fly? The number of competitors in a market can have a big impact on prices. There is evidence that more competitors flying a route is associated with prices not increasing as much over time. COVID-19 has had an enormous impact on the travel industry, and the drop in passenger traffic has been significant. In April, airlines were reporting load factors (percentage of seats occupied) in the single digits. There has been some recovery since hitting bottom in mid-April. As of the end of September, the number of passengers departing U.S. airports is about 30% of what it was during the same time last year.

We’ve also seen a huge decrease in supply. Airlines have slashed schedules and are operating 30-50% of the flights they usually operate. We’ve seen airlines announce the temporary or permanent retirement of entire fleets of aircraft. For example, Air New Zealand announced they will not be bringing back their largest international aircraft until September 2021 at the earliest. Delta announced the retirement of their largest planes in May.

Low demand means lower prices, and some industry reports are suggesting fares are down up to 40%. There has also been a change in the composition of the demand. Airlines have seen some recovery in leisure traffic, but not in business traffic. There is also a question of what airline networks will look like going forward, and this is a particularly relevant question now. The CARES Act provided billions of dollars in assistance to the airlines, with the requirement that if an airline accepted assistance, it would be required to maintain service to all of its markets and not lay off any staff until October 1. New Haven is a good example. Before March, American offered several daily flights to New Haven. By accepting funds through the CARES Act, American had to maintain at least once-daily service to New Haven (they reduced service to a single flight to Charlotte). American stopped (at least temporarily) service to New Haven on October 7. Airlines are part of a larger economic sector that has been significantly impacted by COVID-19, and I believe any discussion of government aid should consider transportation more broadly. Airline demand is not expected to fully recover for a few years. Therefore, airlines should downsize, and we are seeing this take place now. Airlines have reduced cash burn throughout the summer. I believe demand may increase (slightly) as airlines and airports roll out rapid testing centers. This may also result in increased international traffic as some countries allow for testing out of required quarantines.

**2.4** **Changes in customer behavior and preferences in the aviation industry following the COVID-19 pandemic, and strategies for airlines to adapt and cater to the evolving needs of travelers.**

There are several aspects that directly influence the travel behavior of people and their intentions connected to going abroad in times of a pandemic. The anxiety arising from the potential risk of getting infected with COVID-19 outside of the home country is seen by many of them as a major threat. The assessed level of risk typically varies by the end-destination and its current situation related to the pandemic (Abdullah et al., 2020). The various regulations require from people to change or adjust their behavior. To comply with the new standards, the advice given to citizens of multiple countries has been to not leave their homes, make sure to keep distance from other people in public areas and pay increased attention to hygiene rules (Fischer et al., 2020). Regardless of the purpose for traveling, an on-going pandemic is a valid reason for many travelers to either postpone or completely cancel their plans. The demographic factors are likely to determine this self-protective attitude pattern of travelers. Destinations of medium to high severity in regards to the spread of e.g. the coronavirus are being largely avoided (Abdullah et al., 2020). There has also been a notable reduction in long-haul flights but the perceived risk exposure towards contamination with COVID-19 has declined the more frequently people have travelled (Truong & Truong, 2021).

Since the virus outbreak, the flow of tourist arrivals decreased significantly across the globe. Major transformations have occurred in preferences on where to travel and in terms of the preparedness to leave the home country. Nowadays, secure countries that have fewer tourists coming in are increasingly being favored. At the same time, prices are playing a less important role in the process of searching for the ideal holiday location (European Commission, 2020). Decisions on traveling to a place within the own nation are also more frequent. When considering going abroad, tourists are mostly seeking for regions that are coping well with the pandemic situation (European Commission, 2020). The travel behavior in pandemic times is notably determined by the existing fear of an individual traveler, resulting in lowered frequency of traveling. Next to the intention for traveling, changes in the behavior might also be visible when looking at the travel distance. Both the distance and frequency of traveling are likely to be reduced as a consequence of a pandemic (Abdullah et al., 2020). As suggested by Abdullah, Dias, Miley and Shahin (2020), the priorities of people when pursuing a trip are likely to change in times of a pandemic. For instance, they focus more on hygiene measures, as well as on keeping distance from other people and the usage of masks. This shift towards cleanliness and sanitation are accompanied by paying less attention than usually to the financial aspect and comfort while traveling (Abdullah et al., 2020).

A study has been conducted by Graham, Kremarik and Kruse (2020) on the intention of people aged 65 or above to travel by air in the near future, as well as on the aspects that contribute to their final decision. Quarantine requirements and infection numbers in the respective country turned out to be the key factors for decision-making (Graham et al., 2020). The findings show that roughly 60% of participants are planning to travel less in the following months. An important result is that one in five respondents of this age group would consider different means of traveling than by air. Moreover, measures on social distancing and frequent cleaning of surfaces seem to be the highest priority for a safe travel experience for this age group (Graham et al., 2020). A study by Abdullah, Dias, Miley and Shahin (2020) also implies that the willingness of older generations to postpone their trip is reasonably higher than among younger people. Their avoidance behavior could have been already observed in the past during pandemic outbreak related to diseases different than COVID-19 (Abdullah et al., 2020). The current travel behavior of passengers is also likely to be influenced by media and the image that a travel destination is entitled to. Changes in the travel behavior can be observed as soon as a specific country or region is communicated by media to be potentially dangerous for visitors due to sudden increase in COVID-19 positive cases. Some of them might look for a safer destination or simply postpone the trip. Based on the most recent published information from media, the travel behavior might become a subject for adjustment (Neuburger & Egger, 2020).

Based on a recently published surveys, there are different criteria that should be met in order for passengers to choose traveling by air. High cleanliness standards followed by protective health measures result to be the most essential prerequisites for developing a positive travel intention (Oliver Wyman - A Marsh & McLennan Company, 2020). This gives airlines the chance to stand out from the crowd based on how they respond to these current market needs. Some of them can persuade by sanitizing aircrafts with ultraviolet light, incorporation of robots or selling masks on spot. According to the results of the survey, the role of airports is of equal importance than of airlines. A good cooperation between these two units is necessary to protect passengers both on the ground and in the air (Oliver Wyman - A Marsh & McLennan Company, 2020).

The confidence in air transport has notably changed and it is not at the same level as it used to be prior to the outbreak of COVID-19. Based on recent studies, the estimated time in that travelers would not take the risk and travel by air varies by individuals (Poonam, 2020). The willingness to fly in case of an urgent matter is much higher compared to those of passengers who would travel for leisure. Holiday- and even business-oriented trips are given secondary priority, which again leads to an overall reduction in sold airline seats (Poonam, 2020). The reputation of individual airlines has gained importance among travelers compared to the time before pandemic. This is combined with an increased demand for high quality onboard experience characterized by digitalization (Inmarsat, 2020). According to a PwC Traveler Sentiment Survey (2020), the driving force in sales is nowadays the passengers’ confidence in the safety measures applied by airlines. Overall, the individual trust in an airline has replaced the previously important aspects such as fares or schedule convenience (PwC, 2020).

James Wiltshire (2020), the assistant director for external affairs of the International Air Transport Association (IATA), went into a more detailed prediction for the future of the aviation industry. One of the key unknowns, he said, is to what extent demand for air travel will return after the pandemic is beyond its acute stage and into a chronic stage. One hint may be found in places like China and South Korea, which have gotten the virus under control and where domestic air travel has returned to near pre-pandemic levels—and, in the case of South Korea, is actually somewhat higher. “The domestic markets give us some hope,” he said, that the aviation industry could return to normal after the pandemic. One key concern, he said, is whether governments will pull support for airlines too quickly as the pandemic eases. Many airlines have survived only because of government aid, and the inflection point that comes at the beginning of a recovery “is actually the point of maximum risk.” Unfortunately, he added, support for the airline industry is likely to be to be needed for some time, going forward into 2021 at the very least.

A research by Scott (2020), the major factor influencing international air travel now is government travel restrictions. The rising infection rates and the concern about new variants, particularly in the United States and Europe, led to a tightening of travel restrictions in winter 2020–2021, “which means we are back, in some ways, where we were in March 2020,” he said. This is very concerning. However, on a positive note, there are indications that once travel restrictions are removed, air travel may quickly return to normal or near-normal. Wiltshire showed a graph of air travel between the the United Kingdom and Dubai in the United Arab Emirates. Up to November 2020, there was a quarantine in place for UK travelers visiting Dubai, and air travel between those locations was down 80 percent from a year before. However, when the quarantine was lifted, bookings shot up to levels that were even a little above normal for that time of year. Then, as a new variant of the virus emerged, travel restrictions were put back in place, and bookings plunged. In short, he said, how governments respond to COVID-19 going forward is critical to the outlook of the industry. A more fundamental factor affecting the future of air travel is the availability and use of vaccines, Wiltshire said. Countries that achieve herd immunity will likely begin to ease travel restrictions, but the vaccine rollout is very uneven around the world. Based on current patterns, it appears that the United States could reach herd immunity in the second quarter of 2021, followed perhaps by Canada, to be joined by the United Kingdom and then the European Union in the third quarter of 2021. But other countries are lagging—Latin America and Japan in the first or second quarter of 2022, China in the third or fourth quarter of 2022, and India not until 2023.

**2.5 Personal critique of literature review**

Wenzel et al., (2010) undertook a research study on Strategies that can be pursued in the event of crisis emergence. The study focused on the crises that have been caused by Covid-19 pandemic. The target of this study took a broad perspective of the context and failed to concentrate on the aviation industry. The study generalized the strategies that firms can adopt or pursue during the time of uncertainty in the business environment hence leaving a gap in the study on how aviation industry has applied different strategies for their survival during the period of corona virus pandemic.

Budd et al (2020) undertook a research study on how European airlines have responded to the corona virus pandemic. The study was done in Europe and the researchers used content analysis to analyze the collected data. The results show that due to environmental changes, the airlines formulated a raft of strategies to respond to these changes. The study was done from a different context (Europe) and therefore might not be applicable to Kenyan setting. Orawo (2010), undertook a research study to establish strategies Kenya Airways had adopted in responding to competitive environment as it executed a global expansion idea. The research shows that Kenya Airways pursued several and fruitful strategies in navigating through the competitive business environment. The study did not focus on Covid-19 period crisis and response strategies rather it focused on strategies Kenya Airways had employed to deal with competition in the changing environment therefore creating a conceptual gap that required further research. The study was also done before the corona virus pandemic period and the strategic responses applied might not be applicable to the current situation.

**2.6 Establishment of research gaps**

While there is a growing body of research that explores the impacts of the pandemic on the aviation industry, there exists a critical research gap when it comes to a comprehensive examination of the specific business strategies adopted by various stakeholders within the industry to navigate the post-pandemic landscape.

The global aviation industry, faced with unprecedented challenges and disruptions in the wake of the COVID-19 pandemic, has undergone significant transformation in its business strategies. While numerous studies have explored the immediate impacts of the pandemic on the industry (IATA, 2020; Bel and Fageda, 2020), there is a conspicuous gap in the literature pertaining to a comprehensive and in-depth examination of the post-pandemic business strategies adopted by aviation companies. Several studies have investigated the strategies implemented during the pandemic, such as cost-cutting measures and fleet reductions (Gudmundsson et al., 2020; Button and Vega, 2021). However, there is limited scholarly attention devoted to evaluating the long-term strategic adaptations and innovations that have emerged in response to the changed landscape of air travel, including shifts in passenger behavior, travel restrictions, and sustainability concerns.

Furthermore, existing research often lacks a robust empirical foundation and relies heavily on anecdotal evidence or theoretical models (Grit, 2021; Taneja, 2021). A comprehensive case study approach is needed to delve into the specific strategies employed by key players in the aviation industry and to assess their effectiveness in navigating the post-pandemic era.

Several studies have investigated the strategies implemented during the pandemic, such as cost-cutting measures, route restructuring, and fleet reductions (Gudmundsson et al., 2020; Button and Vega, 2021). However, there is limited scholarly attention devoted to evaluating the long-term strategic adaptations and innovations that have emerged in response to the changed landscape of air travel, including shifts in passenger behavior, travel restrictions, and sustainability concerns. Understanding the sustained strategies adopted by airlines and aviation-related businesses in the recovery phase and their impact on performance is crucial.

With changing perceptions of safety, hygiene, and travel preferences among passengers (Bieger and Wittmer, 2021), airlines must adapt their services and marketing strategies. Research is required to explore how airlines are addressing shifting passenger behavior and preferences post-pandemic, including factors such as touchless travel, health and safety protocols, and personalized offerings. The aviation industry is deeply interconnected with global supply chains (Dedoussi et al., 2020). There is a lack of comprehensive studies investigating how airlines and their supply chain partners have reconfigured their operations and logistics strategies to enhance resilience in the face of future disruptions, including pandemics, geopolitical tensions, and natural disasters.

This research aims to bridge these gaps by conducting an in-depth case study analysis of select airlines and aviation companies to elucidate the nuanced and evolving business strategies adopted in the aftermath of COVID-19. By addressing these research gaps, this study seeks to contribute valuable insights to both academia and industry practitioners, aiding in the development of resilient and adaptable strategies for the aviation sector in a post-pandemic world.

**CHAPTER THREE: RESEARCH METHODOLOGY**

**3.0 Overview**

This section provides an overview of the method to be used for the study and how data will be collected and analyzed. To ensure the collection of the right data for the research work, certain procedures and methods will be adopted. This chapter looks at the methods, the target population, the choice of case study area, the sample and sampling procedure, the research instrument, the data collection procedure and the method used in analyzing or estimating the data.

**3.1 Research design**

A research design is the "glue" that holds all the elements in a research project together. A design is used to structure the research, to show how all the major parts of the research project work together to try to address the central research questions. Orodho (2013) defines it as the scheme, outline or plan that is used to generate answers to research problems. Research design is the blueprint for conducting the study that maximises control over factors that could interfere with the validity of the findings. Designing a study help the researcher to plan and implemented the study in a way that helps the researcher to obtain intended results, thus increasing the chances of obtaining information that will be associated with the real situation (Burns & Grove, 2013). This study conducted descriptive design. The major purpose of descriptive research is description of the state of affairs as it exists. Kerlinger (2009) pointed out that descriptive studies are not only restricted to fact findings but may also result in the formulation of important principles of knowledge and solution to significant problems. They involved measurement, classification, analysis, comparison and interpretation of data. Descriptive survey is a method of collecting information by interviewing or administering a questionnaire to a sample of individuals (Orodho, 2013). It can be used when collecting information about the people’s attitude, opinions, habits or any of the variety of education or social issues (Orodho and Kombo, 2012).

**3.2 Target population**

A study population is a well-defined set of people or group of things, household, community, firms, or services that or which are being investigated (Noholas, 2013). This researcher will target the aviation industry.

**3.3 Sampling design**

Sampling refers to the process of selecting a sample such as participants from the population of interests so that the results gained by these participants can be fairly generalized to the population from which they were chosen (Noholas, 2013). In some cases, purposive random sampling will be used for this research. As the name suggests, purpose sampling will be used to select a sample for a particular purpose. Furthermore, since the precise quantitative figures of the target population may not be known, non-probability purposive sampling will be more ideal as it does not require rigorous rules and rigidity in terms of the figurative target population as strictly required in probability sampling techniques. Probability sampling aims at to achieve a homogenous sample, i.e. a sample whose units share the same or very similar traits, therefore making it a very appropriate sampling technique for this research (Noholas, 2013).

**3.4 Sample size determination**

A sample size of 50 respondents from the aviation industry will be selected.

**3.5 Data collection methods**

Data will be collected using a structured interview schedule and questionnaire specifically designed for this study. The other Data about the respondents will be obtained from the selected sources. Data will be collected using both primary and secondary data collection techniques. Primary data will be gathered basically through structured questionnaires and interviews. The researcher will also use a combination of structured questionnaires and interviews. The main instrument of data collection will be the questionnaire. Secondary data on the other hand will be gathered through review of available relevant materials such as print and electronic media; other dissertations; books; articles and related reports.

**3.6 Data analysis**

Thematic analysis and descriptive statistical analysis were used to analyze data. Thematic analysis involves the classification of words and phrases that emerge from interviews and related to the same content into major themes (Bryman, 2018). The idea behind this is to allow the actual prevailing pattern, themes and phrases of the research findings to emerge from the data. Additionally, data will be obtained from questionnaires and manually coded, synthesized and quantified into percentages, using SPSS and will be presented in form of tables of frequency and percentages as descriptive statistics in Microsoft word.

**3.7 Triangulation**

Triangulation refers to the use of multiple methods or data sources in qualitative research to develop a comprehensive understanding of phenomena (Patton, 2019). Triangulation also has been viewed as a qualitative research strategy to test validity through the convergence of information from different sources. Denzin (1978) and Patton (1999) identified four types of triangulations: (a) method triangulation, (b) investigator triangulation, (c) theory triangulation, and (d) data source triangulation. This research presented the four types of triangulation followed by a discussion of the use of focus groups (FGs) and in-depth individual (IDI) interviews as an example of data source triangulation in qualitative inquiry.

**3.8 Limitations of the study**

Researching on this topic is always a challenge. One of the challenges faced by this researcher is on data collection as the topic will be perceived to be political by various members of the aviation industry. The researcher will face challenges when collecting data from most of the respondents of the aviation industry. However, it will be possible for the researcher to conduct this study through consent obtainable from ministry of defense as well as making a good rapport with members of the aviation industry. Limitations are perceived as weaknesses in research (Creswell, 2019). The unavailability of participants may hinder data collection needed for the study. While participants will be expected to answer truthfully, the results will be based on their experiences, which could be biased. The results and interpretation of this study can only be made to a specific group of people or location.

**3.9 Ethical considerations**

Ethics are important in research in order to protect people who participate in the research from psychological and physical harm. Therefore, a researcher has to take into account various ethical considerations in order to protect participants and respect their personal integrity. An introductory letter will be used; consent forms will be supplied to the respondents; anonymity will be applied, and data collected will be kept confidential and purely used for academic purposes. In view of the above, the researcher will take into account ethical considerations when conducting the research and the following issues will be taken into account to adhere to ethics. Confidentiality-All respondents are assured that the information collected from them will be used strictly for academic purposes and held in the strictest confidentiality. Anonymity-The respondent’s names will not be collected, and their private and personal details will not be disclosed to the readers of the research report. Informed Consent-A letter of introduction will be provided to the target respondents explaining why the research is important and why it is important for them to participate in it and respondents will be given an option to either participate in the research or to opt out.

# **CHAPTER FOUR: PRESENTATIONS OF DISCUSSION OF RESULTS**

**4.0 Overview**

In this chapter, the research findings collected through the methodology outlined in Chapter Three are presented and analyzed. The findings offer insights into the impact of the COVID-19 pandemic on the aviation industry, the business strategies adopted by airlines and airports, the effectiveness of marketing and communication initiatives, and the shifts in customer behavior and preferences. These findings serve as the foundation for the subsequent discussions and conclusions presented in the following chapters.

**4.1 Presentation of results on background characteristics of the participants**

**4.1.1 Demographic characteristics of the respondents**

The study incorporates participants' personal characteristics to provide general information that aids the researcher's understanding of the findings. The variables examined in the study encompass gender, age, marital status, family size, education level, occupation, and monthly income.

**4.1.2 Gender**

*Table 4. 1: Gender of Participants*

Table 4.1 presents the distribution of respondents' gender in the research study. Out of the 50 participants, 40% identified as male, which corresponds to a frequency of 20 participants. On the other hand, 60% of participants identified as female, with a frequency of 30 participants.

**4.1.2 Age**

Table 4. 2 Age

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Variables | Observation  | Mean | Standard deviation  | Minimum | Maximum |
| Age | 50 | 36.94 | 6.949996 | 25 | 63 |

The table presents descriptive statistics for the variable "What is your age" based on data from 50 observations. The mean age of the participants is approximately 36.94 years, indicating that, on average, the surveyed individuals are around this age. The standard deviation, which measures the spread or variability of ages within the sample, is approximately 6.95. This suggests that ages in the sample vary by about 6.95 years around the mean age. The minimum age recorded in the dataset is 25 years, while the maximum age is 63 years. This range of ages demonstrates the diversity of age groups represented in the sample.

**4.1.3 Name of the Airline**

|  |  |  |  |
| --- | --- | --- | --- |
| Characteristic | Classification | Frequency | Percentage (%) |
| Name of Airlines | Ethiopian Airlines Kenya AirlineProflight Zambia Qatar AirwaysSouth African Airline  | 11 11 10117 | 22.00 22.00 20.00 22.0014.00 |
| **Total** |  | **50** | **100%** |

*Table 4. 3: Airline*

The above table 4.2 illustrates the distribution of participants' affiliation with different airlines they work at. The data presents insights into the variety of airlines represented among the participants, with a total sample size of 50 individuals. Ethiopian Airlines is represented by 11 participants, constituting 22% of the total. Similarly, Kenya Airways is also represented by 11 participants, accounting for another 22% of the total. Combined, these two airlines make up 44% of the total sample. Proflight Zambia was represented by 10 participants, making up 20% of the total. The fourth airline in consideration, Qatar Airways, represented by 11 participants as well, also amounting to 22% of the total sample. Lastly, South African Airways has 7 participants affiliated with it, accounting for 14% of the total sample.

**4.1.4 Role in the airline industry**

Table 4.3 below presents information regarding the roles of participants within the airline industry. It outlines the various positions held by the 50 participants and provides insights into the distribution of roles within the sample. Flight Attendants represent the largest group, comprising 30% of the participants, which is equivalent to 15 individuals. They play a crucial role in ensuring the safety and comfort of passengers during flights. Pilots, the second-largest group, make up 18% of the participants, with 9 individuals. Pilots are responsible for operating and navigating aircraft, making them a vital part of the industry.

Ground Crew members constitute 14% of the participants, with 7 individuals. They are essential for the smooth functioning of airline operations on the ground, including tasks like aircraft maintenance and loading. Maintenance and Engineering professionals represent a smaller segment, making up 2% of the participants, with just one individual. These individuals are responsible for maintaining and repairing aircraft. Customer Service personnel account for 22% of the participants, totaling 11 individuals. They play a critical role in assisting passengers, addressing inquiries, and ensuring a positive customer experience. Lastly, individuals in Administration and Management roles make up 14% of the participants, which is equivalent to 7 individuals. They are involved in overseeing various aspects of airline operations and management.

|  |  |  |  |
| --- | --- | --- | --- |
| Characteristic | Classification | Frequency | Percentage (%) |
| Role of the Participant | PilotFlight AttendantGround CrewMaintenance and EngineeringCustomer servicesAdministration and Management | 915 71117 | 18.00 30.00 18.00 2.0022.0014.00 |
| **Total** |  | **50** | **100%** |

*Table 4. 4: Role of Participants*

**4.1.5 How many years of experience do you have in the aviation industry?**

*Table 4. 5: Years of experience*

Table 4.4 presents the distribution of participants' years of experience within the aviation industry. A total of 4% (2 Individuals) of participants have less than 1 year of experience in the aviation industry. These individuals are relatively new to the industry. The category of 1-5 years of experience is the most populated, making up 40% of the participants (20 individuals), this indicates that a significant portion of the participants have relatively early-stage careers in aviation. Participants with 6-10 years of experience constitute 36% (18 individuals), Individuals with 11-15 years of experience make up 16% of the participants (8 individuals), finally, 4% of participants (2 individuals), have more than 15 years of experience in the aviation industry.

**4.2 Presentation of results based on examining the impact Covid-19 had on the aviation industry and how the industry responded to that change in the external environment**

**4.2.1 Did the COVID-19 pandemic affect the number of flights you operated or worked on?**

*Table 4. 6: Number of flights operated*

The graph table 4.5 reveals a clear shift in the aviation industry's flight operations due to the COVID-19 pandemic. Participants were asked whether the pandemic had affected the number of flights they operated or worked on, and the results illustrate the extent of this impact. 48% of participants, which is equivalent to 24 individuals, reported that the pandemic **significantly reduced** the number of flights they operated or worked on. An identical 48% of participants, another 24 individuals, mentioned that the number of flights they operated or worked on was slightly reduced due to the pandemic. This indicates a substantial decrease in flight activity, reflecting the severe disruptions caused by the pandemic. A small minority, 4% of participants (2 individuals), stated that there was no change in flight frequency as a result of the pandemic.

In summary, the data reveals that a significant portion of individuals in the aviation industry experienced a reduction in the number of flights they operated or worked on due to the COVID-19 pandemic, highlighting the profound effects of the pandemic on the industry's operations.

**4.2.2 How has your organization been affected by the COVID-19 pandemic?**

*Table 4. 7: Effect of Covid-19 pandemic on the airlines organization*

Table 4.6 provides valuable insights into the profound impact that the COVID-19 pandemic had on organizations within the aviation industry. Participants were asked to identify how their respective organizations were affected by the pandemic, and the results highlight the range of challenges faced. The most common effect reported by participants was reduced passenger numbers, with 44% of respondents (22 individuals) indicating that their organizations experienced this challenge. Following closely, 24% of participants (12 individuals) reported reduced flight operations. Financial losses were another notable impact, affecting 18% of the organizations represented (9 individuals) by participants. Employee layoffs or furloughs were reported by 14% of participants (7 individuals). Overall, these findings highlight the need for strategic and adaptive measures to navigate the unprecedented challenges posed by the pandemic.Top of Form

**4.2.4 Did you experience any flight cancellations or disruptions during the pandemic?**

*Table 4. 8 Flight Cancellation*

The table 4.7 highlights the significant impact of the COVID-19 pandemic on flight operations, with a substantial majority of participants reporting disruptions to their travel plans. A majority of participants, constituting 76% (38 individuals) of the total sample, indicated that they did experience flight cancellations or disruptions during the pandemic. In contrast, 24% of participants (12 individuals) reported that they did not experience any flight cancellations or disruptions during the pandemic. Overall, the data paints a clear picture of the far-reaching consequences of the pandemic on flight operations within the aviation industry. The prevalence of flight cancellations and disruptions underscores the industry's vulnerability to external shocks and highlights the need for flexible and adaptive strategies to navigate such challenges.

**4.2.5 How did your organization respond to the changes brought about by the COVID-19 pandemic?**

*Table 4. 9*

Tables 4.8 provides insights into the various responses that organizations in the aviation industry implemented to address the challenges posed by the COVID-19 pandemic. The most common response, reported by 70% of participants, was the implementation of health and safety protocols. This response reflects the industry's commitment to ensuring the safety and well-being of both passengers and employees during the pandemic. Adjusting flight schedules and routes was the second most common response, with 22% of participants indicating that their organizations took this action. A smaller percentage of participants, 6% of the total, reported that their organizations introduced new services or products during the pandemic. This response may have been driven by the need to adapt to evolving customer needs or to explore alternative revenue streams. Lastly, 2% of participants mentioned that their organizations sought financial assistance or government support in response to the pandemic. These responses reflect a combination of efforts to prioritize health and safety, adapt to changing market conditions, and ensure financial sustainability in a challenging environment.

**4.2.6 How did your work responsibilities change during the pandemic?**

*Table 4. 10: Work responsibilities*

The data in table 4.9 sheds light on the shifts and adjustments that participants experienced in their work responsibilities as a result of the COVID-19 pandemic. A significant majority of participants, 58% of the total (29 individuals), reported an increase in health and safety protocols as part of their changed work responsibilities. Assisting with flight cancellations and disruptions emerged as the second most common change, with 26% of participants (13 individuals) indicating that their work responsibilities included dealing with these challenges. Around 12% of participants (6 individuals reported that their work involved dealing with customer inquiries and concerns. Handling operational changes due to travel restrictions accounted for 4% of participants (2 individuals)' changed responsibilities.

**4.2.7 How satisfied were you with the safety measures and protocols implemented by your airline during the pandemic?**

*Table 4. 11: Safety measures and protocols implemented*

The Tables 4.10 offers insights into participants' overall satisfaction levels with the safety measures and protocols that were put in place during the COVID-19 pandemic. A notable portion of participants, consisting of 19 individuals (38% of the total), expressed being "very satisfied" with the safety measures. Similarly, 21 participants (42% of the total) reported feeling "satisfied" with the safety measures. On the other hand, 6 participants (12% of the total) indicated a "neutral" stance towards the safety measures. A smaller number of participants, just 1 individual (2% of the total), expressed being "dissatisfied" with the safety measures. Lastly, 3 participants (6% of the total) reported being "very dissatisfied" with the safety measures. While relatively few in number, this group was notable for having strong reservations or dissatisfaction with the measures in place.

### **4.2.8 Anova to examine whether there are significant differences in satisfaction levels among various roles in the airline industry.**



Table 4. 12 ANOVA TEST

The Analysis of Variance (ANOVA) table is used to examine whether there are significant differences in satisfaction levels among various roles in the airline industry. Bartlett's test for equal variances is performed to assess if the variances of satisfaction scores are equal across the different job roles. In this test, the chi-square statistic is calculated as 0.3185 with a p-value (Prob>chi2) of 0.957. Since the p-value is much greater than 0.05, it suggests that there is no evidence to reject the null hypothesis that the variances are equal. This indicates that the assumption of equal variances (homoscedasticity) required for ANOVA is met. Therefore, based on this ANOVA analysis and Bartlett's test, there is no statistically significant difference in satisfaction levels among the different job roles in the airline industry.

**4.2.9 Did the airline company provide any additional support or resources to employees during the pandemic?**

Table 4.11 below offers insights into the types of support and resources that airline companies provided to their employees in response to the challenges posed by the COVID-19 pandemic.A portion of participants, representing 14% of the total (7 individuals), reported that their airline companies offered "financial assistance" to employees. In contrast, a smaller proportion of participants, constituting 2% of the total (1 individual), indicated that their companies provided "mental health support" to employees. Remote work options were provided by 14% of airline companies, according to participants (7 individuals). the most prevalent form of support reported was the provision of "personal protective equipment (PPE)," as indicated by 68% of participants (34 individuals). A smaller number of participants, representing 2% of the total (1 individual), mentioned that their airline companies implemented "reduced work hours."

*Table 4. 13: Additional support*

**4.3 Presentation of results based on examining the business strategies adopted by airlines and airports to navigate the post-pandemic environment.**

**4.3.1 Were you aware of any business strategies implemented by airlines and airports post-COVID-19?**

*Table 4. 14 Business strategies implemented*

The data Table 4.12 above reveals participants' level of awareness regarding the adoption of business strategies by airlines and airports to address the challenges posed by the post-pandemic environment. A significant majority of participants, comprising 94% of the total sample, indicated that they were indeed aware of business strategies implemented by airlines and airports. In contrast, a small minority of participants, representing 6% of the sample, reported that they were not aware of such business strategies. This suggests that while the majority were informed about the strategies adopted, a minority within the industry might have lacked information about the approaches taken by organizations.

**4.3.2 What strategies did your organization adopt to navigate the post-pandemic environment?**

|  |  |  |  |
| --- | --- | --- | --- |
| Characteristic | Classification | Frequency | Percentage (%) |
| Strategies adopted | Cost-cutting measures Digital transformation initiatives Collaborations or partnerships with other airlines or airports Expansion into new markets Collaboration with Health Authorities Customer CommunicationEmployee Training and CommunicationEnhanced Sanitization and Hygiene ProFlexible Booking PoliciesHealth and Safety MeasuresProvided Flexible Booking PoliciesImproved Customer CommunicationMade booking easy | 82841111111111 | 16.00%56.00%8.00%2.00%2.00%2.00%2.00%2.00%2.00%2.00%2.00%2.00%2.00%2.00% |
| **Total** |  | **50** | **100%** |

*Table 4. 15 Strategies adopted by the organization*

The above table 4.13 provides valuable insights into the range of strategies that organizations within the aviation industry adopted to navigate the challenges of the post-pandemic environment.

**4.3.3 How effective do you think these safety measures were in instilling confidence among travelers and employees?**

*Table 4. 16 effectiveness of safety measures*

The graph table 4.14 presents participants' evaluations of the effectiveness of safety measures in instilling confidence within the context of the post-pandemic environment. A notable portion of participants, comprising 19% of the total, reported that they found the safety measures to be "very effective" in instilling confidence. Similarly, a majority of participants, representing 54% of the total, indicated that they perceived the safety measures to be "effective" in instilling confidence. A smaller proportion of participants, constituting 9% of the total, reported a "neutral" stance regarding the effectiveness of the safety measures. However, another 9% of participants deemed the safety measures to be "ineffective" in instilling confidence. Lastly, another 9% of participants expressed that they found the safety measures to be "very ineffective" in instilling confidence. This group had a particularly negative view of the measures' impact on bolstering confidence.

**4.3.4 Do you believe the business strategies adopted by your organization during the pandemic will have a long-term impact?**

According to table 4.15 significant portion of participants, constituting 38% of the total sample (19 individuals), expressed that they believed the business strategies would have a "significant long-term impact." A slightly larger proportion of participants, comprising 42% of the total (21 individual), reported that they believed the business strategies would have "some long-term impact." A smaller subset of participants, representing 12% of the total (6 individuals), indicated that they believed the strategies would result in "minimal long-term impact." Lastly, 8% of participants reported that they believed the business strategies would have "no long-term impact at all." This group held the view that the strategies implemented during the pandemic would not have any lasting effect on their organization's course.

*Table 4. 17 Term of impact*

**4.4 Presentation of results based on the effectiveness of marketing and communication strategies employed by airlines to regain passenger confidence and stimulate travel demand in the post-pandemic era.**

**4.4.1 How has your airline communicated safety and health measures to passengers in the post-pandemic era?**

*Table 4. 18 Communication means*

Table 4.16 provides insights into the various communication channels and methods that airlines have employed to convey safety and health measures to passengers, aiming to rebuild passenger confidence and stimulate travel demand in the post-pandemic era. A significant portion of airlines, represented by 34% of participants (13 individuals), utilized "social media posts" as a communication channel. "In-flight announcements" were another frequently used communication method, chosen by 26% of participants (17 individuals). Pre-flight communication, such as emails and messages, was employed by 18% of airlines (9 individuals). "Airport signage and displays" were used by 12% of airlines (6 individuals). A smaller proportion of airlines, 10% of participants (5 individuals), opted for "email notifications" to communicate safety and health measures directly to passengers.

**4.4.2 How frequently were these marketing and communication strategies updated or revised during the post-pandemic period?**

*Table 4. 19 Frequency*

Table 4.17 offers insights into how frequently airlines updated or revised their marketing and communication strategies in the post-pandemic era, as part of their efforts to regain passenger confidence and stimulate travel demand. The majority of airlines, representing 66% of participants, reported updating or revising their strategies "frequently" – every few weeks. A significant proportion of airlines, comprising 28% of participants, reported updating or revising their strategies "occasionally" – once a month. A smaller percentage of airlines, constituting 6% of participants, reported updating or revising their strategies "rarely" – every few months.

**4.4.3 How would you rate the effectiveness of these communication methods in reassuring passengers about their safety during travel?**

*Table 4. 20 Effectiveness of these communication methods*

The graph table 4.18 provides insights into participants' evaluations of the effectiveness of communication methods employed by airlines to reassure passengers in the post-pandemic era. A notable portion of participants, comprising 28% of the total, rated these communication methods as "very effective." Similarly, a significant majority of participants, representing 48% of the total, rated the communication methods as "effective." This suggests that the majority found these methods to be successful in their role of reassuring passengers and promoting confidence.

A smaller percentage, 8% of participants, expressed a "neutral" stance regarding the effectiveness of the communication methods. However, 10% of participants rated the communication methods as "ineffective," and lastly, 6% of participants considered the communication methods to be "very ineffective." Overall, while the majority found these methods to be effective or very effective, there were also individuals who held neutral, ineffective, or very ineffective opinions.

**4.5 Presentation of results based on exploring the changes in customer behavior and preferences in the aviation industry following the covid-19 pandemic, and identify strategies for airlines to adapt and cater to the evolving needs of travelers.**

**4.5.1 As an airline worker, have you noticed any significant changes in customer behavior and preferences since the COVID-19 pandemic?**

*Table 4. 21 Significant changes in customer behavior*

The graph table 4.19 offers insights into the observations of airline workers regarding changes in customer behavior following the COVID-19 pandemic. A significant proportion of airline workers, constituting 34% (17 individuals) of the total, reported that they have observed "significant changes" in customer behavior. Furthermore, a substantial majority of airline workers, comprising 48% (24 individuals) of the total, indicated that they have noticed "some changes" in customer behavior. Conversely, a smaller percentage of airline workers, 18% (9 individuals) of the total, reported that they have not observed any noticeable changes in customer behavior.

**4.5.2 In your experience, how has the frequency of air travel by passengers changed since the onset of the COVID-19 pandemic?**

*Table 4. 22 Frequency of air travel*

Table 4.20 offers valuable insights into how individuals' perceptions of the frequency of air travel by passengers have evolved in the wake of the COVID-19 pandemic. A notable proportion of participants, accounting for 22 individuals (44% of the total), reported that the frequency of air travel by passengers has "decreased significantly." Similarly, another considerable portion of participants, comprising 20 individuals (40% of the total), noted that air travel frequency has "decreased moderately." Conversely, a smaller number of participants, 5 individuals (10% of the total), stated that the frequency of air travel by passengers has "remained the same." These participants observed a level of stability in travel behavior despite the challenges brought about by the pandemic. Lastly, a minority of participants, 3 individuals (6% of the total), reported that air travel frequency by passengers has "increased moderately." In summary, the data indicates that a majority of participants have observed a decrease in the frequency of air travel by passengers since the COVID-19 pandemic. While a minority noted stability or even a moderate increase, the dominant trend reflects the industry's challenges in adapting to reduced travel demand and evolving passenger behavior in the wake of the pandemic.

**4.5.3 From your perspective, which factors have become more important for passengers when choosing an airline post-COVID-19?**

*Table 4. 23* *factors that participants perceive as increasingly important*

Table 4.21 sheds light on the factors that participants perceive as increasingly important for passengers in the post-COVID-19 era. From the participants' perspective, "health and hygiene protocols" emerged as a highly important factor for passengers, garnering the attention of 21 individuals (42% of the total). "Contactless check-in and boarding" was another noteworthy factor, as noted by 10 participants (20% of the total). "Seat distancing" was identified as more important by 8 participants (16% of the total). Among the factors deemed important, "flexible booking and cancellation policies" captured the attention of 5 participants (10% of the total). Lastly, "safety and cleanliness" was reported as more important by 6 participants (12% of the total). As observed from the participants' perspective, health and hygiene protocols, contactless processes, seat distancing, flexible booking policies, and safety considerations have all gained increased importance for passengers as they make travel decisions in the evolving landscape.

**4.6 Discussion of Research findings**

This section serves as the discussion of the research findings, which are presented in alignment with the stated objectives and the problem statement derived from the research gap identified in the literature review.

**4.6.1 Demographic characteristics of the respondents**

The demographic characteristics of the respondents provide valuable insights into the profile of airline industry workers who participated in this research study. Understanding the demographics of the participants is crucial as it helps contextualize and interpret the findings, allowing for a more comprehensive understanding of the research results.

In terms of gender distribution, the data indicates a fairly balanced representation, with 40% of respondents identifying as male and 60% as female. This gender distribution suggests a diverse range of perspectives within the study population, enhancing the comprehensiveness of the research findings.

Regarding the airlines they work at, the participant distribution across different airlines offers a snapshot of the study's reach and inclusivity. Ethiopian Airlines, Kenya Airways, Proflight Zambia, Qatar Airways, and South African Airways were the prominent airlines represented in the study, with each contributing a significant share of participants. This diversity among airlines enhances the generalizability of the findings, as it encompasses a range of operational contexts and business strategies within the aviation industry.

The study encompasses a wide range of roles within the airline industry, offering a holistic perspective on how various job functions have been affected by the pandemic. The majority of respondents (30%) are flight attendants, reflecting the vital role of cabin crew in ensuring passenger safety and comfort during flights. Additionally, 18% of participants are pilots, who play a central role in flight operations. Ground crew members, contributing to the smooth functioning of airport operations, constitute 14% of the sample. Moreover, 22% of respondents hold roles in customer service, reflecting the significance of passenger interactions in the industry. A smaller percentage (2%) are involved in maintenance and engineering, while 14% are engaged in administration and management positions. This diversity in roles highlights the multifaceted nature of the aviation industry and its various functions, each of which may experience unique challenges and adaptations in response to the pandemic.

In terms of Years of Experience within the airline industry, the respondents in the study bring varying levels of experience to the table, providing a well-rounded view of how individuals at different career stages have perceived and responded to the pandemic's impact. A substantial portion (40%) of respondents reported having 1 to 5 years of experience in the aviation industry. This group represents relatively early-career professionals who may offer insights into how recent industry changes have affected newer entrants. Additionally, 36% of participants have between 6 and 10 years of experience, indicating a segment of mid-career professionals with a significant tenure in the industry. Eighteen percent (18%) have 11 to 15 years of experience, bringing a wealth of experience to the study. A smaller fraction (4%) boasts more than 15 years of experience, potentially offering a long-term perspective on the industry's evolution.

**4.6.2 Effects of covid 19 on the aviation industry and how the industry responded to that change in the external environment.**

The COVID-19 pandemic had a profound and far-reaching impact on the aviation industry, reshaping its dynamics in unprecedented ways. The research findings vividly illuminate the multifaceted consequences of the pandemic on various aspects of the industry and provide insights into the industry's adaptive strategies.

The results presented in Table 4.5 reveal a significant and immediate shift in the aviation industry's flight operations due to the COVID-19 pandemic. When asked whether the pandemic affected the number of flights they operated or worked on, 48% of participants, equivalent to 24 individuals, reported a substantial reduction in flight activity. An identical 48% of participants, another 24 individuals, noted a slight reduction in the number of flights they were involved in. Only a small minority, 4% of participants (2 individuals), reported no change in flight frequency.

These findings underscore the profound impact of the pandemic on the aviation industry's operations, with a substantial portion of individuals experiencing reduced flight activity. This reduction can be attributed to various factors, including travel restrictions, decreased passenger demand, and the industry's efforts to mitigate the spread of the virus. The industry's ability to adapt and recover from this significant disruption will be crucial for its future sustainability and growth.

Table 4.6 provides insights into the multifaceted impact of the pandemic on aviation organizations. Reduced passenger numbers emerged as the most prevalent effect, affecting 44% of organizations represented by the participants. This outcome aligns with the global decline in travel demand. Notably, 24% of participants indicated reduced flight operations, highlighting the industry's response to decreased demand. Financial losses, layoffs, and furloughs were additional significant impacts, underscoring the need for organizations to navigate challenges across multiple fronts.

**4.6.3 Management and business strategies adopted by airlines and airports to navigate the post-pandemic environment.**

In this section, we discuss the findings pertaining to the business strategies adopted by airlines and airports to navigate the post-pandemic environment, as well as the perceived effectiveness and long-term impact of these strategies.

The results indicate that a significant majority of participants, accounting for 94% of the total sample, were aware of the business strategies implemented by airlines and airports in response to the challenges posed by the post-pandemic environment. This high level of awareness suggests that the strategies employed by organizations within the aviation industry garnered considerable attention and were widely acknowledged within the sector. Conversely, a small minority of participants (6% of the sample) reported a lack of awareness regarding these strategies, indicating that a portion of industry stakeholders may have been less informed about the approaches taken by organizations.

Table 4.13 provides insights into the diverse range of strategies adopted by organizations within the aviation industry to address the challenges brought about by the post-pandemic environment. Notably, digital transformation initiatives and cost-cutting measures emerged as prevalent strategies, with 56% and 16% of respondents respectively indicating their adoption by their organizations. Collaborations or partnerships with other airlines or airports, expansion into new markets, and collaboration with health authorities were also reported as strategies employed by a smaller percentage of participants. These findings highlight the multifaceted nature of the strategies undertaken, suggesting that organizations adopted a combination of approaches to navigate the evolving landscape.

Participants' evaluations of the effectiveness of safety measures in instilling confidence revealed varying perspectives. While 19% of respondents found the safety measures to be "very effective," a majority (54%) perceived them as "effective." On the other hand, 9% expressed a "neutral" stance, and another 9% considered the measures "ineffective" in instilling confidence. Interestingly, 9% of participants deemed the safety measures "very ineffective." These diverse opinions underscore the complex interplay of factors influencing passengers' and employees' perceptions of safety measures. It is evident that while safety measures had a positive impact on many, there remains room for improvement to address the concerns of those who found them less effective.

Regarding the long-term impact of the business strategies adopted during the pandemic, participants exhibited varying degrees of optimism. A significant portion (38%) believed that these strategies would have a "significant long-term impact," indicating their confidence in the enduring value of the measures taken. Meanwhile, a slightly larger proportion (42%) anticipated "some long-term impact," suggesting a more moderate outlook. Conversely, 12% of participants expected only "minimal long-term impact," and 8% believed the strategies would have "no long-term impact at all." These divergent perceptions reflect the uncertainty surrounding the lasting effects of the strategies implemented, with a considerable number of respondents expressing confidence in their sustainability.

Overall, the findings from this study highlight the awareness and adoption of various business strategies by airlines and airports in response to the post-pandemic environment. The effectiveness of safety measures, in particular, reveals a nuanced picture of passenger and employee perceptions. Moreover, the expectations regarding the long-term impact of these strategies reflect the industry's uncertainty about their lasting effects. Future research and industry actions may provide further clarity on the effectiveness and sustainability of these strategies in the ever-evolving aviation landscape.

**4.6.4 Marketing and communication strategies employed by airlines to regain passenger confidence and stimulate travel demand in the post-pandemic era.**

In this section, we discuss the findings from our study regarding the effectiveness of marketing and communication strategies employed by airlines to rebuild passenger confidence and stimulate travel demand in the post-pandemic era.

Table 4.16 provides valuable insights into the various communication means used by airlines to convey safety and health measures to passengers. Notably, "social media posts" emerged as a prominent communication channel, chosen by 34% of participants. "In-flight announcements" were also frequently utilized by 26% of airlines. Pre-flight communication methods, such as emails and messages, were employed by 18% of airlines, while "airport signage and displays" were used by 12%. A smaller proportion of airlines (10%) opted for "email notifications." These findings indicate a diverse array of communication methods utilized by airlines to disseminate information to passengers.

Table 4.17 provides insights into how frequently airlines updated or revised their marketing and communication strategies in the post-pandemic era. A majority of airlines (66% of participants) reported frequent updates, occurring every few weeks. A substantial proportion (28% of participants) implemented occasional updates, typically on a monthly basis. A smaller subset of airlines (6% of participants) reported rare updates, with revisions occurring every few months. These findings indicate a dynamic and adaptive approach taken by airlines, recognizing the need for agility in responding to the evolving circumstances surrounding the pandemic. Frequent updates suggest a commitment to staying current and responsive to the changing needs and expectations of passengers.

The effectiveness of communication methods employed by airlines in reassuring passengers about their safety during travel is discussed in Table 4.18. A substantial portion of participants (28%) rated these methods as "very effective," indicating a high level of success in instilling confidence among passengers. Similarly, 48% of participants found the communication methods "effective," further underscoring their positive impact. However, it's worth noting that 8% of participants held a neutral stance on effectiveness, while 10% deemed these methods "ineffective." Additionally, 6% of participants considered the communication methods "very ineffective."These findings suggest that while a majority of respondents perceived these communication methods as effective or very effective in their role of reassuring passengers and promoting confidence, there were also individuals who expressed varying degrees of skepticism or neutrality. This underscores the challenge airlines face in designing communication strategies that resonate with diverse passenger perceptions and preferences.

Overall, the findings from this study suggest that airlines have employed a range of communication methods to convey safety and health measures in the post-pandemic era. While a substantial majority of participants perceived these methods as effective, there is room for improvement to ensure that all passengers feel confident and reassured during their travels. Future research and industry actions may further refine these strategies to align with evolving passenger expectations and safety standards.

**4.6.5 Changes in customer behavior and preferences in the aviation industry following the COVID-19 pandemic, and strategies for airlines to adapt and cater to the evolving needs of travelers.**

In this section, we discuss the findings from our study on the changes in customer behavior and preferences in the aviation industry following the COVID-19 pandemic and identify strategies for airlines to adapt to these evolving needs.

Table 4.19 provides insights into the observations of airline workers regarding changes in customer behavior following the COVID-19 pandemic. A significant proportion (34%) of airline workers reported that they have observed "significant changes" in customer behavior, while a substantial majority (48%) indicated they have noticed "some changes." These observations align with the widely recognized impact of the pandemic on passenger behavior, including increased emphasis on safety and hygiene measures. However, it's worth noting that a minority (18%) of airline workers reported not observing any noticeable changes in customer behavior.

Table 4.20 illustrates how individuals' perceptions of the frequency of air travel by passengers have evolved since the onset of the COVID-19 pandemic. A substantial majority of participants (84%) reported that they have observed a decrease in the frequency of air travel by passengers. This decrease is consistent with the industry's challenges in adapting to reduced travel demand and evolving passenger behavior during the pandemic. Only a minority (6%) reported a moderate increase, highlighting the resilience of a small segment of travelers. The dominant trend underscores the need for airlines to strategize in the face of reduced travel demand.

Regarding FactorsImportant for Passengers, Table 4.21 highlights the factors that participants perceive as increasingly important for passengers when choosing an airline in the post-COVID-19 era. "Health and hygiene protocols" emerged as the top priority for passengers, as noted by 42% of participants. This underscores the critical role of safety measures and cleanliness in passenger decision-making. "Contactless check-in and boarding" were deemed important by 20% of participants, aligning with the trend towards touchless travel experiences. "Seat distancing" (16%), "flexible booking and cancellation policies" (10%), and "safety and cleanliness" (12%) were also recognized as important factors. These findings highlight the need for airlines to prioritize and communicate health and safety measures, implement contactless processes, and adapt seating arrangements to align with passenger preferences. Furthermore, flexible booking and cancellation policies have become increasingly important, reflecting passengers' desire for more flexibility in uncertain times.

Overall, the COVID-19 pandemic has brought about notable changes in customer behavior and preferences within the aviation industry. Passengers are placing a heightened emphasis on health and safety considerations when choosing airlines. To adapt and cater to the evolving needs of travelers, airlines must continue to prioritize and invest in health-related measures, while also addressing changing travel patterns and demand. A customer-centric approach that emphasizes safety, flexibility, and cleanliness will be pivotal in regaining passenger trust and stimulating travel demand in this evolving landscape.

# **CHAPTER FIVE: CONCLUSION AND RECOMMENDATION**

## 5.0 Overview

In this chapter, our primary focus will be on deriving meaningful conclusions from the extensive findings and in-depth analyses presented in the previous chapter. These conclusions are pivotal in shaping the recommendations that will address the issues identified in the initial statement of the problem. By thoroughly examining the insights garnered from our investigations, we aim to provide a comprehensive perspective on the key takeaways from our study. Following the elucidation of our conclusions, we will proceed to outline a set of recommendations. These recommendations are intended to serve as actionable guidance, informed by the insights garnered during our investigation.

## 5.1 Conclusion

This research represents a significant contribution to understanding the aviation industry's response to the unprecedented challenges posed by the COVID-19 pandemic and its subsequent efforts to adapt to the post-pandemic landscape. The aviation sector, historically known for its resilience and ability to weather various crises, faced a unique and unparalleled disruption as the pandemic unfolded. Consequently, this study's findings have shed light on the multifaceted dynamics of this industry's evolution during this critical period. The research findings, thoughtfully organized in alignment with the specific objectives, have presented a comprehensive and nuanced view of how the aviation industry has transformed and the strategic approaches taken to navigate these transformations.

The demographic characteristics of the respondents in this research study played a crucial role in enriching the comprehensiveness of the research findings. By capturing a wide range of perspectives and experiences within the aviation industry, these demographic details offered valuable context and depth to the study's insights. One significant aspect of this diversity was the gender distribution among the respondents. The data revealed a fairly balanced representation, with 40% of respondents identifying as male and 60% as female. Additionally, the study explored the distribution of respondents across different airlines. Prominent airlines such as Ethiopian Airlines, Kenya Airways, Proflight Zambia, Qatar Airways, and South African Airways were well-represented in the research. This diversity among airlines showcased the inclusivity and reach of the study, encompassing a broad spectrum of operational contexts and business strategies within the aviation industry. Airlines have distinct operational models, market dynamics, and responses to external challenges, and by including various airlines, the research was able to capture the nuances of how different companies navigated the pandemic and adapted their strategies. Moreover, the study delved into the various roles that respondents held within the aviation industry. The research encompassed a wide range of positions, offering a holistic perspective on how different job functions were impacted by the pandemic and how they adapted to the changing landscape. This diversity allowed for a more holistic understanding of the industry's dynamics and the strategies employed to navigate the post-pandemic environment, ultimately strengthening the depth and relevance of the research findings.

The impact of COVID-19 on the aviation industry was indeed profound and far-reaching, with repercussions that rippled across various dimensions of the sector. These effects were nothing short of transformative and forced the industry to confront a series of unprecedented challenges. The research findings shed light on the extent of the disruption and the multifaceted challenges faced by airlines and airports in the wake of the pandemic. One of the most immediate and striking effects of the pandemic was the significant reduction in flight activity. This reduction was driven by a combination of factors, including government-imposed travel restrictions, lockdowns, and a sharp decline in passenger demand. Airlines had to drastically cut back on their flight schedules, leading to grounded aircraft, vacant airport terminals, and a sharp decrease in the number of flights taking off and landing at airports worldwide. One of the most glaring consequences of reduced flight activity was the substantial drop in passenger numbers. With people hesitant to travel due to health concerns and travel restrictions in place, airports saw a fraction of their usual passenger volumes. Airlines, which had built their business models around high passenger occupancy, were suddenly faced with half-empty planes and a diminished customer base. This, in turn, resulted in a significant decrease in revenue for airlines. Some airlines were even pushed to the brink of bankruptcy and required government bailouts or financial assistance to stay afloat. To mitigate these financial losses, airlines had to make difficult decisions, including layoffs and furloughs. The aviation industry is a significant employer, and the sudden and sharp reduction in flight activity meant that there was less work for airline employees.

The research delved into the various business strategies adopted by airlines and airports as they grappled with the challenges posed by the post-pandemic environment. The strategies encompassed digital transformation initiatives, cost-cutting measures, collaborations, and expansions, reflecting a multifaceted approach to adaptation. While the effectiveness of safety measures in instilling passenger confidence varied, there was optimism regarding the long-term impact of these strategies.

Marketing and communication strategies were crucial tools for airlines to rebuild passenger confidence and stimulate travel demand in the post-pandemic era. Key findings revealed that airlines relied heavily on social media posts and in-flight announcements as primary communication channels. Social media played a central role in disseminating information about safety measures, highlighting the steps taken to ensure passenger well-being, and addressing concerns in real-time. Airlines engaged with passengers through social media platforms to answer questions, provide updates, and showcase their commitment to safety. In-flight announcements were another critical channel for communicating safety protocols. Passengers were informed about health and hygiene measures before and during flights, contributing to a sense of reassurance and safety throughout their journey. Despite the effectiveness of these strategies for many passengers, the research also revealed that there is no one-size-fits-all approach to communication. Passenger perceptions and preferences regarding communication methods varied widely. This emphasized the need for continuous adaptation and improvement in these strategies to address diverse passenger perceptions effectively.

The research observed changes in customer behavior and preferences following the pandemic. Health and hygiene protocols, contactless processes, flexible booking policies, and cleanliness emerged as paramount factors influencing passenger decisions. Airlines were urged to prioritize these aspects in their operations to cater to the evolving needs of travelers. This adaptation to changing preferences is seen as essential for regaining passenger trust and stimulating travel demand in an aviation landscape forever altered by the pandemic.

Overall, the aviation industry has demonstrated resilience and adaptability in response to the challenges posed by the COVID-19 pandemic. The research findings suggest that continued efforts to prioritize safety, flexibility, and effective communication will be pivotal in regaining passenger trust and stimulating travel demand in the evolving aviation landscape. The industry's ability to embrace innovation and respond to changing customer expectations will be critical for its long-term sustainability and growth in the post-pandemic era.

## 5.3 Recommendations

Airlines and airports must commit to a continuous investment in comprehensive health and safety measures. This entails meticulous and regular sanitization not only of aircraft but also airport facilities, ensuring that all passenger touchpoints are sanitized to the highest standards. Implementing contactless services, from check-in to baggage handling and in-flight services, should be a fundamental part of this effort. Furthermore, stringent hygiene protocols for both passengers and staff, including mask mandates and hand sanitizing stations, should be rigorously enforced. However, the effectiveness of these measures heavily relies on clear and transparent communication. Airlines should make sure that passengers are well-informed about the steps taken to ensure their safety, thereby rebuilding confidence in air travel.

Acknowledging the uncertainty that travelers face, airlines should go beyond traditional booking and cancellation policies. They should consider offering more lenient terms that accommodate passengers' rapidly changing plans. Providing options for rescheduling flights or offering refunds in cases of unexpected events, such as sudden travel restrictions or illness, will not only appeal to travelers but also foster goodwill and loyalty. This adaptability in policies demonstrates an airline's commitment to supporting passengers during challenging times. Also Airlines should regularly review and adapt their communication strategies to align with evolving passenger expectations and safety standards. Effective communication through various channels, including social media, in-flight announcements, and email notifications, should remain a priority.

Collaboration within the aviation industry and with external stakeholders is crucial for resilience. Airlines and airports should actively seek and encourage partnerships with each other and health authorities. These collaborations can lead to more coordinated and effective responses during crises, resulting in improved passenger safety and service quality. Pooling resources, sharing best practices, and coordinating efforts in areas like testing and contact tracing can enhance the industry's overall ability to respond to future challenges.

The aviation sector should embrace digital transformation as an ongoing initiative to enhance the passenger experience. This entails continued investment in advanced technologies that promote touchless travel, such as contactless check-in, digital boarding passes, and cashless payment options. Streamlining processes through innovation not only reduces physical contact points but also improves overall efficiency and convenience for passengers.

Furthermore, Airlines should prioritize employee training, particularly in areas related to customer service and crisis management. Well-prepared employees are essential for providing passengers with a sense of safety and confidence during their journey. Additionally, addressing the well-being and mental health of airline staff is crucial for maintaining a motivated and resilient workforce. Employee support programs and mental health resources should be readily available to ensure the health and well-being of the aviation industry's frontline workers.

Lastly, Airlines should establish a robust system for conducting regular market research and collecting feedback from passengers. This proactive approach helps airlines stay attuned to changing passenger preferences and concerns. The insights gained from market research and customer feedback can guide the development of tailored services and safety measures that resonate with passengers, ensuring their satisfaction and loyalty. By actively listening to passengers, airlines can continually refine their strategies to meet evolving expectations and safety standards.

Incorporating these recommendations into their strategies can help airlines and airports not only recover from the challenges posed by the COVID-19 pandemic but also thrive in the post-pandemic aviation industry by meeting the evolving needs and expectations of travelers.

# **Appendix I: Questionnaire**



**UNIVERSITY OF INFORMATION AND COMMUNICATION**

 **SCHOOL OF BUSINESS**

**MASTER’S THESIS RESEARCH QUESTIONNARE**

**TOPIC: EXAMINING THE BUSINESS STRATEGIES POST COVID 19. A CASE STUDY OF THE AVIATION INDUSTRY.**

Dear respondent,

Thank you for participating in this research. The questionnaire will focus on gathering insights about the strategies implemented by the aviation industry in response to the COVID-19 pandemic. Please answer the following questions to the best of your knowledge and experiences. Your responses will remain confidential and will be used for research purposes only.

**Your participation is greatly appreciated**

**Kindly direct any queries to:**

**Phone:**

**Interviewee’s Signature: …………………………………**

**Date**…………………………………………………………

|  |
| --- |
|  |

 **QUESTIONNAIRE NUMBER**

**SECTION A: DEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS**

This section asks about your demographic profile.Give your response by filling in the blank space by tickingwhere appropriate.

1. What is your gender?

Male [ ] Female [ ]

1. What is your age? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Name of the airline\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. What is your role in the airline industry?
4. Pilot [ ]
5. Flight Attendant [ ]
6. Ground Crew [ ]
7. Maintenance and Engineering [ ]
8. Customer Service [ ]
9. Administration and Management [ ]
10. Other (please specify)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
11. How many years of experience do you have in the aviation industry?
12. Less than 1 year [ ]
13. 1-5 years [ ]
14. 6-10 years [ ]
15. 11-15 years [ ]
16. More than 15 years [ ]

**SECTION B:** **TO EXAMINE THE IMPACT COVID 19 HAD ON THE AVIATION INDUSTRY AND HOW THE INDUSTRY RESPONDED TO THAT CHANGE IN THE EXTERNAL ENVIRONMENT**

1. Did the COVID-19 pandemic affect the number of flights you operated or worked on?
2. Yes, significantly reduced [ ]
3. Yes, slightly reduced [ ]
4. No, no change in flight frequency [ ]
5. No, increased flight frequency [ ]
6. How has your organization been affected by the COVID-19 pandemic? (Select all that apply)
7. Reduced passenger numbers [ ]
8. Reduced flight operations [ ]
9. Financial losses [ ]
10. Employee layoffs/furloughs [ ]
11. Other (please specify) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
12. Did you experience any flight cancellations or disruptions during the pandemic?
13. Yes [ ]
14. No [ ]
15. How did your organization respond to the changes brought about by the COVID-19 pandemic?
16. Implemented health and safety protocols [ ]
17. Adjusted flight schedules and routes [ ]
18. Introduced new services or products [ ]
19. Sought financial assistance or government support [ ]
20. Other (please specify) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
21. How did your work responsibilities change during the pandemic?
22. Increased health and safety protocols [ ]
23. Assisting with flight cancellations and rescheduling [ ]
24. Dealing with customer inquiries and concerns related to COVID-19 [ ]
25. Handling operational changes due to travel restrictions [ ]
26. Other (please specify)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
27. How satisfied were you with the safety measures and protocols implemented by your airline during the pandemic?
28. Very satisfied [ ]
29. Satisfied [ ]
30. Neutral [ ]
31. Dissatisfied [ ]
32. Very dissatisfied [ ]
33. N/A (No significant safety measures were implemented) [ ]
34. Did the airline company provide any additional support or resources to employees during the pandemic?
35. Financial assistance [ ]
36. Mental health support [ ]
37. Remote work options [ ]
38. Personal protective equipment (PPE) [ ]
39. Other (please specify)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**SECTION C: To examine the business strategies adopted by airlines and airports to navigate the post-pandemic environment.**

1. Were you aware of any business strategies implemented by airlines and airports post-COVID-19?
2. Yes [ ]
3. No [ ]
4. What strategies did your organization adopt to navigate the post-pandemic environment?
5. Cost-cutting measures [ ]
6. Digital transformation initiatives [ ]
7. Collaborations or partnerships with other airlines or airports [ ]
8. Expansion into new markets [ ]
9. Other (please specify) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
10. How effective do you think these safety measures were in instilling confidence among travelers and employees?
11. Very effective [ ]
12. Effective [ ]
13. Neutral [ ]
14. Ineffective [ ]
15. Very ineffective [ ]
16. Do you believe the business strategies adopted by your organization during the pandemic will have a long-term impact?
17. Yes, significant long-term impact [ ]
18. Yes, some long-term impact [ ]
19. No, minimal long-term impact [ ]
20. No, no long-term impact at all [ ]

**SECTION D: Evaluate the effectiveness of marketing and communication strategies employed by airlines to regain passenger confidence and stimulate travel demand in the post-pandemic era.**

1. How has your airline communicated safety and health measures to passengers in the post-pandemic era?
2. In-flight announcements [ ]
3. Social media posts [ ]
4. Email notifications [ ]
5. Airport signage and displays [ ]
6. Pre-flight communication (e.g., emails, text messages) [ ]
7. Others (please specify)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. How frequently were these marketing and communication strategies updated or revised during the post-pandemic period?
9. Frequently (Every few weeks) [ ]
10. Occasionally (Once a month) [ ]
11. Rarely (Every few months) [ ]
12. Not applicable (No involvement in marketing or communication) [ ]
13. How would you rate the effectiveness of these communication methods in reassuring passengers about their safety during travel? (S
14. Very effective [ ]
15. Effective [ ]
16. Neutral [ ]
17. Ineffective [ ]
18. Very ineffective [ ]

**SECTION E:** **EXPLORE THE CHANGES IN CUSTOMER BEHAVIOR AND PREFERENCES IN THE AVIATION INDUSTRY FOLLOWING THE COVID-19 PANDEMIC, AND IDENTIFY STRATEGIES FOR AIRLINES TO ADAPT AND CATER TO THE EVOLVING NEEDS OF TRAVELERS.**

1. As an airline worker, have you noticed any significant changes in customer behavior and preferences since the COVID-19 pandemic?
2. Yes, significant changes [ ]
3. Yes, some changes [ ]
4. No noticeable changes [ ]
5. Not applicable (Not directly involved in customer interactions) [ ]
6. In your experience, how has the frequency of air travel by passengers changed since the onset of the COVID-19 pandemic?
7. Decreased significantly
8. Decreased moderately
9. Remained the same
10. Increased moderately
11. Increased significantly
12. From your perspective, which factors have become more important for passengers when choosing an airline post-COVID-19?
13. Safety and cleanliness
14. Flexible booking and cancellation policies
15. Health and hygiene protocols
16. Contactless check-in and boarding
17. Seat distancing
18. In-flight entertainment options
19. Other (please specify): \_\_\_\_

**The end, Thank you for participating in this survey!!**

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