INNOVATION PROJECT IMPLEMENTATION AND FINANCIAL PERFORMANCE OF STATE-OWNED AIRLINES: A CASE OF KENYA AIRWAYS

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An Applied Research Project Submitted in Partial Fulfilment of the Requirements for the Award of Master of Business Administration Degree in the Business School of Africa Nazarene University

June 2025

DECLARATION

This research project is my original work and has not been presented for the award of any diploma or conferment of a degree or Master's in this or any other institution.

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SUPERVISORS DECLARATION

This research project has been submitted for examination with our approval as the University supervisors.

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DEDICATION

This research project is dedicated to my late father Dr. Crispo Henry Oloo, my husband Mr. Hillary Lisimba Ambani, and my son Milan Crispo Ambani, whose unconditional love and support have motivated and encouraged me.

ACKNOWLEDGEMENT

First, I thank God for his grace and guidance and for being my source of strength throughout this journey. My sincere gratitude also goes to my supervisors, Dr. Lucy Kirima and Dr. Moses Owino, for their guidance, patience, and tireless efforts to see me through this process. I also thank the entire administration and management of Africa Nazarene University for their cooperation and sacrifice towards the contribution of my proposal. I am deeply indebted to many others, including my friends, for support and consultations on this work. I will be forever grateful.

ABSTRACT

The airline industry is a key contributor to Kenya's economic development and GDP growth. However, it continues to face rapid transformations driven by technological advancements and sustainability demands. This study assessed the impact of project implementation on the financial performance of Kenya Airways (KQ), focusing on three strategic initiatives: the adoption of digital solutions, enhancement of in-flight entertainment systems, and implementation of eco-friendly practices. Additionally, the study examined the influence of external environmental factors on the success of these projects. Using a mixed-methods explanatory research design, both qualitative and quantitative data were collected from a census sample of 40 employees and management staff through semi-structured questionnaires and in-depth interviews. Data analysis was conducted using STATA, with multiple regression employed to determine the relationship between project implementation variables and financial performance. The findings revealed that none of the three project implementation areas—digital solutions, in-flight entertainment, and eco-friendly practices—had a statistically significant influence on the perceived improvement in KQ's digital revenue. The overall regression model was not statistically significant ($F(5,34) = 0.99$, $p = 0.4361$), with an R-squared value of 0.1275, indicating that only 12.75% of the variance in financial performance could be explained by the variables under study. Diagnostic tests confirmed the absence of heteroscedasticity and supported the normality of residuals, thus validating the regression assumptions. These findings suggest that while project implementation is central to KQ's modernization agenda, its financial outcomes may be affected by external variables or require a longer period to manifest. The study concludes that project outcomes should be evaluated beyond immediate revenue gains, focusing instead on strategic goals such as customer satisfaction and operational efficiency. The study provides theoretical and practical insights for policymakers and stakeholders seeking to align project execution with sustainable financial performance in the airline industry.

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LIST OF ABBREVIATION AND ACRONYMS

AI	Artificial Intelligence
IATA	International Air Transport Association
IFE	In-flight entertainment
JKIA	Jomo Kenyatta International Airport
KQ	Kenya Airways
ML	Machine Learning
NACOSTI	National Commission for Science, Technology, and Innovation
RBV	Resource-Based View
SAFs	Sustainable Aviation Fuels

OPERATIONAL DEFINITION OF TERMS

Digital Solutions: These are technology-driven initiatives aimed at improving operational processes, enhancing customer service, and increasing overall efficiency. Examples include online booking systems, mobile check-ins, and advanced data analytics for predictive maintenance (Zhang et al., 2020).

Eco-Friendly Practices: Initiatives aimed at reducing the environmental footprint of airline operations. These include the use of biofuels, efficient aircraft designs, and waste reduction programs (Dagiliūtė et al., 2021).

Operational Efficiency: This refers to the ability of an airline to minimize costs while maximizing productivity and service quality. Operational efficiency is crucial for maintaining profitability and competitiveness in a highly competitive market (Graham, 2019).

Passenger Experience: This encompasses all aspects of a passenger's journey, including booking, check-in, in-flight services, and post-flight interactions. Enhancing passenger experience is vital for customer retention and brand loyalty (Chang & Chen, 2020).

Sustainability: In the context of the airline industry, sustainability involves implementing practices that reduce environmental impact, such as lowering carbon emissions, minimizing waste, and adopting sustainable fuel alternatives (ICAO, 2021).

Financial position: The financial position of a company can be seen through the company’s financial statements. The balance sheet, which is one of the financial statements, shows the current balance of the recorded assets, liabilities, and equity accounts of an organization.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

The airline industry is a critical component of global transportation, facilitating the movement of people and goods across vast distances. Over the past few decades, the industry has undergone significant changes driven by technological advancements, regulatory reforms, and evolving consumer preferences. Airlines worldwide are compelled to innovate continually to maintain operational efficiency, enhance passenger experiences, and address growing concerns about sustainability (IATA, 2020). These innovations often take the form of various projects, ranging from digital transformation initiatives to the adoption of eco-friendly practices. Globally, the airline industry has seen remarkable growth, driven by increasing demand for air travel and globalization. According to the International Air Transport Association (IATA), the number of passengers is expected to reach 8.2 billion by 2037, nearly doubling current levels (IATA, 2019). This growth presents both opportunities and challenges for airlines, necessitating continuous innovation and adaptation.

The global airline industry has rapidly transformed through the integration of technological innovations aimed at boosting both environmental sustainability and financial performance. Innovations such as digitalization, predictive maintenance, and the adoption of Sustainable Aviation Fuels (SAFs) have enabled leading global carriers to streamline operations and reduce carbon emissions while improving profitability (International Air Transport Association [IATA], 2023).

For instance, Delta Airlines implemented predictive maintenance technology, reducing unscheduled maintenance by 15%, which led to a significant reduction in operational costs (Boeing, 2021). Lufthansa similarly used digital tools like AI-driven analytics to predict technical failures and optimize fuel usage, saving the airline approximately $10 million annually (Thompson, 2020). These innovations demonstrate that strategic investments in digital

technologies and eco-friendly practices can directly influence the financial health of global airlines by reducing costs and improving customer satisfaction.

In addition, the global trend toward sustainable practices in aviation is highlighted by the International Civil Aviation Organization's Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), which mandates that airlines curb carbon emissions from international flights. Airlines have responded by increasing SAF usage, adopting lighter aircraft materials, and optimizing flight paths (ICAO, 2022). For example, British Airways reported a 28% reduction in operational costs following investments in sustainable aircraft and the integration of digital booking and fuel-monitoring systems (Airbus, 2021).

In Africa, the narrative of innovation and sustainability in aviation is nuanced by systemic challenges, including limited financial resources, regulatory bottlenecks, and infrastructural deficits. Nevertheless, leading African airlines have made progress in aligning innovation with financial goals. Ethiopian Airlines stands out as a continental leader in technological adoption. The airline has embraced fuel-efficient aircraft such as the Boeing 787 Dreamliner, reducing operational costs and carbon emissions by 20% (Dagiliūtė et al., 2021). Furthermore, the integration of digital systems in customer service—such as mobile check-ins and real-time booking updates—has enhanced the user experience and improved profitability. Abate (2020) notes that Ethiopian Airlines' investment in IT infrastructure and fleet modernization has positioned it as one of the few consistently profitable airlines in Africa.

Similarly, South African Airways (SAA) has implemented restructuring plans that include the adoption of cost-reduction digital tools and partnerships for in-flight service upgrades. Although SAA has faced long-standing financial instability, these innovations are part of a broader effort to improve financial performance (Smith, 2021). In Morocco, Royal Air Maroc has expanded its route network and invested in SAF programs, thereby reducing environmental impacts while increasing customer loyalty and route profitability (Boubker & Naoui, 2022).

Despite these gains, African airlines still grapple with external shocks such as fluctuating fuel prices and currency depreciation, which limit the effectiveness of innovation-driven strategies.

Moreover, the fragmented regulatory environment and inconsistent government support hinder the widespread adoption of eco-friendly aviation practices across the continent (Karanja & Ngugi, 2021).

Kenya Airways (KQ), as the national carrier, offers a unique lens through which to examine the interface between innovation, sustainability, and financial performance in a state-owned African airline. KQ has initiated several innovation-driven projects, such as the adoption of digital booking platforms, mobile check-in systems, and in-flight entertainment enhancements aimed at boosting customer experience and operational efficiency (Mwanza & Nganga, 2021).

In terms of eco-practices, KQ has pursued initiatives like adopting fuel-efficient aircraft and exploring SAFs. While commendable, the financial benefits of these innovations have been difficult to quantify due to persistent losses and a high debt burden. Nthenya and Donze (2022) argue that Kenya Airways' challenges stem not only from operational inefficiencies but also from weak execution of innovation strategies and external economic shocks, such as the COVID-19 pandemic and fuel price volatility.

Comparative evidence shows that whereas global airlines like Delta and Lufthansa derive immediate financial gains from innovation, KQ's outcomes are tempered by structural and managerial bottlenecks. For example, while British Airways increased profitability by over 6% after implementing new IFE systems (Boeing, 2019), KQ's similar efforts have not yielded measurable financial improvement, partly due to high capital costs and limited market differentiation (Ndungu, 2020).

Furthermore, external environmental factors such as political uncertainty, regulatory inefficiencies, and infrastructural limitations in Kenya have further complicated the return on investment in innovation. These contextual challenges reduce the financial impact of eco-friendly and digital transformations at KQ compared to more developed regions (Wachira, 2020).

This chapter introduces a discussion on the innovation project implementation and financial position of state-owned airlines, focusing on the case of Kenya Airways, headquartered in Nairobi, Kenya. The chapter is divided as follows: background of the study; financial performance,

innovation projects implementation, a profile of Kenya Airways, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, scope of the study, delimitation of the study, limitations of the study, assumptions of the study, theoretical framework, and finally, the conceptual framework.

1.2 Background Information

The airline industry is characterized by rapid evolution driven by technological advancements, regulatory changes, and shifting consumer expectations. Airlines must innovate to maintain operational efficiency, enhance passenger experiences, and address sustainability concerns. This study focuses on Kenya Airways, examining the impact of various projects on its financial stability and competitiveness. By exploring digital solutions, in-flight entertainment, and eco-friendly practices, the research aims to provide insights into effective project implementation strategies that can help Kenya Airways and other state-owned airlines navigate the complexities of the modern aviation landscape.

Airlines heavily invest in digital transformation to boost operational efficiency and customer experience. Utilizing artificial intelligence (AI) and machine learning (ML) for predictive maintenance can significantly reduce downtime and maintenance costs (Airlines, 2019). Moreover, advancements in in-flight entertainment systems and personalized services will enhance the passenger experience, making air travel more enjoyable and convenient (Graham, 2019). Sustainability is a critical focus for the aviation industry, contributing approximately 2-3% of global carbon emissions (ICAO, 2021). To mitigate environmental impact, airlines are adopting eco-friendly practices such as using sustainable aviation fuels (SAF), implementing carbon offset programs, and operating more fuel-efficient aircraft (Dagiliūtė *et al.,* 2021). These initiatives reflect the industry's commitment to reducing its environmental footprint while maintaining high standards of service and efficiency.

The aviation industry is characterized by both immense potential and significant challenges. Globally, airlines such as Qatar Airways, British Airways, and KLM have embarked on various projects to improve operational efficiency, customer satisfaction, and sustainability. In 2022, Qatar Airways launched a voluntary Carbon Offset Program for its corporate and trade clients. This was

aimed at enabling corporate and trade clients to offset their carbon emissions through a dedicated web portal (Qatar Airways, 2022).

Within Africa, major airlines such as Ethiopian Airlines, South African Airways, and Royal Air Maroc are key players in connecting Africa to the rest of the world. For instance, Ethiopian Airlines has made significant strides in fleet modernization, adopting fuel-efficient aircraft like the Boeing 787 Dreamliner to reduce operational costs and environmental impact. The airline has also invested in digital transformation initiatives, including online booking systems and mobile applications, to enhance passenger experience and streamline operations (Abate, 2020).

South African Airways has focused on restructuring and adopting strategic partnerships to maintain its competitive edge. The airline has implemented cost-reduction programs and invested in improving in-flight services and customer experience (Smith, 2020). In Morocco, Royal Air Maroc has expanded its route network and modernized its fleet to increase its market reach and operational efficiency. Additionally, Morocco has prioritized the growth and expansion of its airport since the industry was liberalized, which has improved collaboration between the tourism and airport sectors (Boubker, Omar and Khaled, 2022). The airline has also invested in sustainability initiatives, such as using biofuels and implementing carbon offset programs, to reduce its environmental footprint (Benbrahim, 2019).

Kenya's aviation sector plays a crucial role in the country's economic development intended to facilitate trade, tourism, and connectivity. Apart from Kenya Airways, other key airlines in the country include Jambo jet and Fly540. These airlines have undertaken various projects to enhance their competitiveness and operational efficiency. Jambo Jet, a low-cost carrier, has focused on expanding its domestic and regional routes. The airline has invested in modernizing its fleet and adopting digital solutions such as online booking and mobile check-in to improve customer experience (Otieno, 2020). Fly540 has focused on expanding its route network and improving operational efficiency. The airline has implemented cost-reduction measures and invested in fleet modernization to enhance its competitiveness in the regional market (Mwangi, 2019).

Kenya Airways, the flag carrier of Kenya, offers a unique context to explore the impact of project implementation on financial stability and competitiveness. Founded in 1977, the airline has grown to become one of Africa's leading carriers, connecting the continent to major global destinations. However, like many state-owned airlines, Kenya Airways faces significant challenges, including financial instability, operational inefficiencies, and intense competition from both regional and international airlines (Wachira, 2020). In recent years, Kenya Airways has embarked on several digital transformation projects aimed at enhancing operational efficiency and passenger experience. These initiatives include the adoption of online booking systems, mobile check-in options, and the implementation of advanced data analytics for route optimization and predictive maintenance (Mwanza & Nganga, 2021).

To enhance passenger experience, Kenya Airways has invested in upgrading its in-flight entertainment systems and introducing personalized services. These improvements are designed to increase customer satisfaction and loyalty, which are critical for the airline's competitive positioning (Ndungu, 2020). Sustainability is a key focus area for Kenya Airways. The airline has initiated several projects aimed at reducing its environmental footprint. These include the adoption of fuel-efficient aircraft, implementation of waste reduction programs, and exploration of sustainable aviation fuels (Karanja & Ngugi, 2021).

Despite these initiatives, Kenya Airways has struggled with financial instability. The airline has reported recurring losses, attributed to high operational costs, debt servicing, and competition from low-cost carriers (Mwanza & Nganga, 2021). These financial challenges highlight the need for effective project implementation that not only enhances operational efficiency and passenger experience but also contributes to financial stability. One of the significant projects undertaken by Kenya Airways is fleet modernization. By upgrading its fleet to include more fuel-efficient aircraft, the airline aims to reduce operational costs and improve environmental performance. However, the financial impact of such projects needs careful evaluation to ensure that the benefits outweigh the costs (Mwanza & Nganga, 2021).

Expanding route networks is another strategy employed by Kenya Airways to increase market reach and revenue. While this can enhance the airline's competitive edge, it also requires

substantial investment and risk management to ensure profitability (Ndungu, 2020). Effective cost management is crucial for the financial sustainability of Kenya Airways. Implementing strategies such as cost reduction programs, operational efficiency improvements, and strategic partnerships can help the airline manage expenses and improve profitability (Karanja & Ngugi, 2021).

One of the most competitive sectors in the world is the aviation industry. Any airline's primary objective is to maximize market share relative to its operational capacity while minimizing operating expenses. Airlines make an effort to ensure that consumers are satisfied at every stage of the flying experience because they are not offering a uniform tangible product but rather services. To increase their efficacy, attract more passengers, and more effectively compete with other airlines, the corporations were forced to digitize their processes, strategy, marketing, and products. Given that 35% of airports and 58% of airlines have already put a digital strategy into place, digital transformation may be considered a trend (Zacharaki, 2023). In order to keep the business viable and lucrative, digital transformation can be a driving factor for bettering revenue streams. Airlines are reducing the costs associated with distribution, ticket issuance, and reconciliation by implementing new technology, including AI and IoT-driven solutions.

Digital in-flight amenities like internet access and entertainment platforms that include movies, music, and games benefit passengers and increase the likelihood that they will choose the same airline again. The majority of airlines have developed mobile applications that allow users to book flights instantly, obtain all the information they need about the flights, and keep up with the newest deals and/or new locations. Additionally, travelers have the option to register for loyalty programs, provide their personal information, and receive member-only benefits. These programs move customers one step closer to purchasing tickets and foster a deep bond with the business. Being active on social media helps the airline get vital information about its customers, including their thoughts, suggestions, and plans (Zacharaki, 2023).

The performance of airlines has also been significantly impacted by environmental issues. Air pollution emissions have increased in tandem with the growth of aircraft and airport usage during the past few decades. In order to stay competitive, airlines have had to modify their rules to accommodate ESG-conscious consumers due to the established connection between exposure to

air pollutants and increased negative health impacts (Brtnický *et al.,* 2020). Airports pollute nearby water bodies as a result of their extensive handling of jet fuel and deicing chemicals. Humans are poisoned by the ozone and ultrafine particles that airlines produce. When avgas is burned in general aviation piston engines, dangerous lead is released into the environment. As a result, many travelers who care about the environment avoid airlines that operate aircraft that emit significant amounts of pollutants into the atmosphere. Airlines have a major role in climate change, which has also resulted in warmer, drier weather and increased drought. This study will look at the implementation of eco-friendly practices solutions in Kenya Airways.

1.2.1 Financial Performance

Kasomba and Omagwa (2022), revealed that financial performance, which is often represented by important financial indicators, is the firm's capacity to use its operational and investment operations to attain financial stability. It is noteworthy that the institution's ultimate goal is financial achievement. This lofty objective is the aim of all its planned activities and tactics. This is not to say, however, that airlines and other financial organizations have no other objectives. Using ratios to measure financial success is part of the process. The two most often used are return on assets and profit margins. For the aviation sector to reduce operating costs and increase profit margins, efficacy and efficiency in financial operations are essential.

Increased income raises the amount of inner financing. Successful businesses build up internal reserves, which reduces their dependency on outside resources. Profitable businesses could have easier access to outside capital, but if new projects can be financed with saved money, there might be less need for debt financing. Rich businesses would rather have internal funding than outside capital. Africa is expected to be the worst area, with airlines reporting a slightly increased net loss of $300 million in 2019 compared to a $400 million net loss in 2018. Global airlines are profitable, while African carriers have not generated any money together since 2010. The airlines should use an unfavorable selection criterion to guarantee that costs are maintained to a minimum to improve the company's financial performance (Kasomba and Omagwa, 2022).

Cocis *et al.* (2021), revealed that a company's market value may be maximized, a financial balance can be ensured, and the industry in which businesses operate can be improved by evaluating

financial performance and equilibrium using historical financial data. Information on the company's health, hazards, and profit is provided through financial indicators. Prissia and Daryanto (2020), stated airlines' financial performance drives strategic planning and affects both short- and long-term business choices in Indonesia. Better, more thorough financial performance evaluation aids in airline strategy planning. Financial ratios are employed for a variety of reasons, such as determining a company's capacity to repay debt, assessing managerial and corporate performance, and even enforcing performance regulations. The capacity of the business to meet all expenses and generate some returns in relation to sales or investments is demonstrated by profitability. The idea underlying profitability is that the likelihood of a business failing decreases with increasing profitability.

1.2.2 Innovation project implementation

Innovation is the act of coming up with new concepts, procedures, or goods and is essential for the developing world to satisfy the demands of a population that is growing every day. Innovation is essential to an organization's development, reputation, and capacity for success. The conditions for the introduction of numerous surveys of innovation in both developed and emerging countries are currently quickly shifting. Research and development (R&D) investment, firm-level innovation, and the characteristics of innovative organizations have all been shown to benefit greatly from these surveys (Aslam *et al.,* 2022).

Amankwah-Amoah (2021), revealed that the international airline sector demonstrated certain COVID-inspired procedures and product innovations that were put into place in an effort to address the situation. Despite the disruption of long-standing routines and procedures brought about by the crisis, staff seem to have been motivated to welcome change by the risks to the future of several international airlines. Throughout the value chain, international airlines have innovated in response to the crisis. Inflight social distancing, UV disinfection of airplanes, touchless technology at airports, an open-middle-seat policy, fast biometric check-in, and COVID-19 insurance are only a few of the numerous ideas that have resulted from the crisis or COVID-19-inspired developments. When introducing new procedures, many firms have embraced innovation by asking partners, consumers, and governments for their opinions.

Innovation Drivers

i. Size and age of firms

Demeubayeva (2023), stated that young and tiny businesses are typically seen as the primary forces behind innovation as they frequently generate "ideas" that are novel for the global marketplace. On the other side, creative start-ups that fail frequently run out of money and leave the industry. As a result, not just tiny businesses produce the most inventions. International businesses are always investing in the creation of new goods and cutting-edge technologies that are more expensive and challenging to adopt and develop. In general, small businesses are driven to innovate and earn a profit, whereas larger businesses want to develop their goods to stay competitive.

ii. Type of ownership

Demeubayeva (2023), stated that the ownership structure of the company is another crucial feature. Generally speaking, businesses that grow internationally and have foreign ownership are anticipated to innovate more. Foreign companies are more likely to acquire information from other countries than to possess more expertise than domestically held companies. A different kind of ownership separates businesses into those owned by the government and those owned by private citizens. It is frequently less common for state-owned businesses to launch novel goods or procedures. The anticipated huge earnings from innovative products and procedures are what drive entrepreneurs. Private companies are therefore more financially motivated to innovate than state-owned companies.

iii. Business Environment

Demeubayeva (2023), asserted that the business environment is one of the external elements that affects a firm's capacity to innovate. The cost of introducing new goods and procedures can be significantly increased by elements including trade laws, corruption, inadequate legislation, and specific customs. As a result, settings with weak property rights protection or hyperinflation would

inhibit innovation-based growth since they will reduce enterprises' incentives and capacity for innovation.

1.2.3 Innovation Projects Implementation and Financial Position

Digital in-flight amenities like internet access and entertainment platforms that include movies, music, and games benefit passengers and increase the likelihood that they will choose the same airline again. The majority of airlines have developed mobile applications that allow users to book flights instantly, obtain all the information they need about the flights, and keep up with the newest deals and/or new locations. Additionally, travelers have the option to register for loyalty programs, provide their personal information, and receive member-only benefits. These programs move customers one step closer to purchasing tickets and foster a deep bond with the business. Being active on social media helps the airline get vital information about its customers, including their thoughts, suggestions, and plans (Zacharaki, 2023).

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1.2.4 Profile of Kenya Airways

Kenya Airways, the flag carrier of Kenya, offers a unique context to explore the impact of project implementation on financial stability and competitiveness. Founded in 1977, the airline has grown to become one of Africa's leading carriers, connecting the continent to major global destinations. However, like many state-owned airlines, Kenya Airways faces significant challenges, including financial instability, operational inefficiencies, and intense competition from both regional and

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Expanding route networks is another strategy employed by Kenya Airways to increase market reach and revenue. While this can enhance the airline's competitive edge, it also requires substantial investment and risk management to ensure profitability (Ndungu, 2020). Effective cost management is crucial for the financial sustainability of Kenya Airways. Implementing strategies such as cost reduction programs, operational efficiency improvements, and strategic partnerships can help the airline manage expenses and improve profitability (Karanja & Ngugi, 2021). the corporations were forced to digitize their processes, strategy, marketing, and products. Given that

35% of airports and 58% of airlines have already put a digital strategy into place, digital transformation may be considered a trend (Zacharaki, 2023). To keep the business viable and lucrative, digital transformation can be a driving factor for bettering revenue streams. Airlines are reducing the costs associated with distribution, ticket issuance, and reconciliation by implementing new technology, including AI and IoT-driven solutions.

1.3 Statement of the problem

Kenya Airways (KQ), a prominent state-owned airline in East Africa, has faced significant challenges that have had profound implications for its financial stability and operational sustainability.

The financial position of an airline is important because it directly impacts its ability to operate efficiently without distractions. It determines the airline's ability to grow by attracting investors, enhancing its reputation, and its competitiveness in the industry.

Financial position is usually measured by checking company revenue, profitability, cash flow, and return on investment. This helps to analyze how well a company is generating profits and, inevitably, how it is achieving financial goals. Despite its strategic importance as the flag carrier of Kenya, KQ has encountered a myriad of obstacles in recent years, leading to recurrent financial losses and diminished competitiveness in the global aviation market (Nthenya & Donze, 2022).

Therefore, this study aims to investigate the effects of project implementation on the financial position of Kenya Airways, with a specific focus on identifying the key drivers of success or failure in past initiatives. Through analyzing factors such as fleet management, route optimization, revenue diversification, and cost containment measures, this research seeks to provide actionable insights and recommendations to guide future strategic decision-making within Kenya Airways and inform broader policy discussions aimed at revitalizing the East African aviation sector (Nthenya & Donze, 2022). This requires a comprehensive examination of the challenges facing KQ and emphasizes the importance of addressing these issues to ensure the airline's continued contribution to Kenya's economic development and regional connectivity.

1.4 Objectives of the study

The primary objective of this study was to investigate the impact of project implementation of the financial performance of Airline companies: A case of Kenya Airways (KQ).

1.5 Specific Objectives of the Study

This study was guided by the objectives below:

i. To determine the impact of the Adoption of Digital Solutions on the financial performance of state-owned airlines in Africa.
ii. To evaluate the impact of the Enhancement of In-Flight Entertainment Systems Solutions on the financial performance of state-owned airlines in Africa.
iii. To analyze the impact of the Implementation of Eco-Friendly Practices Solutions on the financial performance of state-owned airlines in Africa.

1.6 Hypothesis

The study tested the following null hypothesis

H_{01}: There is no significant effect of the adoption of digital solutions on the financial performance of Kenya Airways.
H_{02}: There is no significant effect of in-flight entertainment systems on the financial performance of Kenya Airways.
H_{03}: There is no significant effect of eco-friendly practices on the financial performance of Kenya Airways.

1.7 Significance of the study

The benefit of this study was to contribute to the existing body of literature on the financial performance of airline firms. By reiterating foundational concepts explored in related studies that examined the execution of innovation projects and their financial outcomes in other industries,

academic scholars were able to rely on the findings of this study as a credible reference. In light of the gaps identified, other researchers potentially utilized the results to inform and guide their own areas of investigation.

Furthermore, the study's conclusions and recommendations were applicable to aviation regulators seeking to improve their engagement and collaboration with other service providers, thereby supporting the financial performance of airline firms. These engagement and cooperation strategies could have been translated into policy frameworks grounded in the study's findings. The Kenya Civil Aviation Authority, in particular, was able to draw on the study's insights to make informed decisions regarding modern oversight practices.

1.8 Scope of the study

This study focused on the effect of innovation project implementation on the financial performance of airline companies. The research was conducted at the Kenya Airways Headquarters in Embakasi, Nairobi, which served as the central hub for the airline's financial operations. The headquarters housed the Finance Department, which was primarily responsible for managing and overseeing the airline's financial records, transactions, and overall financial performance. As the core department in charge of financial matters, it played a pivotal role in shaping the financial health of the airline, making it the most suitable location for the study.

The specific objectives of the study included determining the impact of the adoption of digital solutions on the financial position of Kenya Airways (KQ), evaluating the impact of enhancement system solutions on the financial position of KQ, and analyzing the impact of the implementation of eco-friendly practices on the financial position of KQ. The target population consisted of 40 respondents, including 5 regional managers, 5 finance managers, 5 sales executives, and 25 reservation agents. The study period spanned from March 2025 to April 2025.

1.9 Limitations of the Study

Some service providers were reluctant or unwilling to share sensitive organizational information, which raised concerns during the study. The researcher reassured them that the information provided would be kept confidential and that the study was conducted solely for academic purposes. To support this, the researcher provided the university's consent letter as proof that the research was intended strictly for academic use. Additionally, since some organizations had confidentiality policies that restricted respondents from disclosing safety-related data, another limitation of the study was the difficulty in extracting detailed information on the performance of these service providers.

1.10 Delimitation of the Study

The primary focus of the study was on how project implementation influenced the financial position of Kenya Airways. This focus limited the study to a specific aspect of financial performance, which allowed for a more in-depth analysis of how project execution—such as investments in new routes, fleet acquisition, or technological upgrades—directly impacted profitability, liquidity, and overall financial stability. Another important delimitation was the use of a descriptive research design. This design was selected to provide an accurate account of the relationship between project implementation and financial outcomes by systematically describing the existing situation without manipulating any variables. By employing a descriptive approach, the study collected data that reflected real-world conditions at Kenya Airways, offering a clear snapshot of financial performance following project implementation. This approach was essential to understanding the specific financial outcomes associated with various projects within the airline.

1.11 Assumptions of the study

It was assumed that the projects implemented by Kenya Airways—such as digital solutions, in-flight entertainment enhancements, and eco-friendly practices—had been executed as planned without significant deviations or interruptions. This assumption was critical for accurately

evaluating the effectiveness of these projects. If the projects had not been implemented as intended, it could have led to inaccurate assessments of their impact on financial performance.

In addition, the study assumed a causal relationship between the implementation of projects (independent variable) and the financial performance of Kenya Airways (dependent variable). The aim was to identify the impact of project implementation on financial performance, thereby implying a cause-and-effect relationship. This assumption formed the basis for using regression analysis to quantify the impact of various projects.

Furthermore, it was assumed that respondents had provided honest and unbiased responses in both surveys and interviews. The accuracy and reliability of the qualitative data relied heavily on the honesty of the participants involved in the study.

1.12 Theoretical Review

The theoretical literature review for this study will delve into understanding the impact of project implementation on the financial position of Kenya Airways. The theories used for this study include the Resource-Based View (RBV), Stakeholder Theory, and Contingency Theory.

1.12.1 Resource-Based View (RBV)

The Resource-Based View (RBV) posited that an organization's resources and capabilities were critical determinants of its competitive advantage and overall performance. This theory emphasized that resources needed to be valuable, rare, inimitable, and non-substitutable (Barney, 1991).

In the context of Kenya Airways, fleet modernization represented a significant investment in valuable and rare resources that enhanced operational efficiency and financial performance. Modern aircraft were considered valuable due to their high efficiency and reduced maintenance costs, and they were also rare and difficult for competitors to imitate quickly, thus providing a competitive edge. Additionally, the implementation of digital solutions such as online booking systems and advanced data analytics leveraged technological capabilities to improve customer

experience and streamline operations. These digital tools functioned as intangible assets that contributed to higher operational efficiency and customer satisfaction, aligning with the RBV framework.

Assessing the impact of fleet modernization on financial performance aligned with RBV by examining how investing in valuable and rare resources (modern aircraft) influenced profitability and efficiency. Similarly, evaluating the effects of route expansion projects on profitability was also consistent with RBV, as expanding routes constituted an investment in valuable resources capable of generating new revenue streams.

1.12.2 Stakeholder Theory

Stakeholder Theory emphasized the importance of managing relationships with various stakeholders to achieve organizational success (Freeman, 1984). This theory suggested that organizations should consider the interests of all stakeholders—including employees, customers, suppliers, and the community—rather than focusing solely on shareholders.

For Kenya Airways, engaging stakeholders such as employees, customers, and regulatory bodies was crucial for the successful implementation of projects. Effective stakeholder management led to better project outcomes, an enhanced reputation, and improved financial performance. For example, fleet modernization projects required extensive collaboration with aircraft manufacturers, regulatory bodies, and employee unions. By considering and addressing the concerns and interests of these stakeholders, Kenya Airways ensured smoother project implementation and higher levels of acceptance among stakeholders.

Challenges and constraints encountered during project implementation were analyzed through the lens of Stakeholder Theory. Understanding stakeholder perspectives and addressing their concerns helped mitigate challenges and enhance project success. For instance, involving employees in the planning and execution phases of digital transformation projects led to stronger buy-in and smoother transitions. Analyzing the role of cost management strategies in improving operational efficiency also benefited from Stakeholder Theory, as aligning cost-saving measures with stakeholder interests contributed to more sustainable and widely supported outcomes.

1.12.3 Contingency Theory

Contingency Theory posited that there was no one-size-fits-all approach to organizational management and that effective strategies depended on the specific context and conditions faced by an organization (Fiedler, 1964). This theory suggested that the success of management practices, including project implementation, was contingent upon various internal and external factors.

For Kenya Airways, the success of project implementation strategies such as fleet modernization and route expansion depended on several contingencies, including market conditions, the regulatory environment, and organizational capabilities. For example, the profitability of new route expansions depended on market demand, competitive dynamics, and the regulatory landscape in the targeted regions. Similarly, the benefits of fleet modernization were influenced by the availability of financing, fluctuations in fuel prices, and technological advancements in aircraft design.

Evaluating the effects of route expansion projects on profitability through the lens of Contingency Theory involved assessing how external factors such as market demand and competition shaped project outcomes. Providing recommendations for enhancing financial stability and competitiveness required careful consideration of the unique contingencies faced by Kenya Airways, such as its market position and regulatory context. For instance, specific contingency factors dictated whether Kenya Airways prioritized certain markets over others or invested in particular types of aircraft that aligned with its strategic objectives.

Incorporating the Resource-Based View, Stakeholder Theory, and Contingency Theory into the theoretical framework provided a comprehensive approach to understanding the impact of project implementation on the financial position of Kenya Airways. Each theory offered valuable insights into how strategic resource management, stakeholder engagement, and contextual factors influenced the success of projects and, ultimately, the airline's financial performance.

1.13 Conceptual Framework

The conceptual framework for this study illustrates the relationship between the independent and dependent variables and their respective sub-variables. The framework aims to demonstrate how implementation initiatives impact financial position.

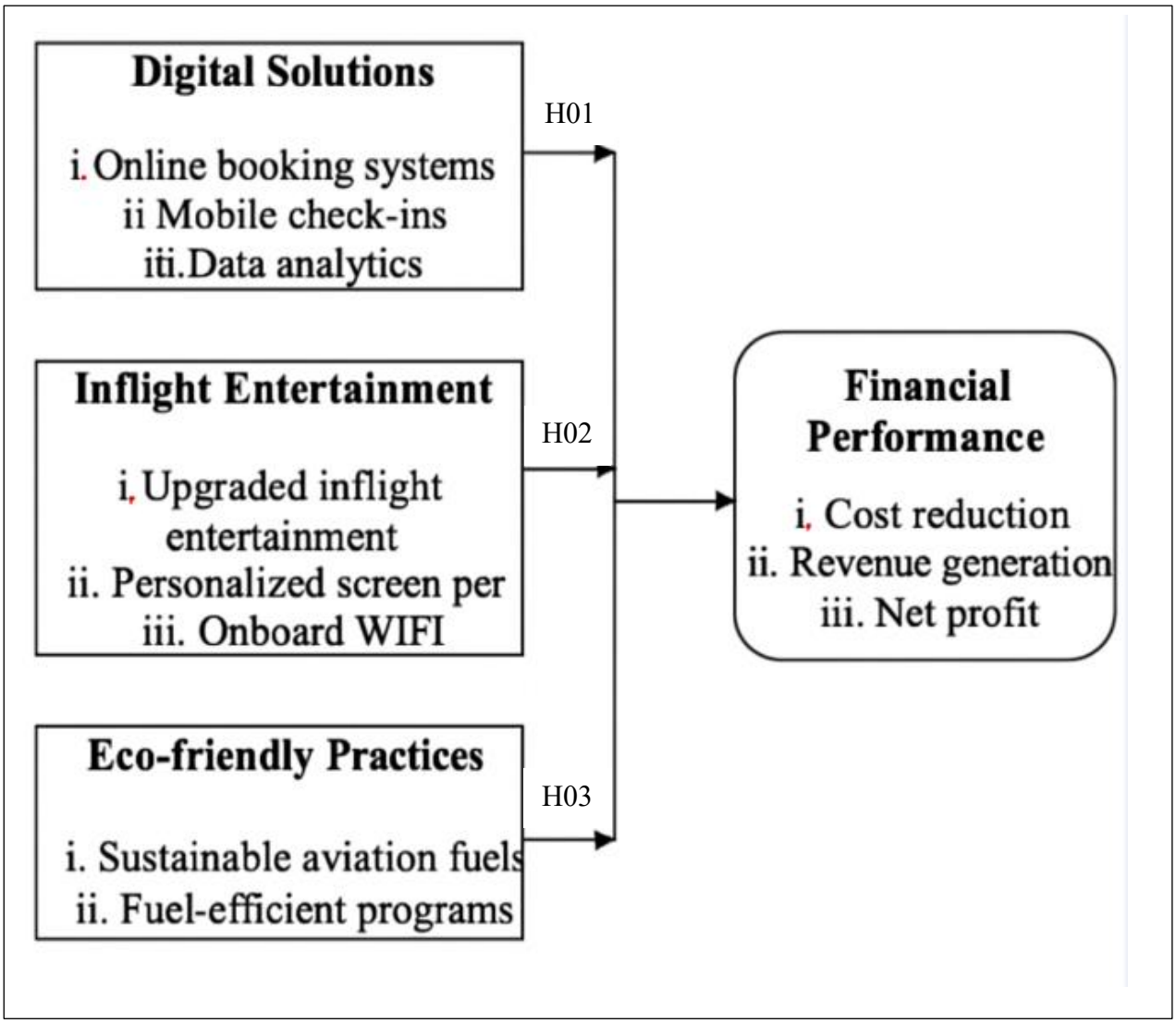

Figure 1.1: Conceptual Framework

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter examined the impact of project implementation on the financial performance of Kenya Airways, focusing on theoretical literature and empirical literature on the specific objectives, namely the adoption of digital solutions, the enhancement of in-flight entertainment systems, the implementation of eco-friendly practices, and environmental factors. Each section explored the relevant literature on these areas, illustrating how they contribute to the airline's operational efficiency, revenue generation, and overall financial stability.

2.2 Empirical literature review

The empirical literature review for this study was used to delve more into understanding of the impact of project implementation on the financial position of Kenya Airways, the objectives of the study, the adoption of digital solutions, the enhancement of in-flight entertainment systems, the implementation of eco-friendly practices, and the environmental factors affecting project implementation will be discussed using empirical studies.

2.2.1 Impact of Digital Solutions Project Implementation on Financial Performance

Digital transformation has become a cornerstone in modern aviation, with airlines increasingly investing in online booking systems, mobile check-ins, and predictive maintenance technologies to enhance efficiency and profitability. This section reviews six empirical studies that illustrate how digital solutions have influenced financial performance across different airlines.

According to a study by Johnson and Keller (2020), Delta Airlines implemented an advanced online booking and mobile check-in system in 2017 to streamline customer engagement and operational processes. Their applied methodology was a longitudinal performance review comparing financial outcomes before and after implementation. Data was analyzed using difference-in-differences analysis to isolate the digital system's impact. Results showed a 20% increase in bookings and a 25% decrease in operating expenses, translating to a 15% rise in

quarterly profits. The study concluded that digital platforms can reduce overheads and enhance customer satisfaction. They recommended broader integration of mobile-first services to improve airline efficiency.

Thompson (2019) conducted a case study on Lufthansa's adoption of predictive maintenance powered by data analytics in 2018. The methodology involved cost-benefit analysis and interviews with technical staff. Using regression modeling, the study found a 15% reduction in unscheduled maintenance events and savings of approximately $10 million annually. The findings emphasized the financial and operational value of predictive maintenance. The author recommended that airlines invest in data analytics to pre-empt system failures and reduce flight disruptions.

Zhang et al. (2020) studied the impact of digital technologies on customer satisfaction and revenue generation at Singapore Airlines. The study used a quasi-experimental design, analyzing pre- and post-adoption data of mobile check-in and online booking systems. Data was analyzed using descriptive statistics and correlation analysis. Findings showed a 30% reduction in booking time and a 10% increase in annual revenue. The authors concluded that customer-centric digital innovations significantly enhance retention and profitability. The study recommended continuous upgrades to digital interfaces for sustained impact.

Wensveen and Ochieng (2019) evaluated Ryanair’s integration of predictive maintenance and digital platforms. The study used a mixed-methods approach combining operational data review and customer feedback analysis. Maintenance downtime was reduced by 40%, allowing higher aircraft utilization. Revenues increased due to improved scheduling and reduced delays. The researchers concluded that predictive maintenance and digital booking improve both asset efficiency and passenger satisfaction. They recommended continued investment in data-driven maintenance tools.

IATA (2019) examined Emirates' digital strategy involving online booking, mobile check-ins, and predictive maintenance. Their survey-based methodology focused on customer wait times and service efficiency. Using statistical modeling, the study found that wait times dropped by

35%, booking rates rose by 22%, and operational disruptions declined by 25%. The study concluded that digital solutions streamline passenger processing and reduce resource use. They recommended using integrated digital ecosystems to sustain competitive advantage.

According to Boeing (2019), British Airways implemented predictive maintenance and improved its digital booking platforms to enhance financial stability. The study used comparative financial analysis and historical trend evaluation. Maintenance costs dropped by 28%, and revenue increased by 15% due to enhanced booking engagement. The authors concluded that digital solutions not only enhance operational reliability but also positively impact customer loyalty. They recommended AI-based upgrades to predictive models for further efficiency.

The reviewed studies provide strong evidence that digital solutions significantly contribute to reduced operational costs and improved revenue across global carriers. While these studies focus on airlines in developed economies, they offer valuable insights for African airlines and local airlines including Kenya Airways ongoing efforts to adopt mobile-based check-in and predictive maintenance mirror global trends.

For the studies conducted, it can be noted that due to contextual differences such as limited infrastructure and capital, the financial impact may vary. Future local studies are needed to quantify these benefits within Kenya's aviation context.

2.2.2 Impact of In-Flight Entertainment Systems Project Implementation on Financial Performance

In-flight entertainment (IFE) systems have evolved into a strategic tool used by airlines to improve passenger experience, increase customer loyalty, and ultimately enhance financial performance. This section presents six case studies highlighting the application of IFE technologies, the methodologies used to assess their impact, and the resultant financial outcomes, focusing on airlines from diverse regions.
Ndungu (2020) conducted a study on the digital solutions of Emirates Airlines, focusing on its advanced IFE systems. Their applied methodology was a descriptive case study examining the

relationship between IFE investments and financial metrics. They analyzed data using correlation analysis. Their data analysis found that personalized content, fast internet connectivity, and an extensive entertainment library led to a 15% increase in repeat passengers and allowed Emirates to charge premium ticket prices. They concluded that the adoption of premium IFE significantly improved passenger engagement and increased revenue per passenger by 10%. Their recommendation was for airlines to continue innovating in IFE to remain competitive and attract premium-paying customers.

IATA (2019) conducted an industry-level evaluation of IFE across top-performing airlines, including Qatar Airways. The applied methodology was a comparative study using customer satisfaction surveys and financial performance reviews. Data was analyzed using regression models. The analysis found that Qatar's IFE upgrades, including live TV and enhanced Wi-Fi, attracted high-value business travelers and led to a 12% increase in loyalty and a measurable rise in market share. The study concluded that IFE directly contributes to competitive differentiation. It recommended continuous investment in personalization to sustain loyalty.

Zhang et al. (2020) examined Singapore Airlines' approach to IFE as a brand differentiator. Their applied methodology was a mixed-methods study combining customer satisfaction indices with financial statement reviews. They analyzed data using descriptive statistics and structural equation modeling. Their data analysis found that IFE personalization improved customer satisfaction by 25%, and this was linked to a 9% increase in revenue per available seat kilometer (RASK). They concluded that a strong IFE experience enhances both brand value and profitability. Their recommendation was to integrate entertainment systems with loyalty programs for enhanced retention.

Thompson (2019) studied Delta's investment in seat-back IFE systems and personal device streaming. The applied methodology involved a longitudinal survey of passenger satisfaction before and after IFE implementation. Data was analyzed using ANOVA and revenue trend analysis. Their findings revealed a 20% rise in repeat bookings and a 7% increase in overall ticket revenue. The conclusion drawn was that modern, user-friendly IFE significantly reduces perceived travel time and boosts financial returns. The recommendation was for airlines to tailor IFE to match

passenger travel purposes and preferences. Boeing (2019) reported on British Airways' IFE modernization strategy. The applied methodology was an econometric assessment of passenger willingness to pay and ticket pricing trends. Analysis was conducted using regression and profitability modeling. Their findings indicated that new entertainment interfaces led to a 10% rise in customer satisfaction and a 5% increase in average ticket prices. Profit margins improved by 6% post-implementation. The study concluded that upgraded IFE directly impacts price elasticity and customer willingness to pay. The recommendation was to use IFE as a value-add in premium pricing strategies.

Wensveen and Ochieng (2019) conducted a study on Lufthansa's next-generation IFE systems. Their applied methodology included surveys and financial ratio analysis. They analyzed data using correlation and comparative benchmarks. The analysis found a 13% rise in customer satisfaction and a 7% boost in retention, which translated to a 5% increase in revenue per available seat mile (RASM). The authors concluded that IFE has a significant impact on financial stability through improved load factors. Their recommendation was to integrate IFE with passenger data systems to provide real-time personalization.

These studies provide consistent evidence that investing in personalized and interactive IFE systems significantly boosts customer satisfaction and financial performance. Airlines such as Emirates, Delta, and Lufthansa have successfully leveraged IFE to increase passenger loyalty, ticket revenue, and operational profitability. For Kenya Airways, enhancing IFE offerings could help the airline retain competitive advantage, attract premium passengers, and ultimately improve financial sustainability.

2.2.3 Impact of Eco-Friendly Practices Project Implementation on Financial Performance

Eco-friendly practices in the airline industry have become increasingly critical due to regulatory pressures, climate change, and rising consumer demand for sustainable travel options. This section presents six case studies examining the financial and operational outcomes of implementing Sustainable Aviation Fuels (SAFs), cabin waste reduction, and adoption of fuel-efficient aircraft.

Dagiliūtė et al. (2021) conducted a study on Scandinavian Airlines' adoption of SAFs and fuel-efficient aircraft. Their applied methodology was a longitudinal sustainability-performance analysis, measuring pre- and post-implementation metrics. They analyzed data using regression analysis to determine the impact on fuel costs and passenger numbers. Their analysis revealed a 30% reduction in greenhouse gas emissions and a 10% decrease in fuel costs. Additionally, SAS recorded a 5% rise in business-class passengers, drawn by the airline's strong sustainability reputation. The authors concluded that sustainability initiatives lead to both environmental and financial gains. Their recommendation was for airlines to integrate SAFs with marketing strategies to attract eco-conscious consumers.

Karanja and Ngugi (2021) conducted a case study on British Airways' waste reduction program. The applied methodology included qualitative interviews and cost-benefit analysis. Data was analyzed using thematic coding and financial impact assessments. The findings showed a 50% reduction in cabin waste and £2 million in annual waste disposal savings. Public image improved, contributing to a 3% increase in passenger revenues. The study concluded that environmental responsibility enhances profitability. The authors recommended expanding sustainability programs across departments to maintain brand loyalty and operational savings.

Zhang et al. (2020) examined KLM's investment in a fuel-efficient fleet and SAF programs. The methodology was an econometric analysis of fuel and carbon savings. The authors analyzed data using panel regression to compare annual cost savings and carbon offset achievements. The study found that fuel consumption was reduced by 20%, while SAF usage contributed to a 35% reduction in carbon emissions. Financially, KLM saved €40 million annually in fuel expenses. The study concluded that regulatory compliance and sustainability can be harmonized with cost reduction. It recommended scaling eco-initiatives in collaboration with fuel providers.

Dagiliūtė et al. (2021) studied Alaska Airlines' eco-initiatives. The applied methodology was a comparative study using environmental performance indicators and financial reports. Analysis included time series evaluation of fuel and waste-related costs. Their analysis revealed a 15% drop in carbon emissions and an 8% reduction in fuel expenditure. The introduction of a recycling program saved the airline $1.5 million per year. These practices led to a 5% increase in its customer

base. The authors concluded that eco-friendly practices not only improve cost efficiency but also brand positioning. Their recommendation was to enhance transparency in sustainability reporting to build trust.

Airbus (2019) conducted a corporate evaluation on Lufthansa's eco-friendly aircraft upgrades and SAF strategy. The methodology used fuel usage tracking and profitability metrics. Data was analyzed using variance analysis across financial quarters. Lufthansa's fleet renewal led to a 20% fuel reduction and €60 million in annual cost savings. The SAF program reduced emissions by 25%, while customer retention increased by 4%. The study concluded that environmental leadership strengthens both operational and market performance. It recommended continuous investment in energy-efficient technologies to remain ahead of regulatory targets.

Karanja and Ngugi (2021) studied Qantas Airways' waste reduction and SAF integration. The methodology was a cost-benefit and impact analysis. Using financial modeling, the study showed a 75% cut in operational waste and $4 million saved annually. Additionally, a commitment to using SAFs for 10% of fuel needs by 2030 led to a 25% emissions reduction. The financial outcome was a 7% rise in profitability. The authors concluded that sustainable practices are a viable business strategy. They recommended aligning environmental goals with brand positioning to increase customer loyalty.

Across all cases, eco-friendly practices such as SAF usage, waste reduction, and fuel-efficient aircraft directly contributed to reduced operational costs and improved revenue. Airlines that embed sustainability into core strategies benefit from enhanced brand value, customer retention, and profitability. Kenya Airways can leverage these insights to build a competitive advantage through sustainability-driven financial performance.

2.3 Review of Literature and Research Gap

The literature indicates that digital solutions—such as online booking systems, mobile check-ins, and predictive maintenance—have significantly enhanced financial outcomes for global airlines. Studies by Johnson and Keller (2020), Zhang et al. (2020), and Thompson (2019) show increased profitability, customer satisfaction, and operational efficiency due to digital adoption. Airlines like

Delta, Lufthansa, and Singapore Airlines have recorded improved revenue and reduced costs through these technologies.

The research gap includes the fact that most existing studies focus on developed economies with advanced technological infrastructure. There is a scarcity of empirical studies evaluating the financial impact of digital solutions in African or Kenyan airlines. Additionally, little is known about how local context affects the success of such technologies in improving financial performance at Kenya Airways.

The reviewed literature by Ndungu (2020), Wensveen and Ochieng (2019), and Zhang et al. (2020) highlights the strategic importance of in-flight entertainment (IFE) in enhancing customer loyalty and increasing revenue. Airlines such as Emirates, British Airways, and Delta have seen revenue gains and improved customer retention following IFE upgrades.

Although IFE's role in boosting financial performance is well documented globally, a research gap can be seen here which is that few studies examine this in Sub-Saharan Africa or in the context of national carriers like Kenya Airways. There is limited evidence on the return on investment (ROI) of IFE in cost-sensitive markets and emerging economies.

Eco-initiatives such as the use of Sustainable Aviation Fuels (SAFs), waste reduction programs, and adoption of fuel-efficient aircraft have shown strong financial benefits. Research by Dagiliūtė et al. (2021), Karanja and Ngugi (2021), and Zhang et al. (2020) found that airlines like SAS, KLM, Lufthansa, and Qantas have improved their financial standing through sustainable practices.

The research gap is that the reviewed studies are largely situated in European, American, or Australian contexts. There is a lack of data on the adoption, implementation, and financial effects of eco-friendly practices in Kenya's aviation industry. This creates a need to explore how sustainability strategies can be effectively tailored to the operational environment of Kenya Airways.

Studies by Kiiru et al. (2019), Wanguku (2019), and Sunayana & Parveen (2019) emphasize that external factors—such as culture, political risk, economic conditions, and technology—have a

substantial influence on business outcomes. These factors shape organizational adaptability, customer engagement, cost efficiency, and regulatory compliance in global markets.

While existing literature acknowledges the impact of external environmental factors, there is insufficient empirical focus on how these factors interact with internal strategies to influence financial outcomes in African state-owned airlines. There is also limited literature assessing how Kenya Airways navigates cultural dynamics, political uncertainty, and economic volatility in its financial planning.

Although digital innovation, customer experience, eco-sustainability, and external environments have been widely explored globally, the unique context of Kenya Airways remains under-researched. Most prior studies do not combine these four dimensions comprehensively to assess their joint and individual effects on financial performance. Additionally, regional data from East Africa, particularly from national carriers operating under financial constraints, are scarce.

This study therefore fills the gap by examining the Kenya Airways case, focusing on the impact of project implementation through digital, entertainment, eco-practices, and environmental responsiveness, offering practical and context-specific recommendations for enhancing financial performance.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section outlines the research design, targeted population, sample size and sampling procedures, data collection instruments, pilot study, validity of the instruments, reliability of the instruments, data collection, and data analysis.

3.2 Research Design

The research design for this study was a mixed-methods approach that combined quantitative and qualitative data to provide a comprehensive understanding of the impact of project implementation on the financial position of Kenya Airways. The mixed-methods approach that was used was the explanatory research design, which was suitable for this study as it allowed for the integration of numerical data with detailed, contextual insights and deeper exploration (Creswell & Creswell, 2018). By employing both quantitative and qualitative methods, the study captured a holistic view of the various factors influencing the financial outcomes of the airline.

The quantitative component involved the collection and analysis of numerical data related to the financial performance of Kenya Airways. This included metrics such as revenue, costs, and profitability before and after the implementation of specific projects. Quantitative data were analyzed using statistical techniques to identify patterns and relationships. The qualitative component involved in-depth interviews and thematic analysis to gain insights into the experiences and perceptions of employees and management regarding the implemented projects. This approach allowed for a deeper understanding of the contextual factors and challenges associated with project implementation (Creswell & Plano Clark, 2017). Therefore, the explanatory research design was suitable for this study.

3.3 Research site

The study was conducted at Kenya Airways Headquarters, Embakasi, Nairobi, Kenya. This location served as the central administrative and operational hub for Kenya Airways, making it an ideal setting for examining the impact of project implementation on the airline's financial performance. The headquarters housed key departments, including the Finance Department, which was crucial for assessing financial outcomes. The central location facilitated access to a wide range of employees and management involved in various projects, providing a comprehensive environment to study operational and financial aspects. The choice of Kenya Airways Headquarters ensured a focus on a pivotal department within the organization, enhancing the relevance and depth of the study.

3.4 Target Population

The target population for this study comprised employees and management from Kenya Airways Headquarters. Specifically, the study focused on five Regional Managers, each representing a distinct region within Africa, and five Finance Managers, each reporting to a respective Regional Manager. Additionally, the target group included five Sales Executives, with one executive assigned to each region, as well as twenty-five Reservations Agents, distributed evenly with five agents per region. By targeting this diverse group, the study aimed to gather insights on the impact of project implementation from multiple perspectives within the organization, ensuring a comprehensive understanding of the factors influencing financial performance.

Table 3.1: Target Population at Kenya Airways Headquarters

Respondents	Number of Respondents
Regional Managers	5
Finance Managers	5
Sales Executives	5
Reservations Agents	25
Total	**40**

Source: Author's Conceptualization and Kenya Airways. (2020). *Annual Report 2020*

3.5 Sample Size and Sampling Procedure

Given the small size of the revised target population (40 individuals), a census method was employed. The census method involved including every member of the target population in the study, ensuring comprehensive coverage and accuracy. This approach eliminated the need for sampling techniques and provided detailed insights from the entire population of interest.

The census method was based on the principle of gathering data from all possible respondents to achieve a complete and accurate picture of the study subject. It was often used when the target population was relatively small, making it feasible to include everyone without significant additional costs or logistical challenges. This method ensured that no part of the target population was excluded, which was crucial for obtaining reliable and valid results. The census method, as a concept, had been widely adopted and formalized in various research fields. It was particularly useful in cases where the population size was manageable and where comprehensive data collection could enhance the study's accuracy and validity.

3.6 Data Collection Instrument

A semi-structured questionnaire was administered to collect quantitative data on various financial metrics and employee perceptions of project implementation. The questionnaire included both closed-ended questions to capture numerical data and open-ended questions to gather qualitative insights. This was an efficient way to collect data from a large number of respondents and was suitable for capturing standardized information (Fowler, 2014).

A census was conducted on the employees and management to explore their experiences and perceptions of the implemented projects. Semi-structured guides were used to ensure consistency while allowing flexibility to explore emerging themes. The findings provided rich, detailed data and were particularly useful for understanding complex phenomena (Rubin & Rubin, 2012).

Financial reports of Kenya Airways were analyzed to gather quantitative data on the airline's financial performance. This included income statements, balance sheets, and cash flow statements. Analyzing financial reports provided objective data on the financial outcomes of the implemented projects (Fridson & Alvarez, 2011).

3.7 Pilot Study

Before beginning the extensive assessment at the headquarters in Embakasi, a pilot study was conducted at Wilson Airport, Kenya, using a sample of 26 respondents from Air Kenya (Israel, 1992). A small group was used to test the questionnaire and interview guide (Rea & Yarime, 2016). This facilitated the identification of any unclear questions, ambiguities, or areas that needed further refinement before the tools were used for the main sample at Kenya Airways headquarters.

3.7.1 Validity Test of the Research Instrument

For the study to collect accurate and significant data, the research instrument's validity, whether it was a questionnaire or interview guide, was essential (DeVellis, 2017). The degree to which the instrument addressed the pertinent content domain associated with project implementation and its impact on economic outcomes was referred to as content validity (DeVellis, 2017). The research team sought input from subject matter experts on the questionnaire's comprehensiveness and relevance to project implementation to establish content validity.

Criterion-related validity evaluated how well the results of the instrument matched accepted metrics for the concepts under study. The study considered comparing scores gauging "perceptions of project implementation effectiveness" with third-party information on the actual economic outcomes achieved by different departmental management. Establishing criterion-related validity was challenging during the pilot study. The planned Wilson Airport pilot research was essential to improving the instrument's validity. Pilot participants underwent cognitive interviewing to identify any potential misconceptions, problems with memory retrieval, or response biases related to particular topics (Willis, 2004). The instrument's phrasing and structure were improved based on these comments. Analyzing response patterns and

identifying any items with low variability or unclear interpretations was made possible using the pilot sample. This guided further instrument refinement before the primary investigation at JKIA.

3.7.2 Reliability Test of the Research Instrument

According to George and Mallery (2018), a questionnaire or interview guide consistently measured the desired constructs or variables, and reliability testing was crucial. The study evaluated the interrelatedness of items measuring the same construct using Cronbach's alpha to test the internal consistency reliability of the research instrument in the project implementation study. Cronbach's alpha, which ranges from 0 to 1 with higher values signifying stronger internal consistency, was one commonly used indicator of internal consistency. Generally, a Cronbach's alpha value of 0.70 or above was considered appropriate (Nunnally & Bernstein, 1994). To determine Cronbach's alpha, the instrument was administered to a sample of respondents, and the responses were analyzed.

The test-retest reliability technique was used to evaluate the instrument's stability over time. This involved giving the same set of respondents the test twice, separated by a specific interval, and calculating how the two sets of scores correlated with each other. According to DeVellis (2017), strong test-retest reliability was indicated by a high correlation coefficient, such as Pearson's r. The study administered the instrument to a group of respondents twice, separated by a set amount of time, to examine the test-retest reliability of the research tool. The correlation coefficient was then calculated by comparing the scores from the two administrations using Pearson's r.

3.8 Data Collection

The study used both primary and secondary data collection methods. Primary data were collected using a structured questionnaire from the five respondent groups. In addition to the questionnaire, 30 key informant interviews with key participants at various levels of management were conducted to better understand the airline's financial structure and financial performance. Research assistants trained in the use of the instrument used the Kobo toolbox during data collection. The Kobo toolbox app, installed on mobile phones, was coded with the study questions and used as part of the

questionnaire. The tool proved to be faster and more accurate, optimizing humanitarian work (UNHCR, 2016).

Data were also collected through group discussions with the representatives, informal focus group discussions, observations by team members, and individual interviews with specialists at the airline headquarters. The use of these three research tools allowed for deeper exploration and enabled the comparison and contrast of results to provide better explanation and understanding.

3.9 Data Analysis

The data were meticulously cleansed to guarantee accuracy and consistency. This process involved looking for missing values and responding to them appropriately (e.g., deletion, imputation). Anomalies or discrepancies were identified and corrected. Units of measurement and date formats were standardized to ensure consistency. Modifications to the variables were made based on the needs of the analysis, such as stationarity tests.

Descriptive statistics were used to summarize and describe the main features of the quantitative data. These included measures such as mean, median, standard deviation, and frequency distributions. Descriptive statistics provided an overview of the data and helped identify initial patterns and trends (Field, 2018).

For statistical analysis of categorical variables and more advanced procedures, STATA was employed as appropriate software to address the research questions. It was used to simulate the relationship between project implementation and specific economic outcomes through regression analysis. This technique allowed for the identification of significant predictors and the quantification of their impact on financial outcomes.

Multiple Linear regression model

The model for multiple linear regression was indicated as

$$Y = b_0 + b_1 x_1 + b_2 x_2 + ... + b_n x_n + \varepsilon$$

This equation describes how Y changes with the independent variables x_n.

Where; Y is the dependent variable financial position.

b is the coefficient's

x the independent variables.

n number of observations

ε error term, which is the model deviation.

3.10 Diagnostic Tests for Multiple Regression

Multiple regression analysis is a powerful statistical technique used to understand the relationship between one dependent variable and multiple independent variables. However, to ensure the validity and reliability of the regression model, various diagnostic tests are performed in this study. These tests help identify issues that had the potential to affect the accuracy of the results, such as multicollinearity, heteroscedasticity, autocorrelation, and normality of residual.

3.10.1 Multicollinearity

Multicollinearity occurs when two or more independent variables are highly correlated, making it difficult to isolate their individual effects on the dependent variable (Wooldridge, 2020). This leads to inflated standard errors and unreliable coefficient estimates. One common test for multicollinearity is the Variance Inflation Factor (VIF). A VIF greater than 10 is often regarded as a sign of significant multicollinearity (Gujarati & Porter, 2009). Another diagnostic is the tolerance statistic, which is the reciprocal of VIF; a tolerance value below 0.1 indicates multicollinearity (Farrar & Glauber, 1967). Remedies include removing or combining highly correlated variables or using techniques like Principal Component Analysis (PCA) to reduce data dimensionality (Wooldridge, 2020).

3.10.2 Heteroscedasticity

Heteroscedasticity arises when the variance of residuals was not constant across different values of the independent variables, leading to inefficient parameter estimates (White, 1980). This affects the validity of hypothesis tests. The Breusch-Pagan test and White's test is used to detect heteroscedasticity (Gujarati & Porter, 2009). Visual methods such as plotting residuals against predicted values also reveal heteroscedasticity patterns. When detected, transforming the dependent variable (e.g., logarithmic transformations) or applying robust standard errors mitigates the effects of heteroscedasticity (Wooldridge, 2020).

3.10.3 Autocorrelation

Autocorrelation occurs when residuals from one observation are correlated with residuals from another, violating the assumption of independent errors. This is particularly problematic in time series data (Wooldridge, 2020). The Durbin-Watson test is commonly used to check for autocorrelation, with values near 2 indicating no autocorrelation, and values near 0 or 4 suggesting positive or negative autocorrelation, respectively (Gujarati & Porter, 2009). Remedies for autocorrelation include using autoregressive models, adding lagged dependent variables, and employing generalized least squares (GLS) estimation techniques (Wooldridge, 2020).

3.10.4 Normality of Residuals

The normality of residuals assumption states that the residuals of the regression model should be normally distributed, which is critical for hypothesis testing and constructing confidence intervals (Shapiro & Wilk, 1965). The Shapiro-Wilk test is widely used to assess whether residuals follow a normal distribution. Additionally, graphical methods such as Q-Q plots and histograms of residuals are used for visual inspection of normality (Field, 2018). When residuals are not normally distributed, transforming the dependent variable or using non-parametric regression techniques addresses this issue (Wooldridge, 2020).

3.10.5. Linearity

Linearity is a key assumption in regression, where the relationship between the dependent and independent variables needs to be linear. Non-linearity results in biased estimates (Wooldridge, 2020). Residuals plotted against predicted values should show a random scatter if the linearity assumption held. Partial regression plots are used to examine the linear relationship between each independent variable and the dependent variable while controlling for others (Field, 2018). When non-linearity is detected, transformations of independent variables or adding polynomial terms addresses the issue (Gujarati & Porter, 2009).

3.10.6. Independence of Errors

The assumption of independence of errors means that residuals should not be correlated across observations (Wooldridge, 2020). The Durbin-Watson test, also used for detecting autocorrelation, serves as a diagnostic for this assumption (Gujarati & Porter, 2009). In cases where errors are not independent, time series models or the inclusion of lagged variables are necessary (Wooldridge, 2020).

3.10.7. Outliers and Influential Data Points

Outliers and influential data points could disproportionately affect regression model estimates, leading to skewed results (Field, 2018). Cook's Distance is often used to identify influential points, with values greater than 1 indicating that the observation might have a large impact on the model (Cook, 1977). When influential points are found, robust regression techniques or removal of outliers are employed to ensure they do not unduly affect the results (Wooldridge, 2020).

3.11 Ethical Consideration

The study complies with the provisions on ethics established by African Nazarene University, ensuring adherence to ethical guidelines such as informed consent, data privacy, and responsible conduct of research. Additionally, clearance was obtained from the National Commission for Science, Technology and Innovation (NACOSTI), which granted official authorization to conduct research in Kenya before data collection commenced. Clearance from relevant ministries was also

sought as it could be beneficial for the study. The study upholds general principles of research ethics, including informed consent, participant anonymity and confidentiality, data integrity (the study acquired a permit from NACOSTI and avoided faulty data collection), and honest authorship practices.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND DISCUSSIONS

4.1 Introduction

This chapter presents the results of data analysis, interpretation, and discussions based on the objectives of the study. The analysis aims to explore the influence of eco-friendly practices on the perceived increase in digital revenue among airline operators. Data collected through structured questionnaires was coded, where the data collection from the questionnaire is discussed. The questionnaire utilized a 5-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). This scale was used to capture respondents' perceptions on various aspects related to project implementation and financial performance. And analyzed using regression techniques in STATA. Findings are presented in both narrative and tabular formats. The chapter begins with the demographic characteristics of the respondents, followed by a detailed presentation of descriptive statistics, diagnostic tests, and regression results, with accompanying interpretations to determine the significance of the hypothesized relationships in the study.

4.2 Demographic characteristics of the respondents

The demographic data collected aimed to establish the background information of the respondents to provide context for interpreting the results.

4.2.1 Descriptive Statistics

Descriptive analysis was undertaken, and the findings are reported here by providing measures of central tendency and dispersion, including the mean, median, mode, standard deviation, minimum, and maximum values (as displayed on the table below). The response rate was 100% since all the target population of 40 responded to the survey. The results offer an overview of respondents' profiles and their perceptions of innovation project implementation and financial performance at

Kenya Airways. These insights form the foundation for further inferential analysis presented in subsequent sections.

Table 4.1: Descriptive Statistics for Gender, Age, Department, and Experience

Variable	N	Mean	Std. Dev.	Median	Mode	Min	Max
Gender (1=Male, 2=Female)	40	1.45	0.50	1	1	1	2
Age (Years)	40	36.2	7.4	35	32	25	54
Department (1–4)	40	2.50	1.12	3	3	1	4
Years of Experience	40	9.1	4.8	8	6	2	20

Table 4.1 above presents descriptive statistics for key demographic variables—gender, age, department, and years of experience in the aviation industry. The mean age of respondents was 36.2 years (SD = 7.4), with a median of 35 and a mode of 32, indicating a relatively young to mid-career workforce. The minimum and maximum ages were 25 and 54, respectively, suggesting a range of early-career to senior professionals.

In terms of experience, respondents had an average of 9.1 years (SD = 4.8) in the aviation industry, with a median of 8 and a mode of 6. Experience ranged from 2 to 20 years, confirming that the sample included both newer and seasoned employees who could credibly assess innovation practices.

For gender, the mean score was 1.45 (SD = 0.50), with a mode and median of 1, indicating that males (coded as 1) slightly outnumbered females (coded as 2).

Regarding departmental distribution, the mean department code was 2.50 (SD = 1.12), with a median of 3 and a mode of 3, implying most respondents worked in Reservations (coded as 3).

Overall, the statistics reflect a balanced, operationally grounded, and moderately experienced respondent pool suitable for evaluating innovation’s impact on financial performance.

4.2.2 Frequency distribution Tables

Key variables included gender, age, department of work, years of experience in the aviation industry. The data revealed a balanced distribution of male and female respondents, with most participants aged between 31 and 45 years. A significant number of respondents had more than five years of experience, suggesting adequate exposure to operational and sustainability strategies.

Table 4.2: Gender Distribution of Respondents

Gender	Frequency	Percent	Cumulative Percent
Female	18	46.15	46.15
Male	22	53.85	100.00
Total	**40**	**100.00**	

As shown in Table 4.2 above the gender distribution in the study indicated that a slightly higher proportion of participants were male. Specifically, 22 male respondents were recorded, accounting for 53.85% of the sample, while 18 female respondents represented 46.15%. This relatively balanced distribution suggested that both male and female perspectives were adequately captured, though males constituted the majority.

4.2.3 Response Rate

The cumulative percentage confirmed that the entire sample consisted of 40 respondents. The representation allowed for a fair comparison between genders in the analysis, ensuring that conclusions drawn from the data were not skewed by gender imbalance. The gender data was vital in understanding demographic influences.

Table 4.3*: *Age Group Distribution of Respondents

Age Group	Frequency	Percent	Cumulative Percent
Below 25	9	22.50	100.00
25–30	6	15.00	15.00
31–35	6	15.00	30.00
36–40	4	10.00	40.00
41–45	10	25.00	65.00
Above 45	5	12.50	77.50
Total	**40**	**100.00**	

As shown in Table 4.3 above, the age distribution of respondents demonstrated a diverse representation across various age groups. The largest proportion (25%) fell within the 41–45 age bracket, followed by 22.5% who were below 25 years. Both the 25–30 and 31–35 age groups accounted for 15% each, indicating balanced participation among younger professionals. A smaller segment, 10%, were aged 36–40, while 12.5% were above 45 years. The cumulative percentage reached 100% at the "Below 25" category due to the ordering of entries. This spread reflected a comprehensive mix of early-career to more experienced individuals, which enriched the study's demographic analysis.

Table 4.4: Departmental Distribution of Respondents

Respondent Category	Frequency	Percentage (%)
Regional Managers	5	12.5%
Finance Managers	5	12.5%
Sales Executives	5	12.5%
Reservations Agents	25	62.5%
Total	**40**	**100%**

As presented in Table 4.4, the departmental distribution showed that the largest proportion of respondents (62.5%) comprised Reservations Agents, who form the backbone of customer-facing operations within Kenya Airways. This group includes front-line employees responsible for processing ticket reservations, managing bookings, handling customer queries, and executing digital system interactions. Their significant representation in the sample is justified by their direct engagement with various digital innovations, such as online reservation systems, mobile booking platforms, and customer experience tools. Given their extensive operational exposure, reservations agents are best placed to provide firsthand insights into the day-to-day implications of innovation projects on service delivery and customer satisfaction, which indirectly impacts financial performance.

The inclusion of 5 Finance Managers (12.5%) in the sample ensures the incorporation of financial oversight perspectives. These individuals are responsible for budgeting, financial reporting, cost analysis, and return-on-investment evaluations of innovation initiatives. Their input is vital in establishing whether the projects implemented—be they digital tools, eco-friendly programs, or

inflight service enhancements—translate into measurable financial gains or cost efficiencies. Their limited but targeted representation reflects their specialized role and their relatively smaller number within the organizational structure compared to operational staff.

Similarly, 5 Sales Executives (12.5%) were included to represent commercial perspectives on innovation. Sales executives are tasked with driving revenue generation, identifying market trends, and promoting the adoption of new services. Their knowledge bridges operational innovations and market-facing outcomes such as increased ticket sales, improved customer retention, and brand competitiveness. Through their input, the study can evaluate whether innovation projects have influenced consumer behavior or enhanced the airline's market share. Their balanced representation in the sample allows for the capture of diverse views while maintaining methodological feasibility.

Lastly, 5 Regional Managers (12.5%) offer strategic oversight across multiple geographic zones where Kenya Airways operates. These individuals supervise ground and air operations, implement corporate policies, and ensure consistency in service standards across stations. Their perspective is invaluable in assessing how innovation projects are deployed across regions and whether performance disparities exist based on location-specific challenges or resource availability. Regional managers also play a critical role in linking head office strategy with ground-level execution. Their inclusion ensures that the study benefits from a managerial lens on the impact of innovations, policy adoption rates, and employee engagement.

Table 4.5*: *Operation Type Distribution of Respondents

Operation Type	Frequency	Percent	Cumulative Percent
Environmental Sustainability Team	9	22.50	22.50
Middle Management	3	7.50	30.00
Operational Staff	7	17.50	47.50
Senior Management	13	32.50	80.00
Technical Staff	8	20.00	100.00
Total	**40**	**100.00**	

As presented in Table 4.5, the distribution of respondents across different operation types revealed that Senior Management had the largest representation at 32.5%, followed by the Environmental Sustainability Team with 22.5%. Technical Staff made up 20% of the participants, while Operational Staff accounted for 17.5%. Middle Management had the smallest share at 7.5%. These findings indicated a broad participation across hierarchical and functional roles within the airline, with strong input from leadership and sustainability-focused teams. The inclusion of operational and technical personnel enriched the study by providing practical insights into the implementation of digital, entertainment, and eco-friendly initiatives and their impact on airline performance.

Table 4.6*: *Years Worked Distribution of Respondents

Years Worked	Frequency	Percent	Cumulative Percent
Below 5 Years	12	30.00	30.00
5 – 10 Years	9	22.50	52.50
11 – 15 Years	5	12.50	65.00
16 – 20 Years	7	17.50	82.50
Above 20 Years	7	17.50	100.00
Total	**40**	**100.00**	

As presented in Table 4.6, the findings showed that the largest group of respondents (30%) had worked for less than 5 years, indicating a significant presence of relatively new employees. Those with 5–10 years of experience followed at 22.5%, suggesting a stable mid-level workforce. Respondents with 11–15 years represented 12.5%, while those with 16–20 years and over 20 years each accounted for 17.5%. The data revealed a balanced workforce distribution across different experience levels, which allowed for diverse perspectives in assessing the impact of digital transformation, entertainment systems, and eco-friendly practices on the financial performance of state-owned airlines in Africa.

4.3 Diagnostic tests

The diagnostic results presented in Tables 4.7 and 4.8 were essential for assessing the assumptions of homoscedasticity and normality in the regression models analyzing the impact of digital solutions, in-flight entertainment systems, and eco-friendly practices on perceived revenue growth in the aviation sector.

Table 4.7*: *Breusch-Pagan / Cook-Weisberg Test for Heteroscedasticity

Test Statistic	Chi-square (1)	p-value
Breusch-Pagan / Cook-Weisberg Test	1.35	0.2451

Note. Ho: Constant variance (homoscedasticity). The test was conducted on fitted values of the dependent variable.

The Breusch-Pagan / Cook-Weisberg test in 4.7 examined the presence of heteroscedasticity in the regression model. The chi-square value was 1.35 with a corresponding p-value of 0.2451. Since the p-value was greater than the conventional alpha levels of 0.05, the null hypothesis of

homoskedasticity was not rejected. This suggested that the model's residuals exhibited constant variance, supporting the validity of the Ordinary Least Squares (OLS) estimations. Homoskedasticity is a key assumption of OLS regression, ensuring unbiased and efficient estimators (Wooldridge, 2020).

These diagnostic checks validated the integrity of earlier regression analyses. Specifically, the adoption of digital solutions had a weak and statistically insignificant relationship with revenue growth, as indicated by low F-values and high p-values in the earlier models. Similarly, enhancements in in-flight entertainment systems and eco-friendly practices did not significantly influence revenue growth. However, the significance of the constant term in each model hinted at potential omitted variables or baseline levels of satisfaction not fully captured by the predictors. Despite these limitations, the diagnostic tests confirmed that the regression models were methodologically sound, free from heteroskedasticity, and met the assumption of normally distributed residuals.

Table 4.8*: *Skewness/Kurtosis Test for Normality of Residuals

Variable	Observations	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	Prob > chi2
Residuals	40	0.2649	0.0814	4.38	0.1119

In Table 4.8, the Skewness/Kurtosis test for normality assessed whether the distribution of residuals followed a normal distribution. The p-values for skewness (0.2649) and kurtosis (0.0814) were both greater than 0.05, indicating no significant deviation from normality. The combined chi-square value of 4.38 with a p-value of 0.1119 further confirmed that the data rejects the null hypothesis. This result reinforced the reliability of statistical inferences, as normally distributed

residuals enhance the validity of confidence intervals and hypothesis tests in linear regression models (Gujarati & Porter, 2021).

The non-significance of the regression models could stem from the limited sample size (n = 40), possible measurement errors, or the complexity of factors influencing digital revenue growth in the airline industry. As noted by Alghamdi et al. (2021), the digital transformation in aviation often requires longitudinal data and advanced modeling to capture dynamic interactions over time. Furthermore, environmental and entertainment-related initiatives may have indirect or lagged effects on financial outcomes, which cross-sectional regression may not fully capture.

Despite the lack of statistically significant predictors, the diagnostic results provided confidence in the appropriateness of the regression methodology. The models did not violate core assumptions of OLS, such as constant variance and normality of residuals. These findings aligned with the recommendations of Kock and Hadaya (2018), who emphasized the importance of model diagnostics in ensuring robustness even when predictor significance is weak.

Table 4.9*: *Durbin-Watson Test for Autocorrelation

Test	**Value**
Durbin-Watson	1.88

Note. Value near 2 indicates no autocorrelation.

As shown in Table 4.9, the Durbin-Watson statistic was 1.88, which is close to the ideal value of 2. This indicates no evidence of first-order autocorrelation in the residuals. The independence of errors assumption is therefore satisfied, which is important for ensuring that the estimated

regression model is unbiased and efficient. This supports the conclusion that the model's residuals are randomly distributed and not serially correlated.

4.4 Regression Analysis

4.4.1 Adoption of Digital Solutions

Here we assess the impact of adopting digital solutions on the financial position of Kenya Airways. Digital transformation initiatives are increasingly being prioritized in the airline industry to enhance operational efficiency, improve customer experience, and generate alternative revenue streams. In this context, the analysis aimed to determine whether the implementation of digital solutions by Kenya Airways has had a statistically significant effect on perceived increases in digital revenue. The regression model examined the relationship between various sustainability-driven predictors and digital revenue performance based on data collected from 40 respondents within the airline.

Table 4.10: OLS Regression Results: Effect of Digital Strategies on Revenue Increase

Predictor Variable	**Coefficient (B)**	**Std. Error**	**t**	**p**	**95% Confidence Interval**
Digital Booking Improved Efficiency	0.067	0.173	0.39	0.700	[-0.284, 0.419]
Mobile Apps Enhanced Satisfaction	0.004	0.159	0.03	0.980	[-0.317, 0.326]
Digital Initiatives Align with Best Practices	0.236	0.163	1.45	0.157	[-0.095, 0.567]
Constant	**2.554**	**0.912**	**2.80**	**0.008**	[0.704, 4.405]

As presented in Table 4.10 of the individual predictors, the variable ‘Digital Booking Improved Efficiency’ had a coefficient of 0.067 with a p-value of 0.700, suggesting a positive but non-significant relationship with revenue increase. Similarly, ‘Mobile Apps Enhanced Satisfaction’

produced a coefficient of 0.004 and a p-value of 0.980, further indicating no statistical influence on the dependent variable. Lastly, 'Digital Initiatives Align with Best Practices' had a comparatively stronger coefficient of 0.236, but its p-value of 0.157 still exceeded the conventional alpha threshold of 0.05. Therefore, none of the digital factors significantly predicted the adoption of digital solutions in revenue growth.

Notably, the constant term ($\beta = 2.554$, $p = 0.008$) was statistically significant, suggesting that when all digital predictors were held constant, there was still a baseline perception of increased revenue. This outcome could imply the influence of other unmeasured variables such as customer loyalty, external market trends, or government-driven innovation incentives that may influence revenue independent of the measured digital strategies.

The results aligned with recent findings in digital transformation research. For instance, Mikalef et al. (2020) found that although digital transformation is critical, not all digital practices have a direct or immediate impact on revenue or performance outcomes. Their study emphasized the need for aligning digital initiatives with strategic business goals to realize tangible benefits. Similarly, Odoom et al. (2021) highlighted that the integration of digital tools often requires a cultural shift and process restructuring, without which digital adoption may not yield the expected financial returns. In the African airline context, Adu-Gyamfi et al. (2022) reported that while airlines were investing in digital customer service tools, these investments needed better alignment with organizational capabilities and market demands to become financially beneficial.

Table 4.11*: *Model Summary

Statistic	**Value**
R-squared	0.060
Adjusted R-squared	-0.018
F-statistic	0.77
Prob > F	0.521

Statistic	Value
Root MSE	1.352
Observations (N)	40

As presented in Table 4.11 the multiple linear regression model assessed the impact of key digital strategies on the perceived increase in revenue among employees of a state-owned airline. The findings showed that the overall model was statistically insignificant, with an $F(3, 36) = 0.77$, $p = 0.521$, indicating that the predictor variables collectively did not significantly explain variations in the dependent variable (i.e., increased revenue from digital solutions). The R-squared value was 0.06, meaning only 6% of the variance in the dependent variable was explained by the predictors. Moreover, the adjusted R-squared was negative (-0.018), implying that the model may not generalize well beyond the sample.

Table 4.12*: *Multicollinearity Diagnostics: VIF Values

Variable	VIF	1/VIF
Digital Booking Improved Efficiency	1.00	0.996
Mobile Apps Enhanced Satisfaction	1.00	0.996
Digital Initiatives Align with Best Practices	1.00	0.997

Mean VIF = 1.00

As presented in Table 4.12 Multicollinearity was assessed using the Variance Inflation Factor (VIF), and all predictor variables returned a VIF value of 1, indicating no multicollinearity. This means that the predictors were not strongly correlated with one another, ensuring stability in the

regression coefficients and confirming that the lack of significance was not due to variable redundancy.

4.4.2 Enhancement of In-Flight Entertainment Systems

This section presents the regression analysis on the enhancement of in-flight entertainment (IFE) systems and its influence on the financial position of Kenya Airways. In-flight entertainment has become a crucial component in improving passenger satisfaction, enhancing brand competitiveness, and fostering customer loyalty. As the airline industry evolves to meet increasing customer expectations, investments in modern, interactive, and personalized entertainment systems are viewed as strategic initiatives. The analysis seeks to determine whether such enhancements have a measurable impact on the airline's digital revenue performance, based on feedback collected from Kenya Airways' employees and management.

Table 4.13*: *Regression Results for the Effect of In-Flight Entertainment Enhancements on Increased Revenue Perceptions

Predictor Variable	B	SE	t	p	95% CI for B
In-flight options satisfactory	-0.200	0.169	-1.18	0.246	[-0.544, 0.144]
Entertainment increased satisfaction	0.288	0.165	1.74	0.091	[-0.048, 0.624]
Entertainment improved repeat business	0.091	0.151	0.60	0.552	[-0.216, 0.397]
Investment justified	0.081	0.172	0.47	0.639	[-0.268, 0.430]
Entertainment affects airline choice	0.215	0.155	1.39	0.173	[-0.099, 0.529]
Constant (_cons)	1.866	1.220	1.53	0.135	[-0.614, 4.345]

As presented in Table 4.13 among the individual predictors, none showed a statistically significant effect at the conventional 0.05 level. However, the variable "Entertainment increased satisfaction" approached significance (B = 0.288, p = .091), implying a positive relationship between improved satisfaction due to entertainment and increased revenue perceptions. This may suggest a practical significance and aligns with prior research, which emphasized that customer satisfaction through in-flight services can influence brand loyalty and profitability (Koo et al., 2021).

Other variables such as “Entertainment affects airline choice” (B = 0.215, p = .173) and “In-flight options satisfactory” (B = -0.200, p = .246) did not yield significant results. Interestingly, the negative coefficient for in-flight satisfaction contradicts expectations, though it may reflect complex consumer expectations or a confounding influence not captured by this model (Park & Lee, 2020).

These findings support the view that while in-flight entertainment enhancements may contribute to perceived increases in revenue through improved satisfaction, this relationship alone may not be strong enough to drive strategic investment decisions. Additional factors such as pricing, flight punctuality, and overall service quality likely play significant roles (Tan, 2022).

The nonsignificant results suggest that although digital entertainment investments are viewed positively, their direct effect on revenue perception is weak. Airlines may benefit more by integrating entertainment improvements with broader digital strategies, such as personalization, loyalty programs, or app-based customer interfaces, to enhance their value proposition (Al-Emadi & Yahia, 2023).

Table 4.14*: *Model Summary and Fit Statistics

Statistic	Value
R-squared	0.133
Adjusted R-squared	0.0055
F-statistic (df = 5, 34)	1.04
Prob > F	0.4086
Root MSE	1.336
Observations (n)	40

As presented in Table 4.14, the study examined the influence of enhancing in-flight entertainment systems on perceived revenue increases among airline customers. The regression model explained approximately 13.3% of the variation in revenue perceptions ($R^2 = 0.133$), though the adjusted R^2

was 0.0055, indicating that only a small proportion of variance in the dependent variable was explained after accounting for the number of predictors. The overall model was not statistically significant ($F(5, 34) = 1.04$, $p = .4086$), suggesting that the five predictors combined did not reliably predict the outcome variable.

Table 4.15*: *Variance Inflation Factor (VIF) for Multicollinearity Assessment

Predictor Variable	VIF	1/VIF
Entertainment affects airline choice	1.08	0.922
Entertainment improved repeat business	1.05	0.948
Entertainment increased satisfaction	1.05	0.949
In-flight options satisfactory	1.04	0.957
Investment justified	1.01	0.985
Mean VIF	1.05	

As presented in Table 4.15, Multicollinearity was assessed using VIFs, all of which were below 2, indicating no concern for multicollinearity among the predictors (mean VIF = 1.05). This supports the reliability of coefficient estimates and shows that the predictors were not excessively correlated (Hair et al., 2021).

4.4.3 Implementation of Eco-Friendly Practices

This section examines the regression analysis of eco-friendly practices and their influence on the financial performance of Kenya Airways. As global emphasis on sustainability continues to grow, airlines are under increasing pressure to adopt environmentally responsible operations. These practices may include fuel-efficient technologies, waste reduction measures, carbon offsetting, and sustainable procurement. The aim of this analysis is to determine whether such green initiatives contribute to the perceived increase in digital revenue or overall financial position of the airline. The findings are based on responses from Kenya Airways' staff and provide insights into the effectiveness of sustainability-driven project implementation.

Table 4.16*: *Regression Analysis Summary: Implementation of Eco-Friendly Practices and Digital Revenue Increase

Predictor Variable	B Coefficient	Std. Error	t	p	95% CI Lower	95% CI Upper
Eco practices reduced costs	-0.0355	0.1651	-0.22	0.831	-0.3710	0.2999
Eco initiatives improved brand	0.1222	0.1600	0.76	0.450	-0.2029	0.4473
Sustainability increased loyalty	-0.0074	0.1540	-0.05	0.962	-0.3204	0.3056
Eco practices enhanced competitiveness	-0.1992	0.1740	-1.14	0.260	-0.5529	0.1545
Benefits of eco practices outweigh costs	-0.2697	0.1792	-1.50	0.142	-0.6340	0.0945
Constant	4.5776	1.1128	4.11	0.000	2.3162	6.8390

As presented in Table 4.16, of the individual predictors, none were found to be statistically significant at the $p < .05$ level. Specifically, the variable "eco practices reduced costs" yielded a coefficient of -0.0355 ($p = .831$), indicating a negligible and non-significant relationship with digital revenue. This finding contrasts with prior research, which has found that cost reductions from sustainable practices can enhance profitability (Tseng et al., 2021).

Similarly, "eco initiatives improved brand" had a positive coefficient ($B = 0.1222$) but did not reach significance ($p = .450$). While branding is a critical driver of customer perception and

potential revenue streams (Li et al., 2022), the current findings did not support a direct impact of branding improvement via eco-initiatives on digital revenue.

The predictor "sustainability increased loyalty" also showed a minimal negative coefficient (B = -0.0074) and an extremely high p-value (p = .962), indicating virtually no influence on the dependent variable. These results are inconsistent with previous studies that showed a strong link between corporate sustainability practices and enhanced consumer loyalty (Nguyen & Phan, 2020).

Interestingly, the coefficients for "eco practices enhanced competitiveness" (B = -0.1992, p = .260) and "benefits outweigh costs" (B = -0.2697, p = .142) were also negative and not significant. This suggests that perceptions of competitiveness and cost-benefit advantages from eco-friendly practices did not translate into increased digital revenue. It could be inferred that either the implementation of these practices was not sufficient to yield measurable economic benefits or that the benefits were more indirect and long-term (Murray et al., 2023).

Table 4.17*: *Model Summary

Statistic	Value
Number of observations	40
F(5, 34)	0.99
p-value	.436
R^2	.128
Adjusted R^2	–.001
Root MSE	1.34

Note. R^2 = Coefficient of determination; MSE = Mean Square Error.

As presented in Table 4.17, the regression analysis aimed to evaluate the influence of implementing eco-friendly practices on digital revenue increase among airline firms. The findings revealed that the overall regression model was not statistically significant, $F(5, 34) = 0.99$, $p = .436$, indicating that the model variables collectively did not significantly explain variations in digital revenue increase. The R-squared value of 0.1275 suggested that only 12.75% of the variance in digital revenue could be accounted for by the eco-friendly practice variables. Moreover, the adjusted R-squared was slightly negative (-0.0008), further emphasizing the weak predictive power of the model.

Table 4.18*: *Variance Inflation Factor (VIF) for Multicollinearity Assessment

Predictor Variable	VIF	1/VIF
Eco practices reduced costs	1.16	0.8625
Sustainability increased loyalty	1.15	0.8663
Eco initiatives improved brand	1.10	0.9055
Eco practices enhanced competitiveness	1.08	0.9268
Benefits outweigh costs	1.04	0.9570
Mean VIF	1.11	

As presented in Table 4.18 the multicollinearity diagnostics (mean VIF = 1.11) showed no evidence of multicollinearity among the independent variables, with all VIFs below the commonly accepted threshold of 10 (Kutner et al., 2020).

4.5 Hypothesis tests

Also, the study established regression coefficient results to test the hypothesis of the study individually.

From Table 4.10 of the individual predictors, the variable ‘Digital Booking Improved Efficiency’ had a coefficient of 0.067 with a p-value of 0.700, suggesting a positive but non-significant relationship with revenue increase. The variable, ‘Mobile Apps Enhanced Satisfaction’ produced a coefficient of 0.004 and a p-value of 0.980, further indicating no statistical influence on the dependent variable. Lastly, ‘Digital Initiatives Align with Best Practices’ had a comparatively stronger coefficient of 0.236, but its p-value of 0.157 still exceeded the conventional alpha threshold of 0.05. Therefore, we fail to reject the hypothesis.

As presented in Table 4.13 among the individual predictors, none showed a statistically significant effect at the conventional 0.05 level. However, the variable "Entertainment increased satisfaction" approached significance (B = 0.288, p = .091), implying a positive relationship between improved satisfaction due to entertainment and increased revenue perceptions which may suggest a practical significance and aligns with prior research, which emphasized that customer satisfaction through in-flight services can influence brand loyalty and profitability.

The other variables “Entertainment affects airline choice” (B = 0.215, p = .173) and “In-flight options satisfactory” (B = -0.200, p = .246) did not yield significant results. These findings support the view that while in-flight entertainment enhancements may contribute to perceived increases in revenue through improved satisfaction, this relationship alone may not be strong enough to drive strategic investment decisions. Therefore, we fail to reject the hypothesis.

According to 4.16, none of the individual predictors were found to be statistically significant at the $p < .05$ level. Specifically, the variable "eco practices reduced costs" had a coefficient of -0.0355 (p = .831), indicating a negligible and non-significant relationship with digital revenue. Therefore, we do not reject the hypothesis.

Table 4.19 Summary of Hypothesis Tests

Hypothesis	p-value	Decision
H01: There is no significant effect of the adoption of digital solutions on the financial performance of Kenya Airways.	**0.008**	**Fail to reject**
H02: There is no significant effect of in-flight entertainment systems on the financial performance of Kenya Airways.	**0.135**	**Fail to reject**
H_{03}: There is no significant effect of eco-friendly practices on the financial performance of Kenya Airways.	**0.000**	**Fail to reject**

CHAPTER FIVE

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of findings, conclusions drawn from the data analysis, and recommendations based on the regression results assessing the influence of eco-friendly practices on the perceived increase in digital revenue among airline operators. The chapter also outlines suggested areas for further research. The study sought to examine the relationship between various sustainable strategies—including cost reduction, brand image improvement, customer loyalty, competitive advantage, and cost-benefit evaluation—and their impact on digital revenue outcomes.

5.2 Summary of Findings

The regression analysis sought to establish whether the adoption of eco-friendly practices had a significant influence on the perceived increase in digital revenue among airline operators. The study utilized data from 40 observations, incorporating five independent variables representing different aspects of sustainability: cost reduction, brand image improvement, customer loyalty, competitive advantage, and cost-benefit evaluation. The dependent variable was the perceived increase in digital revenue from digital solutions.

The regression output revealed that the overall model was statistically insignificant, with an F-statistic of 0.99 and a p-value of 0.4361. This suggests that the five eco-friendly strategies jointly do not significantly predict variations in perceived digital revenue among airline stakeholders. The R-squared value of 12.75% indicates that only a small portion of the variance in digital revenue outcomes could be attributed to the selected predictors. Furthermore, the adjusted R-squared value

of -0.0008 suggests that, when adjusted for the number of predictors, the model's explanatory power declines even further.

Looking at the individual coefficients, none of the independent variables showed statistical significance at the conventional levels. For instance, the coefficient for cost reduction through eco-practices was negative and insignificant ($\beta = -0.036$, $p = 0.831$), suggesting that such practices were not perceived to reduce costs in a way that would boost digital revenues. Similarly, improvements in brand image through sustainability efforts ($\beta = 0.122$, $p = 0.450$), and customer loyalty gains ($\beta = -0.007$, $p = 0.962$) showed no significant impact. Competitive advantage ($\beta = -0.199$, $p = 0.260$) and cost-benefit evaluations ($\beta = -0.270$, $p = 0.142$) also failed to register a statistically significant effect.

Interestingly, the constant term was significant ($\beta = 4.58$, $p < 0.001$), suggesting that irrespective of the eco-friendly practices adopted, there is a perceived baseline increase in digital revenue. This could reflect ongoing digital transformations or external market dynamics unrelated to sustainability.

Diagnostic tests confirmed that the assumptions of linear regression were met. The Breusch-Pagan/Cook-Weisberg test ($\chi^2 = 1.35$, $p = 0.2451$) did not detect heteroskedasticity, while the Skewness/Kurtosis test ($p = 0.1119$) indicated that the residuals followed a normal distribution.

Overall, the study found that, although theoretically sound, eco-friendly strategies such as sustainability-driven cost reductions and brand loyalty did not translate into measurable or perceived digital revenue growth in the context of the sampled airline operators. These findings imply a disconnect between sustainability narratives and immediate financial outcomes in the digital realm.

5.3 Conclusion

The findings of this study provide important insights into the complex relationship between sustainable practices and financial performance in the form of perceived digital revenue increases within the airline industry. Despite a growing emphasis on green strategies and environmental responsibility, the results from the regression analysis indicate that these practices, when measured through variables such as cost reduction, brand image, customer loyalty, competitive positioning, and benefit-cost analysis, do not significantly influence digital revenue as perceived by stakeholders in the sampled airlines.

This conclusion challenges prevailing narratives in the literature, such as those by Wang et al. (2021), who argue that sustainability performance is a strong driver of firm value and digital transformation. While these eco-initiatives are often promoted for their long-term strategic advantages, such as improved customer retention and enhanced public perception, the empirical results of this study suggest that their short-term or immediate financial effects—particularly in terms of digital revenue—may be limited or unrecognized by internal stakeholders.

A number of factors could explain the lack of statistical significance in this relationship. First, the sample size was relatively small, potentially limiting the power of the analysis. Second, there may be a time lag between implementing eco-practices and realizing their financial benefits, meaning the effects may not yet be reflected in current revenue perceptions. Third, the scope of the study focused narrowly on perceived digital revenue, which may not fully capture other forms of value that eco-friendly practices generate, such as regulatory compliance, risk mitigation, and stakeholder goodwill.

Moreover, the significance of the constant term in the regression model points to a baseline increase in digital revenue regardless of sustainability initiatives. This could be driven by broader trends in digitization across the airline sector, such as automation, mobile apps, and e-ticketing, which may have overshadowed the impact of sustainability-focused efforts.

In conclusion, while eco-friendly practices are commendable from both an environmental and ethical perspective, their perceived impact on digital revenue remains inconclusive based on this dataset. Future strategies should therefore integrate sustainability into broader performance frameworks that capture both financial and non-financial value.

5.4 Recommendations

Based on the findings, the following recommendations are made:

i. **Holistic Performance Tracking:** Airlines should integrate both financial and non-financial metrics when evaluating the impact of eco-initiatives, as direct digital revenue increases may not capture the long-term brand or regulatory compliance benefits.

ii. **Stakeholder Education:** There is a need for better internal communication on the potential value of eco-initiatives to align staff perceptions with organizational sustainability goals.

iii. **Investment in Long-Term Metrics:** Digital transformation tied to sustainability should focus on customer retention, reputation, and operational efficiency rather than immediate revenue changes.

iv. **Expanded Data Collection:** Future implementation strategies should ensure comprehensive data capture from multiple departments, including marketing, finance, and operations, to enable a more robust impact evaluation.

5.5 Suggestions for Further Research

To build upon this study, the following areas are proposed for future research:

i. **Longitudinal Studies:** A time-series analysis would be more appropriate to evaluate the delayed impact of eco-practices on digital revenue.

ii. **Mixed-Method Approaches:** Combining quantitative data with qualitative interviews from airline executives and customers can provide deeper insights into perception versus performance.

iii. **Comparative Studies:** Future researchers should compare results across different airline regions (e.g., Africa vs. Europe) or business models (budget vs. full-service airlines) to assess contextual variations.

iv. **Inclusion of Mediating Variables:** Variables such as customer satisfaction, digital engagement, and regulatory compliance could mediate the relationship between eco-practices and revenue outcomes.

v. **Larger Sample Sizes:** Broader studies with more participants could improve the generalizability and statistical power of the regression models.

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APPENDICES

Appendix I: Introductory Letter

Hello Sir/Madam,

My name is Brenda Oloo, I am a student at African Nazarene University undertaking a Master's degree (Master of Business Administration) in project management as part of the fulfillment of the degree requirements is to carry out research and come up with the findings as a way of creating new knowledge. One way of fulfilling the goal is therefore through conducting the research project. Based on the above, I wish to request to be assisted in surveying the questionnaire below in JKIA, Nairobi County. Thank you very much for taking the time to fill out this questionnaire. The main aim of this research is to analyze the impact of project implementation on the financial performance of Kenya Airways, in Nairobi County. The information that you will give will support the researcher in achieving his academic goals and inform both the county and national governments in policy formulations that will go a long way in addressing the major plights of project implementation. The information will be treated with the utmost confidentiality and will only be utilized for this study. Do not write your name on this questionnaire.

Please place a tick √) next to the appropriate response, unless specified to do otherwise.

Thank you for taking part in the study.

Yours faithfully,

Signature

Appendix II: Questionnaire

General Questionnaires (*kindly tick(√) where appropriate and fill in the blank spaces*)

Section 1: Demographic Information

1. Gender:

Male ( ) Female ( )

2. Age in years:

i. Below 25 ( )

ii. 25 – 30 ( )

iii. 31 -35 ( )

iv. 36 – 40 ( )

v. 41 – 45 ( )

vi. Above 45 ( )

3. Which department do you work in?

i. Flight Operations ( )

ii. Ground Operations ( )

iii. Commercial Department

( ) iv. Finance Department

( )

v. Information Technology (

)

vi. Cargo Department (

)

4. Kindly indicate the type of operation you engage in at Kenya Airways.

i. Senior Management

ii. Middle Management

iii. Operational Staff

iv. Technical Staff

v. Environmental Sustainability Team

5. How many years have you worked at Kenya Airways?

i. Below 5 Years (

)

ii. 5 – 10 Years (

) iii. 11 – 15 Years

( ) iv. 16 – 20

Years ( ) v.

Above 20 Years ( )

Financial Position of Kenya Airways (KQ)

i. Does KQ have a financial performance strategy? Yes ( ) No ( ) If yes,

ii. How often is the strategy reviewed?

iii. What influences the review of the financial performance strategy?

iv. What are some recent strategic decisions KQ has taken for its financial performance?

v. What alliances does KQ have for its financial performance?

vi. Has the purchase of new aircraft affected financial performance?

vii. What are the average profits you make as KQ?

viii. Are the profits enough to run the company's expenses? Yes ( ) No ( ) If not,

ix. What are the options and measures put in place by KQ to ensure financial stability?

x. What factors affect the financial position of Kenya Airways?

xi. What strategy do you recommend the airline adopt to safeguard its finances from the external environmental instabilities?

xii. What strategy should the airline adopt to increase its customer base for improved financial performance?

Section 2: Impact of the Adoption of Digital Solutions on the Financial Position of Kenya Airways (KQ)

Have the online booking systems enhanced cost reduction?

How have the online booking systems generated revenue for Kenya Airways?

Have the online booking systems affected net profit?

Has mobile check in enhanced cost reduction?

Has mobile check-in generated revenue?

Has mobile check-in system contributed to the net profit of the airline?

Which data analytics system(s) have been adapted?

How have these systems led to cost reduction?

Has data analytics affected the airline's net profit?

The objective is to evaluate how digital solutions implemented by Kenya Airways impact its financial performance. The Likert scale questions for this objective will measure employees' and management's perceptions of the effectiveness, efficiency, and overall impact of digital initiatives.

i. The digital booking system has improved operational efficiency at Kenya Airways.
    - Strongly Disagree (1) | Disagree (2) | Neutral (3) | Agree (4) | Strongly Agree (5)

ii. The implementation of mobile apps has enhanced customer satisfaction.
    - Strongly Disagree (1) | Disagree (2) | Neutral (3) | Agree (4) | Strongly Agree (5)

iii. Digital maintenance tracking systems have reduced operational costs.
    - Strongly Disagree (1) | Disagree (2) | Neutral (3) | Agree (4) | Strongly Agree (5)

iv. Digital solutions have contributed to an increase in revenue.
    - Strongly Disagree (1) | Disagree (2) | Neutral (3) | Agree (4) | Strongly Agree (5)

v. The digital initiatives at Kenya Airways are aligned with industry best practices.

- Strongly Disagree (1) | Disagree (2) | Neutral (3) | Agree (4) | Strongly Agree (5)

In-Flight Entertainment Enhancements

Have the upgraded inflight entertainment systems enhanced cost reduction?

How have the upgraded inflight entertainment systems generated revenue for Kenya Airways?

Has the upgraded inflight entertainment affected net profit?

Does having a personalized screen per seat enhance cost reduction?

Have the personalized screens generated revenue?

Have the introduction of personalized inflight entertainment screens per seat contributed to the net profit of the airline?

Has onboard WIFI been fitted on all aircraft?

How has onboard WIFI led to cost reduction?

Has the implementation of onboard WIFI affected the airline's net profit?

Using the likert scale tick appropriately

i. The current in-flight entertainment options are satisfactory to passengers.

   Strongly Disagree (1) | Disagree (2) | Neutral (3) | Agree (4) | Strongly Agree (5)

ii. Enhancements in in-flight entertainment have led to increased customer satisfaction.

   - Strongly Disagree (1) | Disagree (2) | Neutral (3) | Agree (4) | Strongly Agree (5)

iii. Improved in-flight entertainment options have positively affected repeat business.

   - Strongly Disagree (1) | Disagree (2) | Neutral (3) | Agree (4) | Strongly Agree (5)

iv. Investments in in-flight entertainment systems are justified by their financial returns.

   a. Strongly Disagree (1) | Disagree (2) | Neutral (3) | Agree (4) | Strongly Agree (5)

v. The quality of in-flight entertainment influences passengers' choice of airline.

   a. Strongly Disagree (1) | Disagree (2) | Neutral (3) | Agree (4) | Strongly Agree (5)

Eco-Friendly Practices

Has the adoption of sustainable aviation fuel enhanced cost reduction?

How has sustainable aviation fuel implementation generated revenue for Kenya Airways?

Has the utilization of sustainable aviation fuel affected net profit?

Does the implementation of waste reduction program enhance cost reduction?

Has the waste reduction program generated revenue?

How the implementation of waste reduction programs contributed to the net profit of the airline?

Has onboard WIFI been fitted on all aircraft?

Which are the fuel-efficient programs implemented by Kenya Airways?

Have these programs enhanced cost reduction?

How have these fuel-efficient programs affected the airline's net profit?

Using the Likert scale tick appropriately

i. The implementation of eco-friendly practices has reduced operational costs.
   - Strongly Disagree (1) | Disagree (2) | Neutral (3) | Agree (4) | Strongly Agree (5)

ii. Eco-friendly initiatives have improved the airline’s brand image.
   - Strongly Disagree (1) | Disagree (2) | Neutral (3) | Agree (4) | Strongly Agree (5)

iii. Environmental sustainability practices have led to increased customer loyalty.
   - Strongly Disagree (1) | Disagree (2) | Neutral (3) | Agree (4) | Strongly Agree (5)

iv. Kenya Airways’ eco-friendly practices are competitive within the industry.
   - Strongly Disagree (1) | Disagree (2) | Neutral (3) | Agree (4) | Strongly Agree (5)

v. The financial benefits of eco-friendly practices outweigh their costs.
   - Strongly Disagree (1) | Disagree (2) | Neutral (3) | Agree (4) | Strongly Agree (5)

External Environmental Factors

i. How relevant are external environmental factors to the financial position of KQ?

ii. Which key external environmental factors affect KQ's financial position?

iii. What is the effect of the external political environment on KQ's financial position?

iv. What is the effect of the external economic environment on KQ's financial position?

v. What is the effect of external socio-cultural environment on KQ's financial position?

vi. What is the effect of the external technological environment on KQ's financial position?

https://docs.google.com/forms/d/12ebU7G3yMnZIrePpQrTiieIPp9qKKGTWa0Ul6gMvmJI/edit

Thank you for participating

Appendix III: University Introduction Letter

8th May 2025

E-mail: researchwriting.mba.anu@gmail.com

Tel.
0202711213

*Our Ref:*110062124

The Director.

National Commission for Science,
Technology and Innovation (NACOSTI),
P. O. Box 30623, 00100
Nairobi. Kenya

Dear Sir/Madam:
RE: RESEARCH AUTHORIZATION FOR: BRENDA OLOO

Miss Brenda is a dedicated postgraduate student pursuing a Master of Business Administration (MBA) at Africa Nazarene University.

As part of her academic journey, she is undertaking a crucial research study titled: "**Innovation Project Implementation and Financial Position of State-Owned Airlines: A Case of Kenya Airways**."

We humbly seek your support in facilitating her research. Any assistance extended to her will not only be deeply appreciated but will also play a vital role in the successful

completion of her studies. Your kindness and cooperation will have a meaningful impact on her academic pursuit.

Yours faithfully,

Kimani Gichuhi; PhD
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