MANAGEMENT OF DELAYS AND OPERATIONAL IRREGULARITIES AT TAP AIRLINE

Operational Changes and Challenges.

ANILDO DE JESUS SEMEDO BARRETO

Provas destinadas à obtenção de grau de:

Mestre em Operações de Transporte Aéreo

February 2025

VERSÃO DEFINITIVA

[This page has been left blank intentionally]

ISEC LISBOA | INSTITUTO SUPERIOR DE EDUCAÇÃO E CIÊNCIAS

Escola de Gestão, Engenharia e Aeronáutica

Provas para obtenção do grau de Mestre em Operações de Transporte Aéreo

MANAGEMENT OF DELAYS AND OPERATIONAL IRREGULARITIES AT TAP AIRLINE

Operacional Changes and Challenges

Autor(a): Anildo de Jesus Semedo Barreto

Orientador: Professor Especialista Eurico Pimenta de Brito

February 2025

[This page has been left blank intentionally]

ACKNOWLEDGEMENTS

First and foremost, I would like to take a moment to acknowledge my own perseverance and hard work throughout these two years of dedication. This journey has been filled with challenges and moments of self-doubt, but pushing through has not only shaped this thesis but also my personal growth. I am proud of the effort and determination I've shown to bring this project to completion.

I owe a deep debt of gratitude to Specialist Eurico Brito and Professor Ana Cristina Freitas, whose unwavering support and insightful feedback have guided me throughout this process. Their encouragement and expertise have been instrumental in helping me refine my ideas and approach.

A special thank you goes to the interviewees who took the time to share their knowledge and insights with me. Their contributions have enriched this research in countless ways, and I am grateful for their willingness to be a part of this project.

I extend my appreciation to the faculty members of the ISEC LISBOA for their contributions to my academic growth. Their lectures, discussions, and feedback have significantly enriched my understanding of the subject matter.

I would like to thank my peers and colleagues for their camaraderie and collaborative spirit. Our discussions and shared experiences have contributed to a stimulating academic environment.

Finally, I want to express my heartfelt thanks to my girlfriend, Mónica Correia. Her endless understanding, patience, and support throughout this journey have meant more to me than words can express. She has been my anchor through the long nights of study and the busy days of research, and I am truly fortunate to have had her by my side during this time

This thesis would not have been possible without the collective support of these individuals and entities. I am sincerely grateful for their contributions to my academic journey.

[This page has been left blank intentionally]

RESUMO

Esta dissertação de mestrado examina o papel crítico da pontualidade no desempenho das companhias aéreas, particularmente o seu impacto na credibilidade e no sucesso de uma companhia aérea. Em 2018, a TAP AIR Portugal enfrentou desafios significativos devido a atrasos, o que levou a empresa a implementar medidas que produziram efeitos positivos em 2019. Este estudo tem como objetivo comparar a situação de atraso em 2019 com o período correspondente em 2022/23, analisando os efeitos das alterações nos novos resultados

O objetivo deste estudo é analisar o modelo de relação entre os fatores sob o controlo da TAP AIR Portugal que podem contribuir para os atrasos e os atrasos reais sofridos pela companhia aérea no Aeroporto de Lisboa, e o objetivo final é tirar conclusões sobre as medidas mais eficazes para reduzir atrasos nas operações da TAP AIR Portugal no Aeroporto de Lisboa.

Esta investigação adota uma metodologia qualitativa, especificamente uma abordagem de estudo de caso exploratório, para investigar os meandros dos fatores de atraso na TAP AIR Portugal. Os dados foram recolhidos através de entrevistas semiestruturadas e análise documental, proporcionando uma compreensão abrangente dos fatores que contribuem para os atrasos, e os dados das entrevistas foram submetidos a análise de conteúdo utilizando um procedimento de método misto, apoiado por ferramentas de software dedicadas para descobrir padrões e perceções.

A Pontualidade do Voo é um elemento de desempenho muito importante, principalmente para a credibilidade e o sucesso de uma companhia aérea. Este estudo contribui para o discurso contínuo sobre a pontualidade das companhias aéreas e fornece informações valiosas para a TAP AIR Portugal na elaboração de estratégias eficazes para minimizar atrasos no Aeroporto de Lisboa.

Palavras-chave: Pontualidade de voo, Irregularidades operacionais, TAP AIR Portugal, Atrasos de voos.

[This page has been left blank intentionally]

ABSTRACT

This master's dissertation examines the critical role of punctuality in airline performance, particularly its impact on airline's credibility and success. In 2018, TAP AIR Portugal faced significant challenges due to delays, which led the company to implement measures that produced positive effects in 2019.

This study aims to compare the delay situation in 2019 with the corresponding period in 2022/23, analyzing the effects of changes in the new results The objective of this study is to analyze the relationship model between the factors under the control of TAP AIR Portugal that may contribute to delays and the actual delays suffered by the airline at Lisbon Airport, and the final objective is to draw conclusions about the most effective measures to reduce delays in TAP AIR Portugal operations at Lisbon Airport.

This research adopts a qualitative methodology, specifically an exploratory case study approach, to investigate the intricacies of delay factors at TAP AIR Portugal.

Data was collected through semi-structured interviews and document analysis, providing a comprehensive understanding of the factors contributing to delays, and interview data was subjected to content analysis using a mixed method procedure, supported by dedicated software tools to discover patterns and insights.

Flight Punctuality is a very important performance element, especially for the credibility and success of an airline. This study contributes to the ongoing discourse on airline punctuality and provides valuable information for TAP AIR Portugal in devising effective strategies to minimize delays at Lisbon Airport.

Keywords: *Flight Punctuality, Operational Irregularities, TAP Air Portugal, Flight Delays.*

[This page has been left blank intentionally]

Table of Contents

LIST OF FIGURES

[This page has been left blank intentionally]

LIST OF TABLES

[This page has been left blank intentionally]

ABBREVIATIONS AND ACRONYMS

A319ceo – Airbus 319 Classic Engine Option;

A320ceo – Airbus 320 Classic Engine Option;

A320neo – Airbus 320 New Engine Option;

A321LR – Airbus 321neo Long Range;

A321neo – Airbus 321 New Engine Option;

A330neo – Airbus 330 New Engine Option;

A330ceo – Airbus 330 Classic Engine Option;

A340 – Airbus 340;

A-CDM – Airport-Collaborative Decision Making;

APEX- Airline Passenger Experience Association;

AI – Artificial Intelligence;

ANA – (Portuguese) National Airports Manager (ANA Vinci);

ANAC – (Portuguese) National Civil Aviation Authority (Former INAC);

ASK – Available Seat Kilometres;

ATR – Regional Transport Aircraft;

ATC – Air Traffic Control;

AWS – Aging Warning System;

ATFM – Air Traffic Flow Management;

B737 – Boeing 737, B747

– Boeing 747;

CEO – Chief Executive Officer;

CCO – Operational Control Centre;

CDO – Continuous Descent Operations,

CODA – Central Office for Delays Analysis ;

COO – Chief Operating Officer;

CTOT – Calculated Take Off Time;

E190 –Embraer 190;

EBITDA – Earnings Before Interest, taxes, Depreciation, and Amortization;

EU – European Union;

FAA- Federal Aviation Administration;

FADE – Flight-Approved Data Exchange,

GSP – Ground Service Provider;

IATA – International Air Transport Association;

ICAO – International Civil Aviation Organization;

IDC – Integrated Data Center;

INAC – National Civil Aviation Institute;

IROP – Irregular Operation;

IOCC – Integrated Operations Control Centre;

LIS – Lisbon International Airport (IATA Code);

L-1011 – Lockheed 1011;

NAV – Navigation;

NAS- National Airspace System,

OTP – On-Time Performance;

PGA – Portugália Airlines;

P-RNAV – Precision Area Navigation;

PLF – Passenger Load Factor;

NSP – Navigation Service Provider; Net Promoter Score;

RPK – Revenue Passenger Kilometres; SLA-Service Level Agreement;

TAP- Portugues Air Transport;

TOBT-Target Off Block Time;

TRC-Turnaround Coordinator

UK- United Kingdom;

1. INTRODUCTION

TAP Air Portugal, one of the main European airlines, faces continuous challenges in maintaining its operations in 2018, especially at Humberto Delgado Airport (LIS), which is one of its main hubs.

In 2018, TAP dealt with several problems that resulted in frequent delays to its flights. These delays were caused by a combination of factors, including infrastructure limitations, logistical problems and issues related to human resource management. The impact of these delays was not just limited to the passenger experience but also affected the company's efficiency and image.

The objective of this master's dissertation was to carry out methodological research related to TAP implemented mitigating measures in 2018, to identify if those measures were still contributing positively to TAP present Operations. The results allowed us to identify improvements implemented since then, as well as new challenges that have emerged, especially considering changes in the aviation sector caused by the COVID-19 pandemic.

To achieve this objective, we used a semi-structure interview to collect data from TAP professionals and others relate companies in aviation industry, and we also included analysis of flight data, a literature review on airline operations. This approach allowed us a comprehensive understanding of the causes of delays and the strategies adopted by TAP to mitigate them.

The results obtained, provided valuable insights into the evolution of TAP's operations, highlighting both the progress achieved and the areas that still require improvement. This dissertation will not only contribute to improving TAP's operations but will also provide useful information for other airlines facing similar challenges in their daily operations, will provide a contribution for the academia, as well as contributions for the existent knowledge.

1.1. MOTIVATION

According to CODA (n.d.), airlines are responsible for 43% of delays, while responsible for the 57% are air traffic controls (ATC) (33.7%), airports (16.1%) and climate change (7.3%). The Figueiredo (2022), identifies variables responsible for delays relating to TAP Airline and the measures implemented by TAP in 2018, to address operational delays.

The measures included recruitment and training of the so-called Turnaround Coordinators at LIS airport, which provided greater interconnection between services linked to arrivals and departures, through implemented measure integrated operational control centre (IOCC) . The effects of the Covid-19 pandemic led to profound changes in the volume of traffic, the company's structure, its employees and its operations. However, there was a recovery in the volume of traffic in 2021, 2022 and 2023, currently surpassing the level in 2019. The new changes that have occurred in operations have introduced differences in the organization and functioning of this sector relatively. Therefore, it was important to analyse what these changes were and related them to the results of the delays observed in 2022 and 2023, considering the cause-effect model in the delays of the variables under TAP's responsibility and others, examining the relationship between the changes in the structure and functioning of the company with variations in the results of delays.

1.2. STUDIES OBJECTIVES

1) Investigate the factors that are under TAP's responsibility that could potentially cause delays in TAP's operations at Lisbon airport.
2) Situate the issue of TAP delays at Lisbon Airport in the management of delays and operational irregularities of airlines in general.
3) Understand the recovery of TAP AIR Portugal's punctuality in 2019, after the measures taken in 2018.
4) Analyse the effect that changes made to TAP and LIS after 2019 had on delays in 2022/23.
5) Identify, based on the results, which potential causes of delays are responsibility of TAP Air Portugal.

1.3. Methodology

To carry out this dissertation, a research methodology based on semi-structure interview were adopted and implemented in an exploratory qualitative approach.

A total of 8 participants were selected: current and former TAP, ANA and Ground Force managers, pilots, turnaround managers and employees of the Operational Control Centre.

1.4. Data Analysis

The interview data was subjected to content analysis according to a mixed procedure and with software support.

1.5. Thesis Struture

This dissertation is organized into five main chapters. The themes and organization of this dissertation chapters can be summarized as follows:

Chapter 1. In Chapter 1, the dissertation introduction is presented, along with the motivation for choosing the topic, and the study objectives are also outlined.

Chapter 2. Literature review: establishes the foundational knowledge and context for the dissertation where key topics related to airline operations and delays is explored, specifically as they pertain to TAP Air Portugal. An introduction to TAP Air Portugal's history, is features, together with the importance of the communication in aviation industry, potential ATC issues that result in operational delays, and TAP's mission, operational challenges during 2021, 2022 and 2023 including strategies and outcomes were illustrated.

Chapter 3. Methodology: this chapter details and provides justification for the chosen methodology, which follows a qualitative approach. Within this chapter, we introduce the participants involved, outline the methodological framework adopted—specifically the use of semi-structured interviews—and describe the selected data analysis method, content analysis.

Chapter 4. Results and Discussion: the results obtained is presented and, aligning them with the previously established theoretical framework, we focused on addressing each of the research objectives outlined in this study.

Chapter 5: Conclusions: concludes the study by addressing the research questions and reflecting on how this dissertation has contributed to aviation industry, academia, and to existent knowledge. This chapter also highlights the study's limitations and offers suggestions for future research.

2. LITERATURE REVIEW

The aviation industry is critical to global connectivity and the global economy. However, airlines face significant challenges related to delays and operational irregularities that impact both passengers and operational efficiency. Punctuality was, is and always will be a vital element for any airline, whether for purely commercial reasons or for operational purposes. But as with any other means of transport, it is impossible to conceive of air transport without disruptive factors. Regarding external factors, adverse weather conditions, airport congestion, lack of capacity or industrial actions are just a few examples that will inevitably cause delays for airlines. Considering internal factors, aircraft crewing and scheduling, network planning, aircraft maintenance, ground handling, aircraft stopping and other unscheduled tasks or irregularities, these are among the main factors disturbing airline punctuality (Figueiredo, 2022).

2.1. Main Causes of Operational Irregularities

In Zámková (2017) studies between 2008 and 2014, approximately 50% of flights were delayed on a single airline. The conclusion was that the delays are mostly caused by previous flights of the same plane, and the longest ones appear due to technical maintenance situations or aircraft defects. Other factors such as operational control, air traffic control and airport limitations tend to cause much shorter flight delays.

*Weathe*r plays a crucial role in aviation safety, efficiency, and overall operations. Airlines and airports must navigate various weather-related challenges to ensure smooth travel experiences for passengers. FAA Statistics: Approximately 70% of delays in the National Airspace System (NAS) are caused by weather. These delays result in lost revenue, increased operating costs, and inconvenience for passengers. Accidents and Incidents: Weather contributes to 23% of all aviation accidents, leading to an estimated national cost of $3 billion for accident damage, injuries, and unexpected expenses (Kulesa, 2002).

Thunderstorms brings severe turbulence, intense up- and downdrafts, lightning, hail, heavy precipitation, icing, wind shear, microbursts, and tornadoes. The impact on operations can be airport closures, airport reduced capacities, stops on ground operations and it can also lead to lost revenue and excess maintenance costs. (World Meteorological Organization, 2024).

Climate change can also negatively impact aviation operations when linked to unseasonal and extreme weather. Low clouds, fog, and rain reduce visibility, making landings and take-offs challenging. Wind determines runway usage for take-offs and landings. The Specific Impacts can be (Gratton, 2022):

- Increased take-off distances and reduced payloads due to altered runway conditions.
- More frequent and severe encounters with clear air turbulence.
- Shifting patterns of wildlife (birds) affecting flight safety hazards.
- Burdens on airport infrastructure.
-

Crew related Problems can also significantly disrupt schedules, which impact passenger experience and lead to financial lost. Airlines and airport rely heavily on them to ensure a good customer service, safety and efficient operations. Crew planning and scheduling represent critical pillars of operational efficiency within the aviation industry, commanding significant attention and resources due to their intricate nature and substantial impact on financial performance. As airlines navigate the complexities of managing crew resources in the face of ever-expanding flight schedules and workforce demands, the importance of precision in crew planning cannot be overstated. Crew management involves intricate planning, scheduling, and coordination (Anbil, 1991).

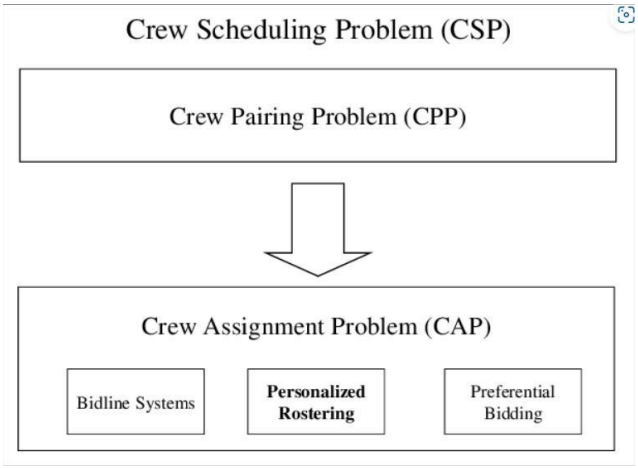

Figure 1: components of the crew scheduling problem (Anbil, 1991).

Airlines also deal with *passengers' problems*. Airline delays can impact passengers deeply, causing issues from minor inconveniences to more serious disruptions. Although air travel is very convenient especially regarding the speed, it often brings a lot a challenge [airline delays] which is a frustrating experience for passengers worldwide. The profound delays effects on passengers extend beyond the confines of the airport terminal. Understanding the multifaceted nature of these disruptions is crucial in appreciating the full extent of their impact on individuals and society (Claim Flights, 2023).

According to Oliver Lewis (2023), a flight delay of just 64 minutes is enough for passengers to become frustrated. Usually, 71% of travellers have experienced a flight delay or cancellation, and 27% of these have missed a connecting flight as a result. Moreover, 61% of passengers feel that airlines do not always explain delays or cancellations properly, and 45% become frustrated by the lack of information on how the issues will be resolved. However, 84% would be more understanding if airlines were transparent about the issues causing delays.

2.2. TAP Air Portugal History

TAP Air Portugal, the official flag carrier of Portugal, is headquartered at Lisbon Airport, serving as its primary hub. A proud member of the Star Alliance since 2005, TAP operates an extensive network, with an average of 2,500 weekly flights connecting to 90 destinations across 34 countries worldwide. The airline boasts a diverse fleet of 100 aircraft, predominantly manufactured by Airbus, complemented by 19 Embraer aircraft operated by TAP Express, the regional affiliate. Established on March 14, 1945, TAP commenced its commercial services on September 19, 1946. Originally established as a national institution, the airline underwent its first privatization in 1953, marking a significant shift in ownership. Throughout its history, TAP Air Portugal has experienced a dynamic interplay between periods of public and private ownership (TAP, 2024).

In 1965, TAP Air Portugal acquired its inaugural Boeing-built jetliner, the 707. By 1967, the airline achieved a pioneering milestone in European aviation by transitioning to an exclusive fleet of jet aircraft. A pivotal moment arrived in 1979 when TAP initiated a comprehensive modernization program and subsequently rebranded itself as TAP Air Portugal. As the decade concluded, the airline boasted a fleet of 32 contemporary airliners servicing over 40 destinations across four continents (TAP, 2024).

The 1980s witnessed a transformative phase for TAP as it phased out Boeing 707s and 747s, introducing Lockheed L-1011 TriStar's and Airbus A310s for its long-haul routes. In 1983, the airline marked a new era by incorporating Boeing 737-200s for short-haul operations. Progressing into the 1990s, TAP Air Portugal underwent a privatization process, with the Portuguese government selling a majority stake to private investors. This change in ownership brought about a period of restructuring and modernization, as the airline aimed to improve its efficiency and competitiveness in the global market. TAP also divested its Boeing 727s and 737s, opting for Airbus A319, A320, and A321 aircraft. Simultaneously, Airbus A340s took the place of the Lockheed L-1011 TriStar's. These strategic shifts solidified TAP's status as an exclusive Airbus operator, maintaining an enduring partnership with the European aircraft manufacturer to this day (Loh, 2022).

In the 2000s, TAP Air Portugal, underwent several significant changes and developments. The Company invested in modernizing its fleet. The airline acquired new aircraft, particularly from the Airbus A320 family, to replace older models and improve efficiency and passenger comfort. TAP expanded its long-haul network, adding new destinations in North and South America and Africa. This was part of a strategy to enhance its hub in Lisbon and strengthen its position as a bridge between Europe and other continents, especially Latin America. The early 2000s were challenging financially for many airlines, and TAP was no exception. The airline faced economic difficulties, which led to various restructuring efforts to improve profitability. The Portuguese government-initiated efforts to privatize TAP during this period, although the process faced delays and challenges. Full privatization did not occur until later, in the 2010s (TAP, 2024).

One of the most significant developments for TAP in the 2000s was joining the Star Alliance in March 2005. This membership enhanced the airline's global connectivity and offered passengers access to a broader network of destinations through codeshare agreements with other member airlines. TAP also focused on improving its customer service and onboard experience. This included upgrading cabin interiors, introducing new in-flight entertainment options, and improving catering services. In 2005, TAP rebranded itself as "TAP Portugal" (dropping "Air" from the name), reflecting a modernized image and a more contemporary approach to its branding and marketing strategies (TAP, 2024).

TAP invested in enhancing its online presence, launching an improved website with online booking capabilities, and later introducing mobile apps to facilitate easier booking and checkin processes for passengers. Operational Efficiency: The airline also adopted new technologies

to improve operational efficiency, including upgrades to its reservations systems and the implementation of more advanced maintenance management systems. Overall, the 2000s were a transformative decade for TAP Air Portugal, marked by fleet modernization, network expansion, joining the Star Alliance, and significant efforts to improve financial performance and customer service. These changes helped lay the groundwork for the airline's continued growth and development in the following decades (TAP, 2024).

The 2010s were a pivotal decade for TAP Air Portugal, marked by significant changes, including privatization, fleet modernization, network expansion, and strategic partnerships. These years were characterized by efforts to enhance the airline's financial stability, operational efficiency, and service quality. A major development for TAP Air Portugal in the 2010s was the completion of its privatization process. In 2015, the same year that TAP commemorate it´s 70 years old, the Portuguese government sold a 61% stake in TAP to the Atlantic Gateway consortium, led by David Neeleman, the founder of JetBlue Airways, and Humberto Pedrosa, a Portuguese entrepreneur. This move aimed to inject much-needed capital and management expertise into the airline. In 2016, the Portuguese government increased its stake in TAP to 50%, balancing private and public interests. This adjustment was part of a revised agreement to ensure greater national control over the strategic carrier while still benefiting from private investment and management (Figueiredo, 2022).

TAP invested in technological advancements to enhance customer experience and operational efficiency. This included the introduction of a new reservations system, enhanced online services, and mobile applications to streamline booking, check-in, and in-flight services. TAP committed to various environmental initiatives, including reducing carbon emissions and implementing more sustainable operational practices, being the first A330neo operator in the world. The introduction of newer, more fuel-efficient aircraft was a key part of this strategy (TAP, 2024).

The year 2020 was a disaster for the entire aviation industry. The COVID-19 pandemic had a profound impact on TAP Air Portugal, as it did on the entire global aviation industry. The COVID-19 pandemic had a significant and multifaceted impact on TAP Air Portugal, leading to operational disruptions, financial challenges, and workforce adjustments. The Portuguese government's financial support and renationalization were crucial in stabilizing the airline. TAP's implementation of health and safety measures, digital transformation, and operational adjustments helped it navigate the crisis. As the airline continues to recover, its restructuring

efforts and strategic initiatives aim to ensure long-term sustainability and resilience in a post pandemic world. In 2022 TAP is rewarded as the safest Airline in Europa and the 5th in the world (TAP, 2024).

2.3. Communication Importance in Reducing Delays

Chong (2007), Highlighted the fact that Corporations usually focus on external communication, neglecting internal communication. While the external communication is important to build public relations, build corporate image, differentiate from the competitors, internal communication, must be of most importance to any organization, because employees are the most trusted information sources.

According to Faisal (2024), in the airline industry, where every second is crucial and safety is of utmost importance, efficient internal communication transcends being mere necessity, but a strategic asset. Effective communication is the backbone of operational success and passenger satisfaction, particularly in the fast-paced world of airline operations. Airline operations have a complex nature, therefore, managing real-time flight updates and keeping every crucial department informed are vital to ensure a good workflow.

In the commercial airline industry, effective communication is essential between three key parties, which is the airport, ground handling teams and control center. However, the use of different communication channels by each one of those department is a major obstacle to smooth information flow. If the control centre can easily communicate with the airport but sometimes face difficulties in identifying the correct channel for the ground handling, may result in significant time losses that with time turns into hours each day (Airbus 2024).

When communication fails in airline operation, it can result in costly delays, increased operational expenses, and even potential safety concerns. Alternatively, strong internal communication fosters efficiency, minimizes errors, and ensures a more robust coordination between the involved parties, keeping operations on schedule and delivering a better experience for the passengers (Faisal 2024).

Faisal (2024), highlighted some effective communication practices in the airline industry today:

- Introduce a single communication network.
- Ensure instant updates and alerts.

- Cultivate an environment of transparent communication.
- Integrate a multi-faceted communication Framework.
- Maintain regulatory compliance and data security.
- Ensure access to training and guidance.

Effective communication and coordination between ATCs and airline pilot and dispatcher are also essential for minimizing delays and optimizing airspace utilization. Delays can occur when there is a breakdown in communication or coordination between the two parties, leading to inefficiencies in flight planning, sequencing, or rerouting. Timely and accurate dissemination of information regarding airspace restrictions, traffic flow management initiatives, and weather updates is crucial for enabling airlines to adjust their operations proactively and minimize the impact of delays on passengers (Zaidi, 2023).

2.4. Delays Related to Air Traffic Control Issues.

Air Transport Controllers (ATCs) are crucial figures in the aviation industry, responsible for managing the safe and efficient flow of air traffic within their designated airspace. However, their decisions and actions can also contribute to airline delays under certain circumstances. Here's how Air Transport Controllers can affect airline delays (Hebert, 2020):

Airspace congestion management: ATCs monitor and regulate the flow of aircraft in congested airspace, particularly around busy airports or in heavily trafficked regions. During peak travel periods or adverse weather conditions, controllers may implement traffic management initiatives such as ground stops, flow control programs, or airspace restrictions to alleviate congestion and ensure safety, which sometimes results in delays (Hebert, 2020).

Routing and altitude assignments: ATCs determine the routing and altitude assignments for aircraft within their jurisdiction, considering factors such as traffic volume, weather conditions, and airspace restrictions. Changes to flight paths or altitude assignments are necessary to maintain safe separation between aircraft or to avoid adverse weather phenomena. However,

these adjustments can lead to longer flight times or deviations from planned routes, resulting in delays for airlines and their passengers (Hebert, 2020).

Weather-related delays: ATCs play a critical role in managing air traffic during adverse weather conditions, such as thunderstorms, fog, or high winds. They are responsible to implement holding patterns, ground stops, or reroutes to avoid areas of severe weather or turbulence, prioritizing safety above all else, which also results in significant delays for airlines as flights are delayed or diverted to alternative airports (Hebert, 2020).

Capacity constraints and staffing issues: Capacity constraints and staffing shortages within ATC facilities results in delays during peak periods. Understaffed or overworked controllers struggle to manage air traffic effectively, leading to delays in the provision of air traffic services or the implementation of traffic management initiatives. On the other hand, technical issues or equipment failures within ATC facilities can further compound delays, causing disruptions to the flow of air traffic and impacting airline operations (Donnellan 2024).

Sometimes technical issues arise within air traffic control systems and can lead to significant delays and even cancellations of flights. A technical issue with UK air traffic control systems in August 2023 caused thousands of air passengers to suffer long delays and cancellations. National Air Traffic Services had to limit the number of planes landing, which led to people being stuck in the UK and abroad (Slow ,2023).

In such situations, airlines are not typically responsible for the disruption caused by air traffic control faults, as these are considered 'extraordinary circumstances. Therefore, passengers may not be entitled to financial compensation from the airlines for delays or cancellations caused by ATC issues. However, airlines still have a ‘duty of care’ to aid with food, drink, and accommodation, if necessary, until they can fly passengers to their destination (Elton, 2023).

2.5. TAP Air Portugal Performance and Strategic Moves In 2018/19, 2021, 2022 and 2023.

TAP Air Portugal has faced various operational challenges over the years, particularly regarding flight delays and irregularities. As a major airline connecting Europe, South America, and Africa, TAP has had to manage disruptions caused by technical issues, staffing shortages, air traffic control restrictions, and external factors such as the COVID-19 pandemic (Figueiredo, 2022).

Between 2018 and 2023, TAP's performance in handling delays and irregularities has fluctuated. While pre-pandemic years (2018–2019) saw efforts to improve punctuality and customer service, the airline faced significant disruptions in 2021 due to post-pandemic recovery struggles, labor disputes, and capacity constraints. The years 2022 and 2023 continued to present challenges, including strikes, financial restructuring, and increased passenger demand, all impacting service reliability (TAP, 2023) (TAP, 2024).

Examining TAP's approach to delay management across these years provides insight into its operational resilience, customer service policies, and adaptation to the evolving aviation landscape

2.5.1. Delays And Irregularities in Years 2018/19

According to the Eurocontrol (2019), 2018 was a year of many poor results in terms of punctuality for airlines, including TAP Air Portugal. In the Euro control area, more than one million flights were delayed because of air traffic flow and in route capacity management regulations. TAP Air Portugal faced significant challenges that impacted its operational performance and financial results. The airline closed the year with a punctuality rate of 58.4%, which adversely affected its Net Promoter Score (NPS). This decline in punctuality was attributed to both internal and external factors (Figueiredo, 2022).

<u>External Challenges</u>

One of the primary external challenges was the severe capacity constraints at Lisbon Airport (LIS). The airport was unable to handle the high level of activity, leading to delays and operational disruptions. LIS being TAP's main HUB, contributed greatly to the company's lack

of punctuality in 2018, which significantly contributed to the lower punctuality of TAP flights (Figueiredo, 2022).

Lisbon Airport's on-time performance (LIS) between 2017 and 2019 shows that:

-LIS occupied first place twice (in 2017 and 2019) in the list of the 20 least punctual European airports (Eurocontrol ,2019);

-in 2018, LIS occupied third place in the ranking of the 20 least punctual European airports, but was the one with the highest percentage of departure delays (68.6%) (Eurocontrol 2018);

Air traffic control delays also played a key role in disrupting TAP´s Operation. According to Janzen (2023), 2018 was one of the worst in almost a decade when it came to air traffic control delays and flight cancellations. Eurocontrol (2019), stated that in 2018, 37% of en-route air traffic flow management delays were due to air traffic control capacity, while 23% were attributed to air traffic control staffing.

Internal Challenges

One of the main internal challenges that TAP had in 2018 was the integration of new aircraft into the fleet, which often resulted in scheduling delays and maintenance issues. Additionally, inefficiencies in crew scheduling and turnaround times at airports further restricted the airline's ability to maintain timely operations (TAP 2019).

Internal Mitigation Measures

To simplify operations, enhance coordination, and improve overall efficiency, ultimately leading to better punctuality and reduced flight cancellations, TAP implemented several mitigating measures in 2018. Those internals measures included (Figueiredo, 2022):

- Provision of Reserve Aircraft.
- Modifications to passenger boarding processes.
- Increase in Pilots and Crew Members.
- The recruitment, selection and training of many new employee, of those 180 were TRC's.
- Efficient Organization of Operational Information and Teams.

- Development and Implementation of an Integrated Operations Control Centre (IOCC).
- The organization and regular promotion of punctuality committees.

Financial Impacts

The year was also marked by a substantial rise in fuel costs, which increased by 37.6%, amounting to approximately €218.4 million more than in 2017. Of this increase, around €169 million was directly related to higher jet fuel prices. Additionally, traffic operating costs worsened significantly due to extraordinary expenses stemming from irregularities such as cancellations and delays in the first half of the year, totalling approximately €41 million. The increase in airport taxes, particularly at the Lisbon Hub where TAP holds the largest market share, further exacerbated operating costs (TAP, 2019).

Operational And Financial Results

Despite these challenges, TAP achieved a record growth rate in passenger numbers, carrying 15.8 million passengers in 2018, a 10.4% increase from the previous year. However, the substantial rise in operating costs led to an Operating Profit of -€44 million and a Net Profit of -€118 million (TAP, 2019).

2019 Punctuality

In 2019, TAP Air Portugal saw notable enhancements in its operational performance, with significant improvements in both punctuality and regularity indicators compared to the previous year. The overall punctuality rate increased by 5.5%, rising from 58.4% in 2018 to 63.9% in 2019. The Lisbon-Porto air bridge route was particularly impressive, showing a 22% improvement in punctuality, jumping from 52% in 2018 to 74% in 2019. Additionally, the number of cancelled flights decreased by 56%, representing only 0.8% of the total flights, a marked improvement from 1.8% in 2018 (TAP, 2019).

TABLE 1: 2018 vs 2019 punctuality rate.
Source: (TAP, 2019)

Year	2018	2019
Punctuality (%)	58.4%	63.9%

These positive changes were primarily driven by the implementation of the mitigating measures implemented in 2018 (TAP, 2019).

2.5.2. 2021 Performance and strategies

In 2021, TAP Air Portugal showed significant recovery despite the ongoing impact of the COVID-19 pandemic, particularly during the beginning and end of the year when new variants surged. The year started with heavy restrictions across most of TAP's markets. However, as vaccination rates increased, governments began to ease travel restrictions, facilitating a recovery that was again challenged in December by the emergence of the Omicron variant. Notably, TAP's major transatlantic markets, Brazil and the United States, only reopened in September and November, respectively (TAP 2021).

Operating indicators reflected improvement compared to 2020, though they remained below pre-pandemic levels in 2019. The number of passengers carried increased by 25.1% to 5.8 million, representing 34.2% of the 2019 figure. Available Seat Kilometers (ASKs) rose by 28.8%, with December ASKs reaching 72.6% of 2019 levels. Despite these gains, the load factor slightly decreased to 63% for the year. To counteract restrictions and stimulate recovery, TAP expanded its route portfolio, introducing new destinations across both longhaul and short/mid-haul sectors. New destinations included Cancun, Punta Cana, Maceió, Zagreb, Ibiza, Fuerteventura, Agadir, Oujda, Monastir, and Djerba (TAP, 2021).

TAP Cargo continued to experience strong growth in 2021, capitalizing on increased demand for air cargo services. The cargo division saw an 88% year-on-year growth, contributing 17.0% to TAP’s total revenues. Throughout the year, TAP remained committed to its cost-cutting and transformation initiatives outlined in the Restructuring Plan delivered to the European Commission in December 2020. This plan, part of the emergency aid framework, was approved by the European Commission in December 2021 (TAP,2021).

In the context of restructuring aid and COVID-19 damage compensations, TAP underwent two capital increases in May and December, resulting in the Portuguese State becoming TAP, S.A.'s sole shareholder. In May, the State's shareholding increased to 92%, and by December 2021, it reached 100%. Consequently, TAP, SGPS, S.A. (TAP SGPS or TAP Group) became independent of TAP, S.A., both entities being majority-owned by the Portuguese State. As a result of the

increased state ownership, a new Board of Directors and an expanded Executive Committee were appointed in June 2021, bringing new expertise to the company (TAP,2021).

The European Commission's approval of TAP's Restructuring Plan in December 2021 included a total restructuring aid package of EUR 2.55 billion for the TAP Group, of which EUR 990 million was still to be received, with the restructuring period extending until 2025. Additionally, the company received COVID-19 damage compensations amounting to EUR 640 million (TAP,2021).

2021 Fleet

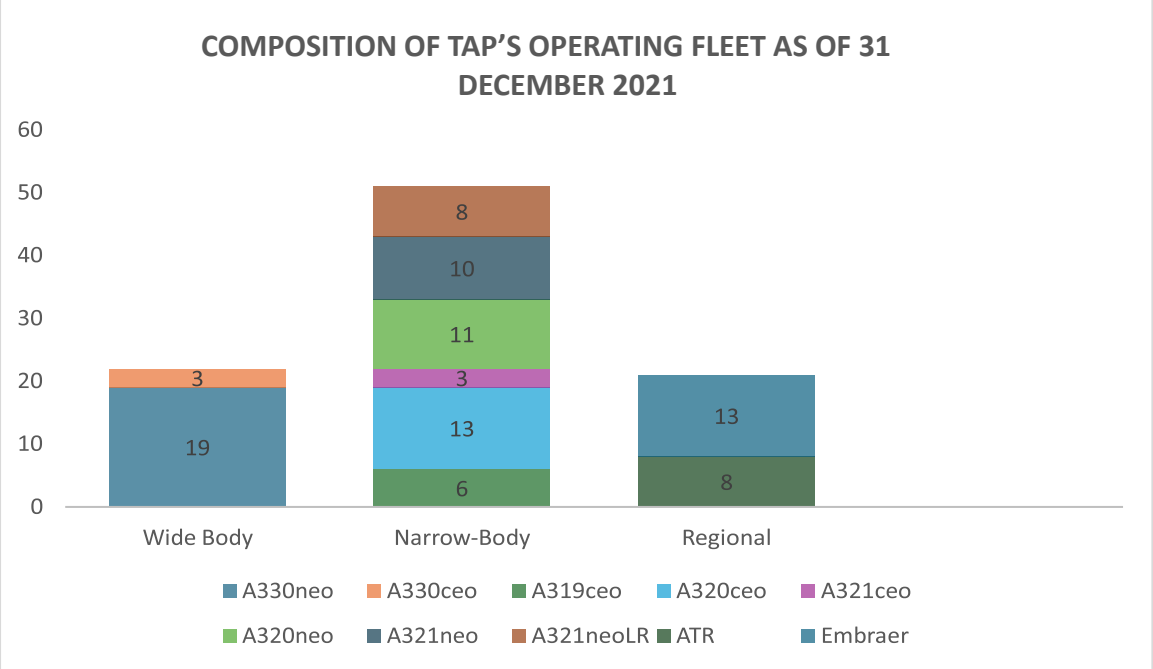

Figure2: TAP operation Fleet 2021; Source: Adapted from (TAP, 2021).

In 2021, TAP Air Portugal reduced its fleet by two aircraft, ending the year with 94 aircraft. The phase-out included 2 Airbus A330ceo, 3 Airbus A320ceo, and 2 Airbus A319ceo, while 2 A321neo LR and 3 A320neo were added, with secured financing for these new aircraft. By year-end, 66% of the mid- and long-haul fleet consisted of NEO-family aircraft, up from 57% in 2020 and 43% in 2019. The incorporation of more efficient NEO-family aircraft aligns with TAP's strategy to reduce fuel consumption and adapt operations to demand recovery. The A321neo LR model proved advantageous in low-demand environments, enabling costeffective

long-haul flights from Lisbon to the US, Canada, Brazil, and Africa. TAP's regional fleet also played a critical role during periods of stringent border restrictions and low demand. Additionally, TAP converted 2 A330ceo aircraft to cargo-only configurations to meet increasing cargo demand, significantly boosting operating income. The fleet renewal program, initiated after TAP's privatization in 2015, positioned TAP with one of the newest fleets in Europe. The COVID-19 pandemic accelerated the retirement of less efficient aircraft, and TAP adjusted its delivery schedule for A320neo and A330neo aircraft as per the 2020 agreement with Airbus (TAP,2021).

2021 Punctuality

In 2021, TAP Air Portugal faced a challenging operational environment due to the ongoing COVID-19 pandemic, which continued to impact flight schedules and overall punctuality. Despite these difficulties, TAP made significant strides in improving its operational performance and was notably recognized as the most punctual airline in Portugal in June 2021 (NewsAvia,2021).

However, the exact punctuality rate for 2021 is not specified in the TAP S.A annual report information's.

2.5.3. 2022 Performance and Strategies

In 2022, TAP Air Portugal showed remarkable recovery from the impacts of the COVID-19 pandemic, achieving significant operational and financial improvements. The airline managed to restore 87% of its pre-crisis capacity, a notable 94% increase compared to 2021. This recovery was facilitated by a surge in demand as travel restrictions eased following the initial months of 2022, which saw renewed COVID-19 cases and travel limitations (TAP, 2022).

TAP's operational metrics also improved significantly. The airline transported 13.8 million passengers in 2022, a 136% increase from the previous year, reaching 81% of its 2019 passenger levels. The load factor, a measure of how well available seat capacity is being used, rose to 80%, mirroring the levels seen in 2019. These improvements were partly due to TAP's strategic expansion of its route portfolio and efficient use of its fleet, particularly the incorporation of more fuel-efficient NEO-family aircraft, which constituted 66% of its mid- and long-haul fleet by the end of the year (TAP 2022).

Financially, TAP achieved a record revenue of EUR 3.485 billion, driven by higher load factors and increased yields. Despite facing challenges such as rising jet fuel prices, inflation, and adverse currency movements, TAP posted a positive recurring EBIT of EUR 248.8 million, surpassing its pre-crisis EBIT of 2019 by EUR 196.1 million. This financial strength was further underscored by a net profit of EUR 65.6 million for the year (TAP 2023). Additionally, TAP continued its transformation plan, focusing on cost reductions and operational efficiency. The airline renegotiated close to 1,300 contracts and successfully transferred allocated slots as part of its restructuring commitments to the European Commission. This comprehensive approach helped TAP navigate the recovery phase effectively and set a strong foundation for future growth (TAP, 2022).

2022 FLEET

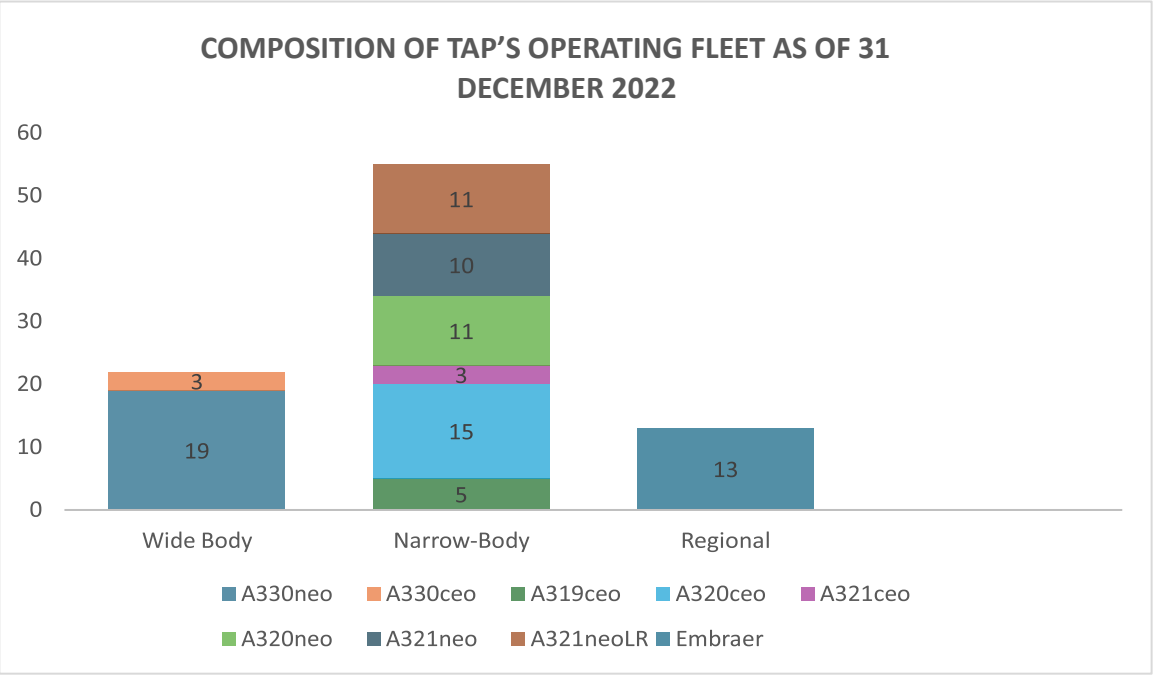

Figure3: TAP operation fleet 2022; Source: Adapted from (TAP, 2022).

In the second quarter of 2022, TAP resumed operations to all international airports in Cape Verde with the relaunch of Boa Vista. The airline also restored long-haul operations by resuming flights to Caracas. Throughout the year, TAP continued to reintroduce destinations, including Agadir in Morocco during the third quarter. By the end of 2022, TAP's operating fleet comprised a total of 93 aircraft. This included the addition of 3 Airbus A321LRs and 3 Embraer

aircraft, as well as the extension of 2 Airbus A320s which were initially set for phaseout. Conversely, the fleet saw a reduction with the phase-out of 1 Airbus A319 and 6 ATRs. As a result, NEO-family aircraft made up 66% of TAP's mid and long-haul fleet by the end of the year, reflecting the company's strategy to use more fuel-efficient aircraft for both cost and sustainability benefits (TAP, 2022).

2022 Punctuality

In 2022, TAP Air Portugal jumped to new heights, not just in the number of passengers carried or the profits earned, but in the realm of punctuality. The airline's dedication to timely service was reflected in its operational statistics, which indicated a robust system capable of handling the dynamic challenges of air travel. While the airline's specific punctuality figures for 2022 are not publicly detailed, the overall positive financial and operational performance suggests a year marked by timely services. The airline reported a net profit of €65.6 million and a passenger increase of 136.1% compared to the previous year, reaching 81% of the pre-crisis levels of 2019. These numbers, while not directly indicative of punctuality, often correlate with an airline's ability to maintain a reliable schedule (TAP, 2022).

2.5.4. 2023 Performance and Strategies

2023 marked a significant recovery in air transportation, approaching pre-pandemic activity levels. TAP Air Portugal exceeded pre-crisis capacity levels, with Available Seat Kilometers (ASK) in 2023 reaching 101% of the 2019 values. The load factor improved by 0.8 percentage points from 2022, reaching 80.8%, and saw an increase of 0.7 percentage points compared to 2019 (TAP,2023).

TAP's revenues in 2023 totalled EUR 4.214.8 billion, the highest in its history. This was driven by increased capacity and higher yields, representing an increase of EUR 729.9 million or 20.9% compared to 2022 (TAP,2023).

Recurrent operating costs rose by EUR 592.8 million or 18.3% compared to 2022, totalling EUR 3,829.0 million. This increase was due to higher capacity, inflationary pressures, and the revision of salary conditions for its employees. Despite the rise in costs, TAP generated a recurrent EBIT of EUR 385.8 million, with a margin of 9.2%, representing an improvement of EUR 137.1 million from 2022 (TAP 2023).

In 2023, TAP concluded the negotiation of Collective Labor Agreements applicable to Technical Crew, Cabin Crew, and most unions representing Ground Staff. These agreements resulted in new labour conditions and the complete restoration of salary cuts for these groups, effective from the second half of 2023. The implementation of new conditions for Technical Crew occurred in 2023, while updates for other professional categories are scheduled for early 2024 (TAP,2023).

In October 2023, TAP launched a new brand positioning under the slogan "Embrace the World" to highlight Portugal's connection to the world and vice versa, evoking a sense of curiosity in every traveller, typical of the Portuguese spirit. Throughout 2023, TAP received multiple accolades as a leading airline. It was named the best airline in the world and Europe for South America and Africa at the World Travel Awards and received the Four-Star Airline Award from the Airline Passenger Experience Association (APEX) (TAP,2023).

2023 Fleet

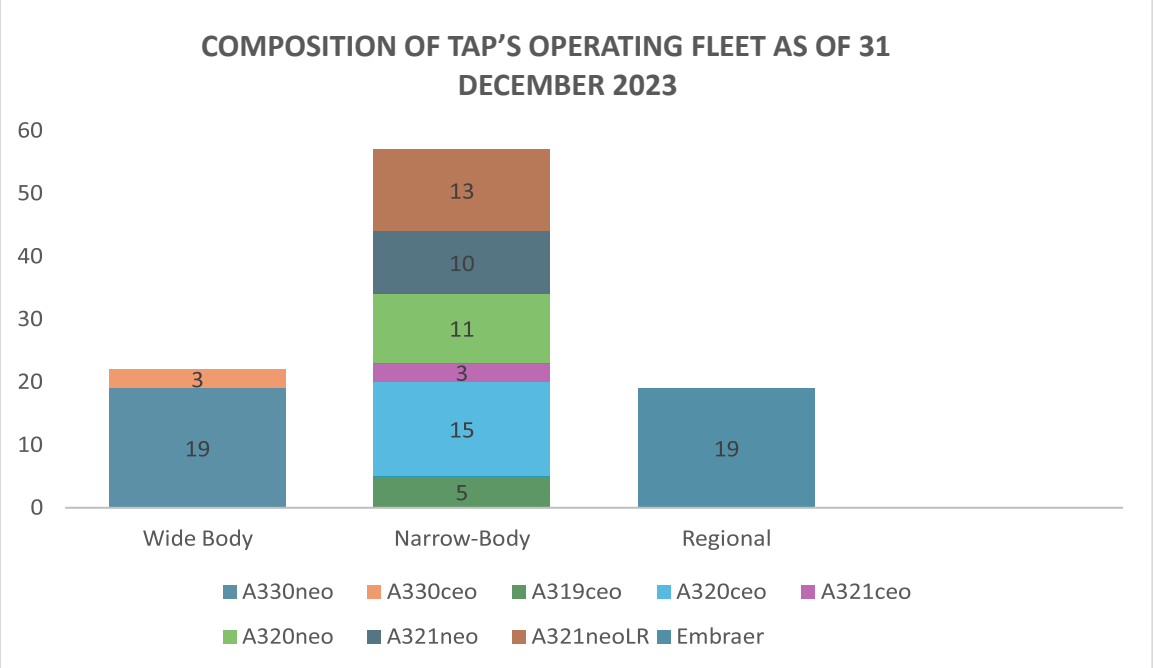

Figure 4: TAP operation fleet 2023; Source: Adapted from (TAP 2023).

TAP remains fully committed to its strategy of developing the Lisbon hub to connect Europe and the Middle East with Africa, Brazil, and North America. The year 2023 was marked by

stabilization and reinforcement of the network, with strategic capacity increases and expansion of transatlantic connections. In North America, TAP increased the number of weekly frequencies to Boston, Chicago, Miami, San Francisco, Washington, and Porto-New York (EWR), and in South America, to Belém, Belo Horizonte, Brasília, Salvador, São Paulo, and Caracas. Regarding capacity for Europe, TAP reinforced this through increased frequencies from Porto, specifically on the Porto-Zurich and Porto-Geneva routes. Additionally, TAP launched new routes in 2023: Porto-Luanda, Lisbon-Menorca, and Lisbon-Palma de Mallorca (TAP 2023).

By the end of 2023, TAP's operating fleet comprised a total of 98 aircraft, up from 93 in 2022. During the year, two new-generation Airbus A321neo LR aircraft, three Embraer aircraft, and two ATR-72 aircraft entered operation. By the end of 2023, 67% of TAP's mid- and long-haul operational fleet consisted of NEO-family aircraft, aligning with the Group's strategy of using more fuel-efficient aircraft, which benefits both cost efficiency and sustainability. On December 20, 2023, the certification process for an A-320 NEO aircraft was completed, with operations planned to start in January 2024 (TAP 2023).

2023 Punctuality

In 2023, TAP Air Portugal’s punctuality performance experienced a slight decrease. In the AirHelp Score 2023 ranking, which evaluates the performance of several airlines worldwide, TAP Air Portugal was placed in 31st place, rising two positions compared to 2022. However, when it came to punctuality, the airline’s score decreased by 0.30 points, going from 6 points in 2022 to 5.70 points in 2023. Despite this, TAP Air Portugal saw improvements in other areas such as service quality and complaints management (The Portugal News, 2023).

Comparing to Airlines that operates in Portugal, TAP Air Portugal was recognized as the worst airline in terms of punctuality in 2023. Despite this performance issue, TAP remains the airline most favoured by Portuguese passengers, operating the highest number of flights and transporting the most passengers in the country. TAP carried 10 million passengers and operated 70,000 flights throughout the year, yet only 59% of these flights were on time. In comparison, easyJet ranked second, transporting five million passengers and operating 32,000 flights, with only 56% of these flights departing on schedule. This indicates a broader issue with punctuality affecting several airlines operating in Portugal (TPN,2024).

3. METHODOLOGY

This chapter aims to clearly outline the purpose and objectives of the Methodology, articulate the research trajectory, and detail the methodological choices employed to achieve a thorough understanding of the management of delays and irregularities within TAP Air Portugal. By systematically examining the airline's practices, this study seeks to provide valuable insights into operational resilience and strategic responses within the airline industry.

3.1. Purpose of the Study

The core objective of this research is to dissect and analyse whether the strategic changes implemented by TAP Air Portugal in 2018 remain effective in managing delays and operational irregularities. This focus seeks to determine if those measures have sustained their impact over time and to investigate whether TAP has introduced any new modifications or strategies in recent years. This analysis is driven by the critical need for airlines to maintain on-time performance while having robust contingency plans to address disruptions, essential for competitive advantage and passenger trust. The research aims not only to document current practices but also to evaluate their continued efficacy and uncover potential areas for further improvement or innovation.

3.2. Research Question, Derivative Questions and Study Objectives

The central research question guiding this study is: To what extent does TAP's current model for managing delays and irregularities continue the measures implemented in 2018 that led to positive results in 2019*?*

This question seeks to evaluate the longevity and effectiveness of the strategic changes that TAP Air Portugal introduced, assessing whether those measures have continued to produce positive outcomes or if they have been adapted over time to address evolving challenges.

To provide comprehensive insights and support the main research question, the study also examines several derivative questions:

a) What changes were implemented after 2019?

This question aims to identify and analyse any additional modifications or new strategies TAP introduced post-2019 to enhance their management of delays and irregularities.

b) Are these changes related to variations in delays in 2022/23?

By exploring this question, the study seeks to understand the connection between the post2019 measures and recent variations in flight delays.

This analysis will help determine whether the newer strategies have had a tangible impact on operational performance.

c) What improvements can be made to the delays and irregularities management model, focusing on the company's responsibility factors?

This question focuses on identifying areas where TAP's current management model can be optimized, emphasizing responsibility factors that the company can control and improve to enhance delay management.

Together, these questions guide the research to assess the continuity, adaptation, and potential enhancement of TAP's strategies, ultimately contributing to a deeper understanding of best practices in operational management within the airline industry.

3.3. Objectives

1)Investigate the factors that are under TAP's responsibility that could potentially cause delays in TAP's operations at Lisbon airport.

2) Situate the issue of TAP delays at LIS in the management of delays and operational irregularities in general.
3) Understanding the recovery of TAP AIR Portugal's punctuality in 2019, after the measures taken in 2018.
4) Analyse the effect that changes made to TAP and LIS after 2019 had on delays in 2022/23.
5) Identify, based on the results, which potential causes of delays are the responsibility of TAP Air Portugal.

3.4. Qualitative Research

To address the research objectives and questions, we adopted the qualitative approach which is a method of inquiry that seeks to understand human experiences, behaviours, and interactions by exploring them in-depth. Unlike quantitative research, which focuses on numerical data, qualitative research delves into meanings, perceptions, and subjective experiences (Hassan, 2024). According to Bhandari (2024) although qualitative research

encompasses various approaches, it emphasizes flexibility and preserve the depth of meaning in data analysis. Common approaches to qualitative research include grounded theory, ethnography, action research, phenomenology, and narrative research. While they share certain similarities, each emphasizes distinct goals and perspectives

A semi-structured interview which is used in this study, is a data collection method that involves asking questions based on a predefined thematic framework, but without a fixed order or phrasing. Typically qualitative, semi-structured interview is widely used as an exploratory tool in social sciences research, including business research. It is especially valuable when involving multiple interviewers, as they provide a shared theoretical framework while allowing flexibility to explore different aspects of the research question (George, 2023).

3.5. Participants

According to Coutinho (2008), the selection of participants plays a crucial role in ensuring the rigor of the research process, enhancing both its reliability and validity while maintaining methodological coherence. Therefore, the study aimed to involve approximately 8 participants, including current and former managers from TAP, ANA, and Groundforce, as well as pilots, turnaround managers, and employees of the Operational Control Center (OCC). This diverse group was chosen to provide a comprehensive understanding of the strategies and practices in managing delays and irregularities at TAP Air Portugal.

Despite significant efforts to reach out, several intended participants were ultimately unavailable for interviews. Attempts to secure interviews with ,TAP, ANA, and Groundforce managers were unsuccessful, even after multiple contact attempts.

In the end, the study included four participants: two pilots, one TRC employee, and an employee from Menzies, the former Groundforce. Despite the participant pool being reduced to 50% of the initial target, we believe the data gathered from these interviews was sufficient to provide valuable insights and adequately address the main research question. The perspectives provided by these participants allowed for a meaningful analysis of TAP's management practices, capturing both operational and strategic viewpoints. Table 3 summaries the participants' main characteristics.

Table2. General profile of the participants; Source: Self Elaboration

PARTICIPANT	ACADEMIC DEGREE	JOB/ROLE	PROFESSIONAL EXPERIENCE
E1	Bachelor´s + Masters +ETPL	TAP AIR Portugal First Officer A330	+ 12 years
E2	Bachelor´s	TAP AIR Portugal Senior Captain A330neo, + Type Rating Instructor A330	+23 Years
E3	Bachelor´s	Menzies Ground Operations Officer	+ 6 Years
E4	Bachelor´s + Masters	Turnaround Coordinator	+ 8 Years

3.6. Data Collection

3.6.1. The Technique: Semi Structured Interview

Considering the nature of the study's objectives, we opted to use the semi-structured interview technique for data collection. A semi-structured interview is a qualitative research method that combines predefined questions with the flexibility to delve into topics that arise naturally during the discussion. This technique offers a balance between the uniformity of structured interviews and the depth of unstructured ones, enabling researchers to explore participants' responses more thoroughly. The adaptability of semi-structured interviews fosters detailed and meaningful insights, making it ideal for examining complex behaviours and experiences while ensuring that all essential subjects are addressed (George, 2023).

3.6.2. Instruments: Interview Scripts

As enhanced by King (2004) and George (2023), semi-structured interviews incorporate *priori* themes related to the research questions (tables 4, 5 and 6). Since this is a semi-directive interview, it has been necessary to build an interview schedule that contains the topics to be covered, as well as examples of questions to be asked to the interviewees. The topics were defined based on the theoretical framework of the work and the research questions.

Table 3 - Pilots interview script. Source: Self Elaboration

Main topics	Objectives	Questions
1. Operational changes and effects	To verify if after 2018, there were changes in operations and, if so, to what extent they influenced the flights punctuality.	- since 2019, have you observed any changes in operations at TAP? - if so, have these changes impacted flight punctuality and delay managements? Why?
2. Challenges and solutions	To identify the most common reasons for delays and how TAP address this issue.	- in your opinion, what are the most common reasons for delays that you encounter in your daily operations? - how do you think TAP can address these issues more effectively?
3. Coordination and communication	To gather information on the communication and coordination between OCC and pilots, and how it can be improved.	- how would you describe the communication and coordination between pilots and the Operational Control Center during irregular operations? Why? - what improvements can be made to maximize the coordination?
4. Future improvements	To understand the interviewers' perspective on desirable delays management model of TAP.	- based on your experience, what suggestions do you have for improving TAP´s delays management model? Why? - how can TAP better support Pilots in minimizing delays?

Table 4 - Menzies employer interview script. Source: Self Elaboration.

Main topic	Objetives	Possible Question
1. Initial Measures and Success;	1.1. To check whether the ground handling company receive a different role after the 2018 change.	- can you describe Menzies role in the measures implemented by TAP in 2018 that led to improve punctuality?
2. Operational Changes;	2.1. To verify if there have been any changes in Menzies Operation, after 2019.	- what changes have been made in Menzies Operations after 2019 to manage delays and Irregularities?
Main topic	**Objetives**	**Possible Question**
	2.2. To find out to what extent the eventual changes influenced the punctuality of flights.	

3. Impact on Performance;	3.1. In case of changes 2019, to check how they affected TAP operations in 2022 and 2023. 3.2. To understand if the changes implemented in 2019 brought any challenges to Menzies Operations contributing to delay.	- how have these changes affected Menzies Operations and its collaboration with TAP in 2022 and 2023? - are there specific operational challenges that have contributes to delays during this period?
4. Recomendations for Improvements	To understand the interviewers' perspective on desirable delays operational improvements at Menzies.	- what improvements can be made in Menzies processes to better manage delays and support Tap's operations? -how can Menzies and TAP enhance their cooperation to improve overall efficiency?

Table 5 - TRC interview script. Source: Self Elaboration.

Topic	Objetives	Possible Question
1. Operational Changes;	1.1. To find out whether occurred any changes in TRC's operations after 2019. 1.2. and to what extent they influenced the punctuality of flights.	-what main changes in turnaround operations at TAP have occurred since 2019? - in your opinion, how have these changes influenced the management of delays and irregularities? Why?
2. Challenges in Turnaround Processes;	2.1. To verify whether there are challenges during turnaround processes. 2.2. and to what extent they influence the punctuality of flights.	-what are the most common challenges you face during the turnaround process resulting in delays? Why? - How do you address these challenges currently?
3. Coordinations and efficiency;	3.1. To Understand how the communication and coordination between TRC's and other departments is. 3.2. and how can they improve it.	- how do you coordinate with other departments (e.g. crews, ground handling, OCC) to manage turnaround timing? - what improvements can be made to streamline this coordination and reduce delays? Why?
3. Recomendations for Improvements;	To Comprehend the Interviewer's perspective for TAP turnaround process improvement, to achieve a more efficient Operation.	- what suggestions do you have for improving TAP's turnaround process to better manage delays and irregularities? - how can TAP support turnaround managers in achieving more efficient operations?

3.6.3. Procedures

As George (2023) points out, for real-time interviews, we must choose if whether in-person, by phone, or via videoconferencing is the most suitable option. Considering these precautions and guidelines, we reached out to all participants beforehand via email and WhatsApp to determine their preferred way of conducting meeting, whether in-person or remote. Because the contact took place during the Pick season (August and September), among the four participants who accepted the invitation, all of them requested that the interview be conducted remotely using videoconferencing platforms such as Zoom. During the interview we should carefully manage the number of questions, ensure that the interview takes place in an appropriate environment and record in audio the conversation (Quivy, 2005). Following that logic, all the interviews were conducted online, in quiet and comfortable areas choose by each interviewee. Similarly, we ensured that we were in a calm and distraction-free environment during the sessions.

In the beginning of each interview, we reiterated the research objectives and assured participants of the confidentiality and anonymity of their responses. We also sought their permission to audio record the conversations. None of the participants expressed any objections or concerns regarding the recordings.

The interviews took place continuously, without interruptions or surprises. A total of 130 minutes of audio recordings were obtained.

3.7. Data Analysis

3.7.1 Content Analysis

Content analysis (CA) is a research technique used to identify and examine the occurrence of specific words, themes, or concepts within qualitative data to fulfil research objectives. It enables researchers to measure and evaluate the frequency, significance, and/or interconnections of these elements within the data (Columbia University ,2024).

3.7.2. Procedures

To perform the content analysis, we followed the guidelines of George (2023) in each phase of the process:

Transcription. The audio recordings were transcribed individually using MS Word Online. The process began by uploading each audio file, which generated an initial transcription. Following this step, each document was carefully reviewed for accuracy and completeness to ensure alignment with the original recordings. Once the revisions were finalized, the transcripts were saved for subsequent analysis. The transcribed interview corresponds to the CA raw data – the *analysis corpus.*

Initial reading. The next step was to carry a first light reading of the written material to capture the main forces of the interview's perspectives on each topic. Then, we started to extract the text segments or codes for further categorization.

Definition of the analyse units. According to Dovetail (2023) a unit of analysis refers to the specific object or entity being examined in a research project. It represents the smallest element that a researcher focuses on to observe and explain a phenomenon.

Units of record are the elements used to represent and categorize information, which can include the word, the theme, the object or referent, the character, the event, or the document. An enumeration unit is a unit of analysis that is categorized based on established criteria, which may include presence (or absence), frequency, weighted frequency, intensity, direction, order, and co-occurrence (contingency analysis) (Machado 2020).

We define the unit of record (UR) as the smallest meaningful segment of text and the unit of enumeration (UE) as the subject that mentioned the idea or theme under categorization. The unit of content is the interview in its entirety.

Categorization. To ensure the achievement of the research objectives and the responses to the questions posed, and based on the literature review, we defined a set of categories a priori as described in Table 7.

Table 6 - Previous Categories. Source: Self Elaboration.

Categories	Description
A) 2018 positive measures	In response to increasing competition, ATC restrictions, industrial actions, and the significant challenges posed by the lack of capacity at Lisbon Airport (LIS), TAP implemented a comprehensive set of measures aimed at improving its punctuality. Among these, the introduction of the IOCC, the implementation of Turnaround Coordinators (TRCs), and the massification of recruitment stand out as transformative steps.
B) New changes implemented since 2019	In 2018, measures were implemented to combat TAPs punctuality problems with a positive impact on 2019 performance. However, with the Covid-19 pandemic, which seriously affected the aviation industry, new changes were introduced to operational processes.
C) Impact on delays (2022/23)	The Introduction of Turnaround Coordinators (TRCs) at TAP Air Portugal in 2018 significantly improved delay management by streamlining on-ground operations and reducing the workload on both flight and cabin crews. Meanwhile the LIS airport persisted on remaining the unsolved external issue, and the current European Air Traffic condition isn't helping as well.
D) Desirable/necessary measures for the continued improvement of punctuality.	At the conclusion of each interview, all interviewers collectively share their recommendations and desirable measures aimed at fostering the continued improvement of TAPs punctuality.

According to Ortega (2024), mixed research is a methodology that combines quantitative and qualitative approaches to gain a deeper understanding of a research problem that cannot be fully addressed by either method alone. A mixed procedure was adopted for the categorization process, meaning that, in addition to the 'box' procedure associated with the previous categories, the emergence of other (sub)categories was allowed based on the nature of the material, relevant to understanding the phenomenon under analysis.

In this phase was especially relevant the use of a software of Qualitative Data Analysis, the

MAXQDA. Sharing the idea of Quivy (2005), the advent of computers has significantly revolutionized data analysis, enabling the presentation of the same data in various forms, which greatly enhances the quality of interpretations. Following this principle, we utilized MAXQDA software to systematically categorize the data under analysis, ensuring a structured and comprehensive approach to the research process. Annex 7 Illustrated the use of MAXQDA.

4. RESULTS AND DISCUSSION

In this section, we present the content analysis results, offering a detailed discussion grounded in our theoretical framework. To facilitate interpretation and enhance readability, the results are systematically organized according to the research questions that guided this study. The content analysis performed involved the categorization of 113 text segments, grouped into 4 main and previous categories and 15 subcategories that emerged during the analysis. The interpretation of each (sub)category is described in the Dictionary of Categories.

Measures implemented in 2018, with positive results in 2019, that integrate the TAP current model of managing delays and irregularities (research question #1).

We intended to understand the recovery of TAP AIR Portugal's punctuality in 2019, after the measures taken in 2018, focusing on those that had the greatest impact on air punctuality (study objective 3).

In the study of Figueiredo (2022), the introduction of the Turnaround Coordinator (TRC) (Table 8) emerged as one of the main measures implemented by TAP to face challenges related to flight punctuality. We asked participants about the measures implemented by TAP Airline in 2018 that they considered to have positive results. The most intensive mentioned by all (UE=4) participants was the TRC introduction (subcat. A3 - UR=14, 46,6%). Table 8 identifies the measures evoked by interviewees with positive effects.

- "TRC's are a big improvement and a big help" [E1] [annex 3; line-219]
- "Yes, there is one big change. It's basically in the center of all of what we've been talking about, which was the introduction of TRC." [E2] [Annex 4; line-107]
- "TRC é aquele elemento que funciona como uma ponte de ligação entre nós e a empresa TAP." [E3] [Annex 5; line-207]
- "Os TRC's, nós conseguimos perceber que realmente fazemos um bocadinho a diferença" [E4] [Annex 6; line-54]

Table 7 - Category A) 2018 positive measures (*) Source: Self Elaboration.

Subcategories	UE	UR	
		Fa	%
A1 Integrated Operations Control Center (IOCC)	2	6	20,0%
A2 Staff Recruitment and Resource Allocation	3	10	33,3%
A3 Turnaround Coordinator (TRC) Introduction	4	14	46,6%
(*) previous category	T:	30	100,0%

Still in this category, participants also highlighted Staff Recruitment and Resource Allocation (subcat. A2 - UR=14, 33,3%), which also emerged in Figueiredo (2022) study, as one of the measures implemented by TAP to increase flight punctuality. Three of the participants agreed that increasing the number of employees within the company and strategic allocation of resources were key to solve operational delays and to improve efficiency. By reducing workload imbalances and optimizing task distribution, these measures enabled smoother workflows and minimized delays:

- "The massification of the recruitment of new people, pilots and flight attendants of course, because in 2018 and 19 we had big flaws regarding crew" [E1] [Annex 3; line- 56]
- "Back to your question, 2019, I think it was when things were starting to calm down, so you already had more pilots in the line, the planes were there" [E2] [Annex 4; line-94]
- "hoje em dia temos equipas novas na nossa área de handling" [E3] [Annex 5; line-74]

Emerged as subcategory the Integrated Operations Control Center (IOCC), mentioned by two interviewers but with some intensity (subcateg.A1 - UR=6, 20%), Kohl (2007) points out, Operational Control Centre (CCO) as the entity that manages the operation of an airline from the beginning, and have as its primary objective to solve possible problems, with the lowest possible impact and cost, in a process called Operational Irregularities Management.

- "With the creation of the IOCC, they were standing on the same room where you have one member of each sector working together" [E1] [Annex 3; line-53]
- "The IOCC was an extremely advantage tool, I believe" [E2] [Annex 4; line- 79]
-

Changes implemented in TAP operations after 2019 (research question #2).

In this topic, the main goal was to analyse the relationship model between factors under TAP's responsibility that could potentially cause delays and the company's delays at Lisbon Airport (study ob.1), especially since the aviation industry was evilly affected by the world pandemic. In our findings (Table9) two of the participants agreed that in the past years there has been a Structural Adjustments in TRC Roles (Subcat.B1 - UR=9, 47,36%), and TRC Operational Modifications (Subcategory.B2 - UR=4, 21,05%). To illustrate, respectively:

- "Atualmente praticamente um TRC já não é só TRC" [E3] [Annex 5; line-204]
- "o número de quantitativos que temos agora como TRC é desafiante, e muitas vezes é muito complicado" [E4] [Annex 6; line-102]
- "Já não é assim que nós funcionamos, o aeroporto é dividido por plataformas, onde cada plataforma tem vários stands" [E4] [Annex 6; line-86]

According to E4, TRCs job function has not changed, but the organization has. Employees are now responsible for managing a specific platform with multiple aircraft, rather than being assigned to specific flights. This allows for a more thorough view and coordination of multiple flights simultaneously, though it presents challenges in managing aircraft departing at the same time. The company has also reduced the number of employees, which is aligned with the idea supported by Folke and Melin, (2024), leading to a greater workload and a need for efficient management, with deep effect on employees' working conditions, and individual well-being.

Air Aviation Support (2024) enhances that ground handling is vital to contemporary air operations, greatly affecting the safety, efficiency, and timeliness of airlines. Therefore, Changes to handling procedures (subcat. B3 - UR=6, 31.57%) emerged as significant, further reducing constraints in operational workflows. E3 mentioned that Groundforce [currently Menzies] implemented numerous improvements in its equipment, human resources, and information systems, which improved operational processes, reducing time for baggage loading/unloading and aircraft refueling/cleaning, enabling more efficient and punctual flight departures. However, in 2022/2023 Ground Force faced recruitment difficulties due to the aviation industry's post-pandemic restructuring, leading to labor shortages. This impacted on

the Ground Force's ability to respond, contributing to delays in TAP's operations, exacerbated by strikes and conflicts:

- "a Groundforce implementou mesmo muitas melhorias, mesmo nos seus equipamentos, os recursos humanos, até mesmo no que tem a ver com o sistema informático" [E3] [Annex 5; line-84]
- "e isso impactou um pouquinho a capacidade de resposta e contribuiu também para os atrasos das operações na TAP, sem esquecer as greves os conflitos etc." [E3] [Annex 5; line- 123]

Table 8 - category b) New changes implemented since 2019 (*) Source: Self Elaboration.

subcategories	UE	UR	
		Fa	%
B1 Structural Adjustments in TRC Roles	2	9	47,36%
B2 TRC Operational Modifications	1	4	21,05%
B3 Changes to Handling Procedures	1	6	31,57%
(*) previous category	T:	19	100,00%

These changes related to variations in delays in 2022/23 (RQ # 3)

The objectives of this topic are to analyse the effect that changes implemented in TAP and Lisbon Airport (LIS) after 2019 had on delays in 2022/23 (study ob.4) and situate the issue of TAP delays at LIS in the management of delays and operational irregularities of airlines in general (Study ob.2).

The results (table 10) highlight that two participants share the idea supported by Shannon (2022) by agreeing that TAP's Operations delays is directly related to inadequate infrastructure of Lis airport (subcategory.C3 - UR=11, 28,94%):

- "The solutions, there are only increasing airport capacity, of course." [E1] [Annex 3; L-158]
- "When you arrive and your stand is occupied, the airport basically they try not to get you a free one, because they have that one for another aircraft." [E2] [Annex 4; line-84]

Regarding the changes that impact the delays in 2022/23, all participants agreed that the physical presence of Turnaround Coordinators has significantly reduced workload (subc. C2 - UR=9, 23,68%) and improved the operational coordination (subcat. C1 - UR=8, 21,05%) for both ground handling and cabin crew, by providing real time communication and immediate decision-making on the ground handling activities to guarantee safe, efficient, and timely aircraft turnaround (Hromádka, 2013):

- "Physical personnel being at the gate helping for boarding, to have a more coordinated response to eventful delays and issues." [E1] [Annex 3; line-82]
- "em uma parte [TRC] também vieram nos facilitar um pouquinho o trabalho." [E3] [Annex 5; line-255]

TABLE 9 - Category C) Impact on delays (2022/23) (*) Source: Self Elaboration.

subcategories	UE	UR	
		Fa	%
C1 Improved Coordination	4	8	21,05%
C2 Reduced Workload	3	9	23,68%
C3 Challenges Related to Airport Operations	2	11	28,94%
C4 Impact of Lisbon Airport on TAP Operations	2	5	13,15%
C5 Air Space Congestion Persistence external challenge	1	5	13,15%
(*) previous category	T:	38	100,00%

The two least commented category was Impact of Lisbon operation on TAP operations (E=2) (Subcategory.C4 - UR=5, 13,15%), which according to E2 (Annex 4), Lisbon Airport is still a very challenging place to be TAP Air Portugal HUB, and that is crucial to coordinate with airport authorities' partners and airline to discuss processes and needs:

- "Lisbon Airport is still a challenging place to be our home base." [E2] [Annex 4; line-81]

Another emergent category, the Air Space Congestion Persistence external challenge (E=1) (Subcategory.C5 - UR=5, 13,15%), which by E4 (Annex 6) point of view, it's not just Lisbon air space, but the entire European airspace that is congested:

- "devido a um espaço aéreo que está muito saturado, a torre muitas vezes só autoriza o avião a sair muito depois desse target" [E4] [Annex 6; line-45]

Improvements that can be made to the delays and irregularities management model by focusing on the company's responsibility factors (RQ #4)

The main objective of this topic is to identify elements to a more updated model that relates the potential causes of delays, for which the Company has control of (Study ob.5).

Three of participants (Table 11) highlighted that internal Communication Enhancement (Subc. D1- UR=10, 38,46%) is one of the most crucial updates TAP Airline should implement to improve operational efficiency and customer satisfaction:

- "Eu sinto que se houvesse ali uma melhor comunicação, trabalhássemos mais em equipa, isso iria ajudar." [E4] [Annex 6; line-281]
- "Flight operations have to be in the channels of communication, as they have to be wiser and so more open, easier whatever by the needs." [E2] [Annex 4; line-115]

The second most mentioned category by all participants (E=4) in this topic is Personal Training and Development Within the Organization (Subcategory D4 – UR= 7, 26,92%).

- "Eu acho que se calhar a nível de formação," [E4] [Annex 6; line-332]
- "Formação continua é muito importante nos termos na formação contínua dos funcionários," [E3] [Annex 5; line-161]

Overall, and as Chong (2007) highlighted, in the rapidly globalizing and high-risk aviation industry, internal communication and training represent the critical frontiers where the battle for consumer loyalty is either won or lost (Chong 2007).

Table 10 - D) Desirable/necessary measures for the continued improvement of punctuality. Source: Self Elaboration.

subcategories	UE	UR	
		Fa	%
D1 Communication Enhancements	3	10	38,46%
D2 Technological Innovations	2	3	11,53%
D3 Resource Optimization	4	6	23,07%
D4 Personal Training and Development Within the Organization	2	7	26,92%
(*) previous category	T:	26	100,00%

Resource Optimization (subc. D3 – UR= 6; 23,07%) did not stand out as much (UR=6, 23%) as a Desirable/necessary measure for the continued improvement of punctuality (Cat. D) but was mentioned by all the participants (E=4). These participants' perspectives seem to be aligned with the idea that is very important for any airline the strategic allocation and management of available resources to maximize operational efficiency, minimize waste, and achieve flight operation goals (PPM Express 2024):

- "I think increasing the airport's capacity would solve a lot of those issues." [E1] [Annex 3; line-159]
- "You cannot control 70 flights, but if you were attached to 10 flights, OK" [E2] [Annex 4; line-250]
- "Menzies não ter todos os recursos que nós gostaríamos, acabam por nos atrasar" [E4] [Annex 6; line-317]
- "aumentar um pouquinho a capacidade de contratar pessoas temporárias para a altura do pico de aviação" [E3] [Annex 5; line-153]

Table11 - Dictionary of categories Source: Self Elaboration.

Theme	Category	Description	RU Example
A) 2018 MEASURES CONSIDERED POSITIVE			
a1) Integrated Operations Control Center (IOCC)		Introduction of the IOCC improved coordination and issue resolution that was highly impactful during 2018-2019.	- "I think the measure, the IOCC integrated operations was in fact one of the biggest changes in operations that TAP had on those two years" [E1, Line 48]
a2) Staff Recruitment and Resource Allocation		Massive recruitment of new pilots and crew members alleviated operational processes during peak season.	- "So, a lot of new pilots, new cabin crew, new planes, a lot of planes arriving, a lot of instruction" [E2, L 34]
a3) Turnaround Coordinator (TRC) Introduction		TRC introduction helped other members of the operations with workload reduction which improved punctuality.	- "and now we have the presence of the TRC´s, which makes a bridge in case we are with some workload on us" [E1, L 177]
B) NEW CHANGES IMPLEMENTED SINCE 2019			
b1) structural Adjustments in TRC Roles.		With the reduction in the number of TRC, they begun to receive multiple assignments.	- "Quer dizer hoje podes ser TRC, amanhã HCC. Assim como eu disse múltipla tarefa" [E3, L 211]
b2) TRC Operational Modifications.		TRCs were reassigned to platforms rather than specific flights, increasing workload but allowing broader management of rotations.	- "Já não é assim que nós funcionamos, o aeroporto é dividido por plataformas, onde cada plataforma tem vários stands. Portanto, em cada plataforma estão parqueados vários aviões, e nós estamos responsáveis por uma plataforma "[E4, L 86]
b3) Changes to handling procedures.		Investments in new equipment, human resources and IT systems by ground handlers improved operations procedures.	- "se calhar se nota um pouquinho até hoje, é um pouquinho da melhoria da flexibilidade operacional." [E3, L70]

C) IMPACT ON DELAYS (2022/23)

Theme	Category	Description	RU Example
c1) Improved Coordination		The presence of TRCs in TAP operations has significantly improved coordination by acting as a central link between teams, ensuring smoother communication.	- "If I need to know something about loading or zero fuel weight or whatever, I ask them [TRCs]" [E2, L 136]
c2) Reduced Workload		TRC Reduced workload on flight crews and cabin staff, enabling faster problems resolution of operational processes.	- "So, I think also that presence helps us a lot, minimizing delays and also minimizing workload." [E1, L 96]
c3) Challenges Related to Airport Operations		Challenges related to airport operations in TAP's context include limited capacity, stand occupancy issues, and pushback restrictions, all of which disrupt schedules and complicate efficient turnaround processes.	- "The solutions, there are only increasing airport capacity, of course." [E1, L 158]
c4) Impact of Lisbon Airport on TAP Operations		Lisbon Airport's congestion and operational constraints have a significant impact on TAP operations, contributing to delays, limiting flexibility, and posing challenges as the airline's primary hub.	- "Lisbon Airport is still a challenging place to be our home base" [E2, L 81]
c5) Air Space Congestion Persistence external challenge		Air space congestion is another external challenge that TAP has no control over and is causing major delays.	- "outro grande desafio, que contribui muito para os atrasos, é efetivamente o congestionamento de espaço aéreo que não deixa sair o avião." [E4, L 177]
D) DESIRABLE/NECESSARY MEASURES FOR THE CONTINUED IMPROVEMENT OF PUNCTUALITY.			
d1) Communication enhancements		TAP needs to prioritize enhancing internal communication to ensure seamless coordination and alignment across all levels of the company.	- "Flight operations have to be in the channels of communication, as they have to be wiser and so more open, easier whatever by the needs." [E2, L 155]
d2) Technological Innovations:		Suggested real-time informatized systems to provide data like passenger connection statuses and operational updates, may reduce Pilots workload.	- "some kind of implementation of an informatized system that would give us more information you know." [E1, L 234]

Theme	Category	Description	RU Example
d3) Resource Optimization		Effective resource optimization among TAP, Menzies, and Lisbon Airport is critical to ensuring seamless operations, enhancing customer satisfaction, and achieving operational efficiency.	- "I think increasing the airport's capacity would solve a lot of those issues." [E1, L 159] - "aumentar um pouquinho a capacidade de contratar pessoas temporárias para a altura do pico de aviação" [E3, L 153]
d4) Personal Training and Development Within the Organization		Internal continuous training is required and joint training between TAP and handlers like Menzies may align operations and reduce conflicts.	- "mas eu diria que passa um bocadinho mais por formação, não formação da nossa função, mas formação de outras áreas" [E4, L 341] - "essas empresas podem também fazer é cooperar na formação conjunta de desenvolvimento de equipa." [E3, L 189]

5.CONCLUSIONS

This dissertation aimed to find out whether the measures implemented by TAP Air Portugal at the end of 2018 had positive or negative results in TAP's operations in the years 2019, 2021, 2022 and 2023. We sought to answer the main question which was: To what extent does TAP's current model for managing delays and irregularities continue the measures implemented in 2018 that led to positive results in 2019, together with the derived questions that were: What changes were implemented after 2019? Are these changes related to variations in delays in 2022/23? What improvements can be made to the delays and irregularities management model, focusing on the company's responsibility factors?

We had the following objectives:

1)Investigate the factors that are under TAP's responsibility that could potentially cause delays in TAP's operations at Lisbon airport.

2) Situate the issue of TAP delays at LIS in the management of delays and operational irregularities in general.
3) Understanding the recovery of TAP AIR Portugal's punctuality in 2019, after the measures taken in 2018.
4) Analyze the effect that changes made to TAP and LIS after 2019 had on delays in 2022/23.
5) Identify, based on the results, which potential causes of delays are the responsibility of TAP Air Portugal.

The results are as follows:

Considering whether the measures TAP Air Portugal implemented in 2018 that improved punctuality in 2019 have continued to be effective in the years 2022/2023, the results suggest that:

- The establishment of the Turnaround coordinators program has played and continues to play a crucial role in helping reduce workload and responsibilities for both Menzies agents and TAP cabin crew agents, providing insights into potential delays and ways to save time, which is crucial for operational efficiency.
- The creation of the Integrated Operational Control Centre (IOCC) has improved communication and collaboration between different departments, contributing to better operational performance.

- Massive Recruitment helped the company with the shortage of crew challenges that they had in 2018-19. By hiring more people TAP addressed the issue and gained more flexibility to solve the problems.

Regarding the changes implemented after 2019, the results highlighted those significant operational changes post-2019 included a reduction in the number of Turnaround Coordinators (TRCs) and increased responsibilities for ground handlers. These adjustments required TRCs to manage multiple aircraft simultaneously, placing additional pressure on coordination teams and reducing their ability to manage flights efficiently. This structural shift strained resources and impacted punctuality, demonstrating that while some pre-2019 strategies were still in use, their effectiveness had been diminished by new operational demands and resource constraints.

Related to the Relationship to Delays in 2022/23, the results show that Lisbon Airport is still the main reason for TAP's operational delays and inefficiencies, highlighting the need for further infrastructure improvements and coordination efforts to enhance performance. On the other hand, all the study participants agreed that the physical presence of turnaround coordinators has improved coordination and reduced workload for both cabin crew and Menzies ground handling agents, significantly enhancing overall operational efficiency.

And finally, with respect to potential improvements, the results obtained indicate that enhancing communication and additional hiring of new personals are the most important steps for TAP airline to minimize operational delays in the present.

With these results we conclude that the following contributions can be added to the aviation sector:

- Improving Operational Efficiency: Validation of the positive impact of the Turnaround Coordinators program and the Integrated Operational Control Center (IOCC) demonstrates that these measures are effective models for optimizing coordination and reducing delays. Other airlines may adopt these practices to improve their own operations.
- Identification of Structural Challenges: The reduction in the number of turnaround coordinators after 2019 and the redistribution of responsibilities highlight the risks of structural changes without adequate support. This result can serve as a lesson for companies in similar situations that might be think about downsizing.

- Airport Infrastructure: The emphasis on the impact of Lisbon Airport on operational delays reinforces the need for investment in infrastructure and better integration between airports and airlines.
- Future Solutions: Recommendations such as increased recruitment and improved communication offer a clear roadmap for TAP and other companies facing similar challenges.

We also believe that these results brings some contribute to Academia, which is listed as following:

- Practical Case Study: this work provides a detailed case study on how specific strategies can influence an airline's operational performance, contributing to the literature on operational management in the aviation sector.
- Longitudinal Analysis: the comparative study between pre-2019 and post-2019 strategies demonstrate the impacts of structural changes over time, highlighting the importance of continuous analyses rather than one-off assessments.
- Focus on Coordination: the analysis of the effectiveness of the physical presence of turnaround coordinators contributes to the literature on human resources management and processes in air transport.

And finally, regarding the Contributions of these results to Existing Knowledge we conclude that:

- Integration of Operational Processes: the importance of IOCC and turnaround coordinators as delay mitigation tools adds evidence to the effectiveness of integrated communication and coordination.
- Human Resources Challenges: The correlation between massive recruitment and operational improvement illustrates the need for robust people management strategies, an element that does not receive enough attention in the air transport literature.
- Adaptation and Sustainability: the impact of post-2019 changes illustrate how effective policies can lose efficiency when there is no alignment with updated demands and resources, expanding the understanding of operational sustainability.

LIMITATIONS OF THE STUDY

With the aviation industry starting to be booming again, corporations aren't friendly in disclosing internal information, maybe because they underwent great internal changes that they are still waiting to see the results, which restricted access to a broader network of professionals across different aviation companies in Portugal. This limitation may have influenced the scope of insights by narrowing the range of perspectives obtained during the research process.

The other limitation was the small group of participants. Their views may not fully represent the broader operational challenges or successes at TAP Airline during the years 2022/2023. Additionally, the interviews did not cover all relevant operational measures or external factors, leaving out important aspects of the topic. However, participants came from diverse backgrounds, providing a broad view of the phenomenon under analysis.

Also, the reliance on TAP-specific data and insights from their employees may have constraint our findings.

A significant limitation of the study was without a doubt, the inability to secure the testimony of an ANA Vinci employee regarding the subject under analysis.

SUGGESTIONS FOR FUTURE STUDIES

As a suggestion for future research, given the significant impact of external factors such as airport congestion and air traffic control delays, and since we couldn't secure any information form ANA Vinci professionals, future studies could explore collaborative solutions involving airlines, airport authorities, and policymakers. This could include examining the potential of advanced air traffic management systems, airport capacity enhancements, or legislative reforms.

REFERENCES

Airbus. 2024. “Navigating Communication Challenges in Airports | Airbus.” 2024. https://criticalcommunications.airbus.com/en/newsroom/web-story/4-most-commonchallenges-in-airport-communications.

Anbil, Ranga, Eric Gelman, Bruce Patty, and Rajan Tanga. 1991. “Recent Advances in CrewPairing Optimization at American Airlines.” *Interfaces* 21 (1): 62–74. https://doi.org/10.1287/INTE.21.1.62.

Chong, Mark. 2007. “The Role of Internal Communication and Training in Infusing Corporate Values and Delivering Brand Promise.” *Corporate Reputation Review* 10 (3): 201–12. https://doi.org/10.1057/palgrave.crr.1550051.

Claim Flights. 2023. “Fight Delays and It’s Impact on Air Passengers.” 2023. https://claimflights.com/impact-of-flight-delays/.

Columbia. 2024. “Content Analysis Method and Examples.” 2024. https://www.publichealth.columbia.edu/research/population-healthmethods/content-analysis.

Donnellan, Angelique; Asher, Nicole. 2024. “Shortage of Air Traffic Controllers Leading to Flight Delays with No End in Sight - ABC News.” 2024. https://www.abc.net.au/news/2024-01-29/airservices-australia-air-traffic-controllersflight-delays/103394592.

Dovetail Editorial Team. 2023. “What Is a Unit of Analysis? Overview & Examples.” 2023. https://dovetail.com/research/unit-of-analysis/.

Elton, Charlotte. 2023. “Refunds and Compensation: Everything You Are Entitled to If Your Flight Is Delayed or Cancelled | Euronews.” 2023. https://www.euronews.com/travel/2023/08/30/air-traffic-control-chaos-everythingyou-are-entitled-to-if-your-flight-is-delayed-or-canc.

Eurocontrol. 2018. “CODA DIGEST 2018, All-Causes Delay and Cancellations to Air Transport in Europe - 2018.” www.eurocontrol.int.

Euricontrol. 2019a. “All-Causes Delay and Cancellations to Air Transport in Europe.” www.eurocontrol.int.

Eurocontrol. 2019b. “PRR 2018 Performance Review Report an Assessment of Air Traffic Management in Europe during the Calendar Year 2018 Performance Rev.” http://www.eurocontrol.int/prc/publications.

FABEC. n.d. “How Likely Is It for Passengers to Arrive at Their Destination on Time?” Accessed December 17, 2024. https://www.fabec.eu/images/user-pics/pdfdownloads/aviation_facts/Aviation%20Facts%2002%20Punctuality%20screen.pdf.

Faisal, Sonam. 2024. “Top Best Practices for Internal Communications in Airlines.” 2024. https://www.sparrowconnected.com/blog/top-best-practices-for-internalcommunications-in-airlines.

Figueiredo, João. 2022. “TAP Air Portugal Punctuality in 2018 Organizational Challenge or Inevitability.”

Folke, Filippa, and Marika Melin. 2024. “Ramp-up in the Air: Impairing or Repairing Aviation Crews’ Working Conditions? A Mixed-Methods Survey Study on Working Conditions, Health, and Safety among Cabin Crew and Pilots in Europe.” *Journal of Air Transport Management* 119 (August):102642. https://doi.org/10.1016/J.JAIRTRAMAN.2024.102642.

George, Tegan. 2022. “Semi-Structured Interview | Definition, Guide & Examples.” 2022. https://www.scribbr.com/methodology/semi-structured-interview/.

Gratton, G. B., P. D. Williams, A. Padhra, and S. Rapsomanikis. 2022. “Reviewing the Impacts of Climate Change on Air Transport Operations.” *The Aeronautical Journal* 126 (1295): 209–21. https://doi.org/10.1017/AER.2021.109.

“Ground Handling Air Operations - Air Aviation Support.” n.d. Accessed December 12, 2024. https://airaviationsupport.com/aviation-2/ground-handling-key-to-efficient-airoperations/.

Hassan, Muhammad. 2024. “Qualitative Research - Methods, Analysis Types and Guide.” 2024. https://researchmethod.net/qualitative-research/.

Hebert, Joshua. 2020. "Air Traffic Control Delays: What to Know and How to Avoid Them - Magellan Jets." 2020. https://magellanjets.com/private-aviation/avoiding-air-trafficcontrol-delays/.

Hromádka, Martin. 2013. "Transport Problems, Turnaround Coordinator. YES or NOT."

Janzen, Jennifer. 2023. "2018: Worst Year for ATC Delays and Flight Cancellations in Nearly a Decade – Airlines for Europe." 2023. https://a4e.eu/publications/2018-worst-year-foratc-delays-and-flight-cancellations-in-nearly-a-decade/.

King, Nigel. 2014. "Using Templates in the Thematic Analysis of Text." In *Essential Guide to Qualitative Methods in Organizational Research*, 256–70. SAGE Publications Ltd. https://doi.org/10.4135/9781446280119.n21.

Kohl, Niklas, Allan Larsen, Jesper Larsen, Alex Ross, and Sergey Tiourine. 2007. "Airline Disruption Management-Perspectives, Experiences and Outlook." *Journal of Air Transport Management* 13 (3): 149–62. https://doi.org/10.1016/j.jairtraman.2007.01.001.

Kulesa, Gloria. 2002. "The Potential Impacts of Climate Change on Transportation Weather and Aviation." http://climate.dot.gov/documents/workshop1002/kulesa.pdf.

Loh, Chris. 2022. "All Airbus? The TAP Air Portugal Fleet In 2022." November 6, 2022. https://simpleflying.com/tap-air-portugal-fleet-in-2022/.

Machado, Amália. 2020. "Análise de Conteúdo Da Bardin Em TRÊS ETAPAS SIMPLES!" 2020. https://www.academica.com.br/post/an%C3%A1lise-de-conte%C3%BAdo-da-bardinem-tr%C3%AAs-etapas-simples.

NewsAvia. 2021. "TAP Entre as Três Companhias Aéreas Europeias Mais Pontuais Em Junho | NewsAvia." 2021. https://newsavia.com/tap-entre-as-tres-companhias-aereaseuropeias-mais-pontuais-em-junho/.

Ortega, Cristina. 2024. "Pesquisa Mista: O Que é, Como Funciona, Quais São Os Tipos?" 2024. https://www.questionpro.com/blog/pt-br/pesquisa-mista/.

Pereira Coutinho, Clara. 2008. "Educação Unisinos 12(1):5-15, Janeiro/Abril 2008 A Qualidade Da Investigação Educativa de Natureza Qualitativa: Questões Relativas à Fidelidade e Validade Issues of Validity and Reliability in Qualitative Research."

PPM Express. 2024. “What Is Resource Optimization? Best Practices And Techniques.” 2024. https://ppm.express/blog/resource-optimization/.

Quivy, Raymond; Campenhoudt, Luc Van. n.d. “DE INVESTIGAÇÃO EM CIÊNCIAS SOCIAIS.”

Shannon, Paul. 2022. “Inadequate Infrastructure Reason for Airport Delays - The Portugal News.” 2022. https://www.theportugalnews.com/news/2022-06-14/inadequateinfrastructure-reason-for-airport-delays/67900.

Slow, Oliver,; Rhoden-Paul, Andre. 2023. “Airlines Warn of UK Flight Delays over Air Traffic Control Fault.” 2023. https://www.bbc.com/news/uk-66637156.

TAP. 2019. “CONSOLIDATED ACCOUNTS.”

TAP. 2021. “MANAGEMENT REPORT CONSOLIDATED ACCOUNTS 2 CONSOLIDATED MANAGEMENT REPORT.”

TAP. 2022. “MANAGEMENT REPORT CONSOLIDATED ACCOUNTS.”

TAP. 2023. “RCConsolidadoTAPSA2023.”

TAP. 2024. “A História Da TAP — Institucional.” 2024. https://www.tapairportugal.com/pt/anossa-historia.

The Portugal News. 2023. “TAP Rises up the Rankings - The Portugal News.” 2023. https://www.theportugalnews.com/news/2023-12-11/tap-rises-up-therankings/84076.

The Portugal News. 2024. “The Best (and Worst) Airlines in Portugal for Punctuality - The Portugal News.” 2024. https://www.theportugalnews.com/news/2024-01-28/the-bestand-worst-airlines-in-portugal-for-punctuality/85392.

World Metereological Organization. 2024. “Aviation.” 2024. https://wmo.int/topics/aviation.

Zaidi, Darakhshan. 2023. “ATSEP Use Cases: Processing Errors Due to Delay in Air Traffic Control: Understanding the Impact and Solutions.” 2023. https://www.skyradar.com/blog/processing-errors-due-to-delay-in-air-traffic-controlunderstanding-the-impact-and-solutions.

Zámková, Martina, Martin Prokop, and Radek Stolín. 2017. “Factors Influencing Flight Delays of a European Airline.” *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis* 65 (5): 1799–1807. https://doi.org/10.11118/actaun201765051799.

[This page was left empty intentionally]

ANNEXS

ANNEX 1: LETTER OF INTERVIEW AUTHORIZATION

ESCOLA DE GESTÃO, ENGENHARIA E AERONÁUTICA

Pedido de Autorização

Assunto: *Pedido de autorização para recolha de dados para elaboração de tese de mestrado em Operações de Transporte Aéreo (ISEC Lisboa).*

Chamo-me Anildo de Jesus Semedo Barreto e sou aluno do Mestrado em Operações de Transporte Aéreo, do Instituto Superior de Educação e Ciências, em Lisboa. Encontro-me a realizar o trabalho final dedicado à temática da Gestão De Atrasos e Irregularidades Operacionais na TAP Airlines, em particular os atrasos e as irregularidades ocorridas depois das mudanças feitas na TAP Airlines em 2019, e as mudanças feitas no Aeroporto de Lisboa.

Por forma a conseguir compreender esta problemática, afigurou-se pertinente obter depoimentos de diversas personalidades de relevo na área e na TAP Air Portugal através de entrevista. Neste sentido, solicito a V. Ex.ª que me conceda esta entrevista como forma de atingir os objetivos do meu trabalho e concluir o mestrado.

Finalmente, cumpre-me garantir o anonimato e o uso exclusivamente académico dos dados.

Antecipadamente grato pela sua colaboração,

Respeitosamente

Anildo Barreto

Aluno de Mestrado / 20220341

The same for all

ANNEX 2: INTERVIEW LEGITIMIZATION

Introduction

This interview is carried out as part of my master's thesis in Air Transport Operations, at ISEC Lisbon, with the theme «MANAGEMENT OF DELAYS AND OPERATIONAL IRREGULARITIES AT TAP AIRLINE».

Firstly, I would like to express my gratitude for your willingness to participate in this interview, which will certainly contribute in a valuable way to the development of my work.

Secondly, and as agreed, I would like to remind you that, taking into account the nature of the interview – a “semi-directive interview” –, it will be necessary to record the statement for later analysis. I would like to assure you that your participation will be treated anonymously, your name will not be mentioned in the work, and the data collected will be used exclusively for academic purposes.

[This page was left empty intentionally]

ANNEX 3. TAP AIR PORTUGAL PILOT INTERVIEW SCRIPT [E1]

Data: 19/08/2024]

[Duração: 26min]

[Introdução: legitimação da entrevista]

Why don't you go ahead and present yourself, such as your background, your education, and your job experiences.

So good morning. It's a pleasure to be here with you answering your questions and helping you on your master thesis. My name is E1. As you said, I'm currently a first officer flying A330 on a Portuguese airliner, I was also between 2016 and 2017 a first officer in Rainier based in Dublin. I started my aviation career around 2012, where I managed to take my frozen ETPL. I then was also a flight instructor and currently I'm also finishing my master thesis in air transport management, so that's briefly my background.

So, the reason why we are here actually is because of what happened with TAP in 2018. I don't know if you remember, but TAP had the worse punctuality rate in the world. Like 58.4%. And this number, includes all TAPs flight, including the medium and long-haul flights made by TAP airlines, by the PGA Airlines, and the White Airways.

<u>Is there anything that you'd like to say about that time, if you remember?</u>

I have some flashbacks of course, 2018 and 19 was five year ago, I remember especially 2019, we had a quite busy and particular summer, and as you may know we have a big problem which I think also contributes to the situation which is an airport, which has not so good infrastructure because it doesn't let us grow, It's very limited and I think that's one of the main reason of what happened on those two years, yes.

We had a colleague, I mean someone who made a study during that time about what had happen with TAP in 2018, and his name is João Figueiredo. He studied at ISEC Lisboa as well.

In his study he wanted to understand what happened with TAP`S operation, and all internal and external problems.

He found out that in 2018, right after what had happened with TAP`s punctuality , that TAP implemented a few mitigation measures in 2018, such as, the provision of the reserve aircraft, the increase in the numbers of pilots and crew members, the implementation of a new operational management IT systems, which is better adapted to TAP`s growing volume of operations, and the development and implementation of an integrated operation Control Center. Those were the main Changes that happened at TAP during that time. So, with those measurements in place, I noticed that in 2019, the punctuality rate went up by 5.5%. From 58.4% to 63.9%.

***With that said, what I'm trying to understand now is, if those changes made back then, continues to have a positive impact on TAP AIR PORTUGAL operations*.**

So, I think one of the measures was, I think you have also to set, ah, where TAP was in those periods. It was a period, as you may remember, of the beginning of the private business that acquired TAP.

I think it was around 2017, and between 2017 and 2019 there were two major changes in TAP. Was the increase of new routes, especially the new United States exploration, as well as by consequence of course, the massification of recruitment that TAP had. Between 2017 and 19 TAP increased. I think it was one of the most recruitment processes that TAP had, on its 70 years of history. And besides that, I think the measure, the IOCC integrated operations was in fact one of the biggest changes in operations that TAP had in those two years.

On the years before, from my experience of operation, and my experience is only on the outside, because I honestly don't know how things work inside, we understood that the big sectors, which were operations and coordination did not talk between themselves.

So, with the creation of the IOCC, they were standing in the same room where you have one member of each sector working together, and I think that changed a lot and made the process of resolving issues and delays easier. That's no doubt.

Regarding the massification of the recruitment of new people, pilots and flight attendants of course, because in 2018 and 19 we had big flaws regarding crews. There were a lot of flights, because this works as a snowball with the delay. So maybe if you have a flight delay, then you don't have flight crew to perform the day after, and then you also don't have flight crew enough to make that flight.

So, what the rostering management had to do was to call, for instance, for pilots and flight cabin crew to fly on their days off. And of course, with the recruitment of more people, they had more leverage to solve those issues, and I think those were the main two biggest things that TAP made on those periods to try to solve the issues they had around 2018.

And of course it produced a positive result, right?

Yes, yes, yes. But I think the IOCC, because this is well, as you know aviation is very volatile and depends on a lot of factors, and you have lots of factors combining, and trying to solve 1 is not easy, you know. Because, solving one, suddenly you have another one.

So, but, yeah, I think those two measures were very, very helpful, and they helped solve those numbers we have on 2018, yes.

Now I'll try to get into more specific questions, like regarding what I'm really studying.

I'll have a total of eight questions. The first one, the first two in this case is regarding the operational changes and their effects.

From your perspective, with your experience with TAP, what changes in operations have you observed at TAP since 2019?

So, since 2019, I think the management and the development of the IOCC was a big one, I think also they have made like a lot of change for have personnel, physical personnel being at the gate helping for boarding, to have a more coordinated response to an eventful delays and issues.

I think those are the two ones because, for instance, we now have a TRC which is called for a turnaround coordinator, which he is also present, he is a physical person of course, and he is present on every aircraft. His job is as the name says, to coordinate everything regarding the flight. So, he is present, he's always calling coordination, operations, maintenance, to help, to minimize also our workload, because the main issue before, was that if you need for instance maintenance, the cabin crew had to went to the cockpit, and asked for the cockpit to call maintenance, and that is another workload.

Another example, if for instance you didn't have passengers boarding, and the cabin crew was like, OK, but where are the passengers? The cabin crew had to go to the cockpit to ask for us, to ask coordination by VHF via radio, to see what the problem is.

So, the physical presence of the turnaround coordinator, somehow eliminates that you know. Because those issues go now through that person, and the main job of that person, of course, is to coordinate and to see what's wrong, and to try and solve those problems. So, I think also that presence helps us a lot, minimizing delays and also minimize workload.

How would you say those changes impacted flight punctuality and delay management?

Well, I think it has helped. Of course, some issues we had before like I said, I think it has helped, but as I said before, at the beginning of the interview we have some issues that we can control and can resolve and we have other issues that we can't resolve, It's more difficult. So, the issues we can resolve, I think those they improved massively. Yes, I must agree. But then you have those issues, for instance, the airport case, that it's difficult to solve because it's not on our hands.

So, I think the issues that were in the company's control were somehow mitigated and minimized, and it's a lot better nowadays.

The presence of turnarounds in the airport. According to my research, and literature review, I found out of course that the reason why TAP had the worst punctuality rate in 2018 was because the airport was overloaded.

Those were one of the main issues for TAP, and with the presence of the TRC`s changes were actually happening.

Because, I don't think the majority of people, especially passengers, know that there's two kinds of restrictions on airports. You have CTOT`s, which is a common name for slot, which is given by EURO control, and then you have TSAT`s which is a standard start up time which is given by the airport.

On low Hall, it's very rare having CTOT`s, OK. But we have always TSAT`s, which is a restraint from the airport itself. So, the airport doesn't give you margin to self-maneuver and start the flight at that time. And of course, that creates a snowball effect.

So, for instance, I'm going to start the flight to Rio and I'm at the gate, and suddenly a TAP flight is landing, and needs that gate because all other gates are occupied. So, as I'm having a restriction of start-up time, I cannot free my gate and start my flight, and the other flight cant also end is flight by parking at the gate, and you have to think as well that, that arriving aircraft as a rotation in, for instance, in three hours but with that restriction that time isn't going to be fulfilled, you know. So probably the flight leaving in three hours is going also to be delayed. So, it's a snowball Effect you know. And of course, that's also reasons that are out of control of the airlines.

So, I will proceed with the next three questions, which are regarding the challenges and solution. So, first question, what I would like to know is:

What are the most common reasons for delays that you encounter as a pilot, in your daily operations?

I think the most one has to be airport congestion, without a doubt. The second one, as been a long-haul Pilot, is waiting for the passengers from other flights, because we do also a connection like a breach from Medium Hall to long haul destinations.

SO, for instance, passengers who are coming from, I don't know, from Barcelona, for instance, to go to Rio de Janeiro so, the passenger is on board of our flights from Barcelona to Lisbon and then gets on the long-haul flight from Lisbon to Rio. And sometimes we need to wait for

those passengers to arrive. So, I think those are the most two common reasons for delay at this moment.

And would you say that those delays happen a lot, at Lisbon Hub?

Since we know that Lisbon Airport right now is over its capacity, for the movement of the aircraft that we have over there. So, would you say that these delays happen often at Lisbon Hub?

Yes, regarding the airport congestion, yes, yes, I could confidentially say like 90%, it's regarding restrictions at the airport of departure.

So, the second question is, I would like to know ***how you think TAP can address these issues more effectively?***

Regarding the airport, I think a *new airport*. Regarding the airport restrictions, I think TAP´s hands are tied you know, because I think it's, as I said, it's Out of our control.

And the solutions, there are only *increasing airport capacity*, of course. It's the only way, you know. Regarding the second one, it's all tied. So, I think increasing the airport's capacity would solve a lot of those issues you know.

For instance, and I don't want to talk a lot about the airport, but it's, you know, I have to because for instance, having two runways at the airport would help as well, but that's tied to increasing capacity. So, I think increasing the airport's capacity would change a lot of things. Yeah.

So about talking about the airport, that also will help me a lot because my thesis also goes regarding the airports. I found out that we had some changes at the LIS airport as well, So, yeah, I kind have an idea that how the LIS airport is affecting TAP´s Operations.

So, I'd like to follow for the next two questions, which is regarding coordination and communication. So, I'd like to know ***how would you describe the communication and coordination between pilots, the operational Control Center, and the hub service during irregular operations?***

I think they are good because, as you said, as you read on that study, the creation of the OCC I think was a big improvement, as well the presence of the TRC´s. The Turnaround coordinators helped us a lot. We have now two ways of contacting our operations, 3 it's via radio on the airplane, we can also call them via phone, and now we have the presence of the TRC´s, which makes a bridge in case we are with some workload on us, and we don't have that time on that moment to sort of lead with some issues. So, I think at this moment they are great. They were a big improvement for sure.

During the irregular operation time, the communication you could say is practically good, right?

Yes, yes, yes.

Well, that's good to know. ***What improvements do you think can be made to enhance this coordination?*** *Like although it's good right now, do you think there is room for like improvements in communication?*

Yeah, I think there's always room for improvement.

I think one of the measures could be, for instance, introduce some kind of informatized system, you know, where we would have access to some information that the coordination and operation have that we don't have. So, what I'm trying to say is, sometimes you need to ask them for information, you know, and that could be sorted out by us having that access to a system which presented that information.

I can give you an example. For instance, the 0-fuel weight on the airplane is the information, which is kind of important for us, because we must decide which to fuel based on the weight.

So, if the aircraft suddenly gets heavier, we need to have more fuel added because the aircraft is going to consume more fuel. And to have that information, we have to call operations to see if they have the weight. So, for instance, if you have a system where it would display for us, because they have it, you know, we could have it as well. It would minimize workload and indirectly would help everyone, you know, alleviate some workload and to be more focused on other things. I think that's one of the ideas, for instance.

So, would you say that in 2022 and 2023, those measures that TAP Airline took back then, are completely positive nowadays?

Yes, yes.

What about the future improvements? This next two question is about Your idea or what do you think will be good for the future for TAP Airline?

Based on your experience, what suggestions do you have for improving TAP´s delay and irregularity management model?

Right now, we know that the TRCS are doing a good job, and they have been of a lot of help. So, is there anything else that you'd like to say that will improve the delay and irregularity management model of TAP?

I have to think a little bit. Without a doubt I think, as I said, TRC's are a big improvement and a big help, but I think you have to solve issues as they start to appear. And I think at this moment all other issues are blocked. We can’t see what the other issues are because we have a main issue, a major issue that is covering all others, that is the airport, you know. So, the other ones I think were solved and well solved with those implementations. So, right now I don't have any idea or suggestion because the one that is hurting TAP the most right now is of course the delays caused by the airports.

As a pilot, of course you experience a lot of things inside the company. Some may be good, some may not. I'm not a pilot, so I don't have experience in that area, but I can imagine how those things can happen.

How can TAP better support pilots in minimizing delays?

Well, uh, it's difficult. I think improvements are being thought up and implemented, which is good. I think there's a concern regarding delays, in the last 6-7 years there have been without a doubt improvements and good improvements. I think one of the measures is, like I said to you, some kind of implementation of an informatized system that would give us more information you know. Because sometimes we don't have access to that information.

For instance, why is the flight going to be delayed?

And if you have like a pop up on the system saying, OK, your flight is going to be delayed because you're waiting for Passengers from another fight. OK, we know. And we can somehow keep everyone in the loop, because for us to have that information, we have to ask coordination.

OK, Coordination, what's the reason for the delay?

And then of course they would say: OK, guys, it's because we are waiting for passengers from the Barcelona flight, for instance.

So, I think if we had like a system on our IFB that we would say like, OK, status of the flight is on time, connections are on time, you know, I think that's one of the ideas that could get everything running smoother and better, yeah.

That's great to know. Basically, this is the end of our interview, I mean the question that I had for you. It has already been of great help, so I would like to say thank you very much John for taking the time to have this conversation with me.

Thank you so much for having me and I wish you good luck with your endeavors.

Thank you very much and I appreciate it. Also, good luck to yours as well. Thank you very much again.

You're welcome.

ANNEX 4. TAP AIR PORTUGAL PILOT INTERVIEW SCRIPT [E2]

Data: 19/08/2024]

[Duração: 35min]

[Introdução: legitimação da entrevista]

Today I'm here with E2, one of TAP´s experienced pilot to conduct an interview.

Can you please present yourself, such as your education, your background, and your experience.

Hi Anildo. First of all, congratulations for your efforts and for your master's on ISEC, I wish you all the best with your work and future, of course.

I'm very pleased to be contacted, to play a part in your work and all the best for that as well.

I am at the moment flying Airbus 330-900 at TAP Air Portugal, I started airline flying in SATA Azores a small commuter. This was 2001, and by the end of that year I joined TAP Air Portugal as 320 First Officer, 2 and 1/2 years later, 310 first officer, and another two and a half years, 320 captain for 13 years, and now I've been signed to 330 since 2019.

I was an instructor on 320 and as well now on 330.

Basically, that's it and I had been an instructor on single engine piston too, as the gliders, some aerobatics as well, and ultralights. So, I really like flying and I enjoy it very much.

So, the reason why we are here today, is because my thesis is about the management of delays and irregularities at TAP airlines, as I've told you before. So, the reason why I chose this topic It's because in 2018 TAP Punctuality rate was the worst in the world. TAP got 58.4% in punctuality.

I don't know if you remember about that matter in 2018. It was a rough summer. Do You have some recollection, is there anything that you remember about that year*?*

Yeah, those years I will maybe call it some game changing years. That's when the privates started working at TAP, basically Nielman and his team. A lot of changes were pushed hard, and we had to adapt.

In TAP, the company has a slow-moving pace. When you want to make changes and if you want to go deep root with the changes, It's hard. It's an old company with some installed bad habits or basically not so up to date processes, and have the need to adapt, and the need to grow and expand. So, a lot of new pilots, new cabin crew, new planes, a lot of planes arriving, a lot of instruction. So, everybody was very busy, in-flight operations, in PMT, in PNC. So, it was very hard for everybody, and the delays were very flexible, because even the airport, in this case the Lisbon Airport, is complex as well, faced Some rough times with the major operator expansion, which is TAP Air Portugal.

ISEC LISBOA had a student, his name is João Fegueiredo and he conducted a study during that year. He wanted to find out what had happened that year, 2018, that TAP had that punctuality rate which was 58.4%. So, his finding was that after 2018, TAP implemented a series of mitigating measurements to improve punctuality. Being those the development and implementation of an IOCC, the use of spared aircrafts, the additional hiring of pilots and crew members, the modification of the passenger boarding processes, the implementation and use of a new operating systems, and the creation of punctuality committees. Those were some changes that TAP made back then to try to increase their punctuality. So, in 2019 the punctuality rates rised. According to my literature review, from 58.4% to 63.9%. So, we have an increase in punctuality of 5.5%.

What I'm trying to find out is, if those implementations that were made back then, are still very effective now, or did they made any other changes after those changes made in 2018?

When you mean now you mean today?

I mean till this day, is those measurements still producing positive results on TAP´s operations?

I believe even if some of those measures were left behind, there is learning from that and the company I believe extracted the best practices from them and back to normal, and still trying to adapt, the pandemic changed a lot the environment, the size of the company, the number of the crews and people working on flight operations, so, the reality at the moment is a bit different from then. But some major changes back then and the maybe the reflex of that, If I remember correctly, 2018 lot of admissions were in progress, when you have, I will now point out through basically pilots or crews, you have the need for those people flying in the line, let's call it like this, but as TAP has its own instructions, you have to remove Captains and instructors from those line flights.

So, you don't have pilots because those pilots are instructors, and they are in simulator instead of doing just verifications and so on, instead they are performing some the type rating courses which take more time, more hours, more effort and they are occupied in Lisbon and outside. I remember we had crews in the Middle East, in London and in the US. So, everybody will split up where the simulators were available.

You mentioned the IOCC, I believe it was something very very important, and it was talked about for several years, but it was not a work in place. (“We need the octopus” this line is unclear).

Are you listening to me? Because I believe there is some background noise. Sorry for that.

I am Listening.

The IOCC was an extremely advantage tool, I believe. Not yet what it’s called, now at the moment the name changed a bit to IOC.

Lisbon Airport is still a challenging place to be our home base, with the constants TSATs which the handling has to emit its TOBT, and then we have to expect some TSAT from the airport and that is causing delays.

When you arrive and your stand is occupied, the airport basically they try not to get you a free one, because they have that one for another aircraft, and sometimes you have one aircraft

ready to go waiting for a TSAT, which was emitted by the airport, so your stand is there, occupied by when ready airplane, which can push back anytime, but the airport doesn't allow them to push back in order to vacate your stand so you may park, and start your deboarding, and then get everything ready for the next flight.

The airport doesn´t do that, because of statistics, so, they don't want to have delays and the time from push back till take off. So, they don't let the aircraft push, so you are outside of your gate just burning fuel and waiting, and the delay is accumulating because you have transit passengers, you have everything, connecting flights, all of that, it's a huge snowball growing since morning until late in the evening. Back to your question, 2019, I think it was when things were starting to calm down, so you already had more pilots in the line, the planes were there, So everything was yes in a high written pace, but things were starting to roll, and then when we were hit by, we and everybody, of course, by the pandemic and full breaking and the rest you know.

*So, I will proceed with the rest of the question which are the questions that really will help me a lot at my master's degrees. I have 8 questions for you. The first two questions are about the operational changes and effects, and I think you already said it all, but I'll ask it anyway just in case you want to add something else****. From your perspective what changes in operations have you observed at TAP since 2019?***

Aside from those implementations, is there any other change that they made at TAP?

Yes, there is one big change. It's basically in the center of all of what we've been talking about, which was the introduction of TRC. Basically, it's someone who connects the dots between the needs of the flight crews and the cabin crews handling agent, cargo sector, and the IOCC.

Communication, I think, is an extremely valuable asset to be developed in the company. If you develop communication, you start to put all the pieces talking to each other, and things start working lubricated. Otherwise, everybody's pulling the strings to one side or to the other, and we are in a certain way and not consciously, but we start fighting each other because we don't know the needs of the next sector. So, I think there are some positive implementations to be done regarding this matter. Flight operations have to be in the channels of communication, as

they have to be wiser and so more open, easier whatever by the needs, so, WhatsApp, telephone, sitcom, BTSU, whatever. But we need to know because at the moment, we have so many tools like from flight radar to whatever, when we take off from point A we already know at what time, more or less 10 minutes, we know at what time we are about to land. So, sometimes delays wake up calls for crews, the handling, the special needs to wheelchairs and so on passengers, all of that, which then caused delays because you need cleaning teams to go into the aircrafts purely to start everything and you have 3, 4, 5 wheelchair passengers that you need to take them out of the plane, but you don't have the assistance, so you cannot do that, and suddenly things start delaying and the delay start growing.

So, with the implementation of the TRC that you said was a big change, would you say that this change impacted the flight punctuality and delay management in a positive way?

Yes, for sure for sure. Before that, let's say the senior Crew member went to the cockpit and tell me, Oh, Captain, we are missing, let’s say 10 business meals. I had to stop my routines, I had to stop what I was doing, to get on the radio, and that was only one channel, and it's the same for the units Fuel, for the aircraft that needs a flight plan, for someone dealing with a slot, so I had to wait for my turn in the radio to get in touch with one of the sectors asking for the meals and to know what is the estimated time for those to be on board and everything. At the moment Cabin crew just talk with TRC. If I need to know something about loading or zero fuel weight or whatever, I ask them, so everything works more silently and smoother and the information is let's say live.

It can be improved the updates rates of all of this, but it's an extremely I think well access measure.

All right, so I'll try to proceed for the next two questions, which is regarding the challenges and solutions.

How frequently are you flying these days, since you said you are more focus on training? isn't it?

Yes, actually I stopped two months ago, but in the past year I was with the type rating instructor on 330 yes.

Even by then, we had a mix between flights similar to Sessions and line flying, whatever it's leafless or just normal flying. Yeah. So, yeah, I was in line flying.

So, since my studies are comprised from 2019 with a strong focus in years 2022 and 2023, you were flying during that time, so, you would be able to answer this question with no challenge I believe.

What are the most common reasons for delays that you encountered in your daily operations back then?

I think Lisbon airport is a head cracking puzzle, because it's the airport, and the way, I don't know if this could be done, it's a challenge to have regular meetings with Airport authorities, handling, partners and airlines, so that the processes and everything could be talked about the needs that everybody has, and «*what can I do for you? » « What can you do for me?* » And if we share this experience, maybe some synergies can be done.

Which would be, I believe, deeply appreciated by every part. By this I mean, what I told you before about the parking occupied and the arriving plane and so on, even inside the company, the time needed and the update rates of information to the cruise has to be much more quicker, so if my 0 fuel weight let's say is increased by 4 tons, I need to know ASAP because maybe I need extra fuel, and I need to know that, so I can ask the fuel truck so I can perform everything before my schedule. If I only know this when I think when the load sheet comes, I was expecting to be full ready and let's roll, and from one moment to the other, here we go 40 minutes delay because we are waiting for the fuel truck and doors to close, doors to open, if the flight plan changes, blah blah, blah, blah blah blah.

The airport with the handling is working, I believe much better.

I believe the communication and the pace that they work flight operations I believe they are overloaded at the moment, because of restructuration in those sectors, they are quite busy. So, they cannot help everybody all the time, but we need to improve there.

OK, so being the airport, the main issue for the delay that you encounter…

It's not the one to blame, the operators need to adapt. But there is a lot of work to be done inside the home, but the airport is a big challenge. Then inside the company I will come again with communication.

The channels need to be open for planning, for crewing, for scheduling, for flight operation, I need to get on the phone and 1, 2, 3 rings and someone has to answer. I cannot be waiting for 20-30 minutes, and nobody answered. This cannot happen.

OK, so my second question actually would be how you think TAP can address this issue more effectively, but you already said it all, is the communication inside the company!

Yeah, I believe so. I think if the frontline and let's call it frontline, the TRC, the load masters, pilots, cabin crews, handling agents, if there were meetings maybe every, let's say, three months, well led meetings, I think very good measures would be extracted and everybody would be able to work much better in a best environment.

*Well, my next question, it goes to the coordination and communication what you already talked about, and what I would like to know is****, how would you describe the communication and coordination between pilots with the operational Control Center and the hub service when irregularities happen?***

The communication it happens, so the message goes, and the message come. The measures and what happens after that communication, *"we have a problem. We are delayed". "OK, we copy that".*

"And how about now?", so let's start to take decisions, to adapt and to reengage the new reality is still a work to be done.

Maybe I know that we cannot predict everything, but we need to know to work on maybe flow charts for instance, basically, some basic flow charts but to help us.

For instance, in those years 2018, 2015, there were a lot of irregularities based on the lack of crew. They didn't have crew, and they needed one pilots, or one cabin crew and the company had none. So, stead you had to wait for the sectors on the phone to convince someone to come.

And you were constantly expanding your flight time, duty periods and so on. And one of the things I suggested at the time was, in our flight report when you sign on, if you have a place where you have, ok, this crew can start working at this time, and you are able to work until that time, with expansion of flight duty periods until this time, and with the captains expansion by law, until this time. This would help a lot, because then you didn't need to lose the time searching and looking for everything, you will be able to give answers instead of being asking for answers and for everything.

So, would you say that right now the communication is the same as back in 2017 and 2015, that had a lot of problems?

The communication It's the same basically.

It's the same but with the implementation of the TRC's, the communication started to become easier, didn't it?

Yes, but in terms of irregularity and mostly out of base, you don't have the TRC. So, this is an issue. Out of home base, you are a little left on your own and when you start calling, sometimes you don't have the answer, yes.

There was another measure adopted by the company, which was the TAP representative station manager basically outside of home base, he is area operation, let's say like this, he lost some autonomy.

And suddenly you are in Caracas, Venezuela, for instance, with an irregularity, and you need to go to the hotel, and you need to be calling to Lisbon, for Lisbon to talk with the hotel there; and I'm saying, Caracas, I could be talking about Angola, or Sao Paulo, or whatever, and most of the time stations managers, they leave in the area, they are local, they know the people, the communication is easier.

So, and most of these times, it's when time is an important asset, and we are losing it. So, I think this would be maybe one of the things.

So, just to continue with what you just said, ***would you say that there is room for improvements that can be made to enhance coordination and the communication?***

Like what would be your idea for enhancing the coordination and communication inside the company?

Maybe If you have in IOC, let's say one person for X number of flights, instead of "*OK now Anildo is the IOC master from 10 to 16",* so, you are in an electric chair.

So, every problem is falling on your head. Maybe if you have 3 or 4 electric chairs they would be more pleasant to work at. So, you would know better your environment, your planes, your flights and you would know the needs for that instead of OK, I'm here, sitting here, and I am controlling 70 flights. You cannot control 70 flights, but if you were attached to 10 flights, OK, now you know that TAP number #1 needs 3 meals, and TAP #3 is waiting for connecting passengers from Rome arriving, so you are more on top of things if you're spectrum is shorter.

The next two questions, which are the last two questions that I have for you is about the future improvements?

So, based on your experience, what suggestions do you have for improving TAPs delays and irregularities management model?

I think one of the major things is, you need to go talk to people in the front line. If you don't go out of the office and you keep reading reports, reports were written by those who conduct to this condition.

And they are managing it for a while and the results are still the same. So, you need to search for information, maybe deeper in the company, and when I mean deeper, it's closer to the frontline and you need to listen to them. You need to listen. What problems are they facing, what solutions did they have to find in order to survive, and to keep things rolling. If you know this, maybe you can digest and implement some stronger measures based on the information extracted from these people.

How can TAP better support pilots in minimizing delays?

Well, now you're not flying, not directly, but you work with pilots every day. ***So how do you think TAP can help pilots?***

I think if you start digging instead of everybody being worried about, *no, no, no, the delays are not because of m,* and If you start digging and looking for OK, what caused all of this?

Let's see the timeline, how things happened. But for this you need people to be looking into it. Researching into it takes time, takes money, takes people, but if I need fuel, and I need fuel because information and communication from 0 fuel weight increase were not released by the cargo compartment to flight operations, so flight operations cannot talk to me, and the delay in the flight report is due to late fuel truck.

So, you go to the company and say, «*oh you guy from the fuel truck you are always very late*». This is not true, so you need to dig and evaluate what's happening in all this timeline of the irregularity, to start making changes in the route of that, instead of *OK, «the last guy of the delay is to blame*». If you keep doing this, you're not solving things.

Well, this is basically the end of our interview.

Thank you very much for coming and give me your feedback about your experience as a pilot at TAP Airline.

You're welcome. My pleasure. Thank you very much for the chance to be talking to you, it was my pleasure as well and hope this conversation will help you on the success of your project. I wish you all the best to you, to your colleagues and to your professors.

Thank you very much, and I wish you all the best as well.

ANNEX 5. MENZIES TÉCNICO DE PLACA INTERVIEW SCRIPT [E3]

Data: 25/08/2024]

[Duração: 26min]

[Introdução: legitimação da entrevista]

Que tal começarmos por apresentar a tua pessoa, o que fazes, e o teu nível académico?

Sou E3, também sou estudante do Mestrado de operações de transportes se bem que não estudei este ano, mas pretendo voltar a estudar, neste momento, sou funcionário da Menzies, que é a antiga Ground Force, e na Menzies nesse momento estou a trabalhar como TPA de placa, que é o técnico de placa e assistência em escala.

E3, o meu trabalho tem a ver com Gerenciamento de Atrasos e Irregularidades nas Operações da TAP, e tem muito a ver com as mudanças ocorridas na TAP em 2019, por causa das regularidades que a correram na TAP em 2018. Em 2018 a TAP Airlines foi classificada como o pior Airlines do mundo em termos de atrasos, com uma percentagem de pontualidade de 58,4%.

E depois daquelas mudanças feitas em 2019 supostamente conseguiram recuperar a taxas de atraso. Conseguiram sair de 58,4% por uma recuperação de 5,5%, que foi para 63,9%. ***Por acaso, o ano de 2018 e aquelas irregularidades na TAP, tu consegues lembrar alguma coisa naquela época?***

Daquela época não consigo lembrar nada porque eu só comecei a trabalhar na Ground Force praticamente no final de 2018.

A razão pela qual eu estou aqui é exatamente isso, e teve um colega que também estudou no ISEC Lisboa, ele fez um estudo para ver quais eram as causas das irregularidades ocorridas na TAP no ano de 2018, e ele ficou a saber que foram feitas várias mudanças . O

que eu pretendo saber é se essas mudanças que eles fizeram em 2018, continuaram a produzir resultados positivos nos anos 2022 & 2023.

Como nesses anos já estavas a trabalhar no Ground Force, tens alguma coisa que possas dizer, mesmo sabendo que tu também não sabes muito das mudanças internas da TAP?

O que eu possa falar um pouquinho acerca das mudanças, se calhar são coisas que eu consigo ver e consigo notar nas operações. Coisas internas não consigo descrever muito assim.

Nós a Menzies somos uma empresa prestadora de serviços á TAP. Nós fazemos assistência em Terra para TAP.

Pois, então para começar, eu tenho uma lista de 6 perguntas que eu gostaria de que esclarecesse para mim, uma das primeiras perguntas tem a ver com as medidas iniciais e sucesso.

Você consegue descrever o papel de Ground Force nas medidas implementadas pela TAP em 2018, que levaram a melhoria na pontualidade em 2019?

Estou a dizer ground force porque a data que eu estou a estudar é de 2019 até 2023, a empresa ainda era grande force.

É aquilo que eu estava a dizer, em 2018, se calhar não vou falar muito, mas em 2019, se bem que eu não estava na Ground Force, mas posso falar um pouquinho por aquilo que já conheço dessa área que é o handling do aeroporto.

Uma coisa que eu posso dizer é que a ground force também foi responsável por utilizar os serviços de handling. O serviço de handling inclui os processamentos de bagagem, o embarque de passageiro e desembarque, e quando estamos a falar do handling estamos a falar de assistência em Terra.

Mas o que eu possa dizer é que uma das principais ações da ground force neste contexto, e ajudou muito na melhoria de processos operacionais é isso: a ground force, revisou, melhorou suas presenças operacionais, na redução do tempo necessário para carregamento e

descarregamento de bagagem bem como o abastecimento dos aviões, além da limpeza das aeronaves, e com os processos mais ágeis, só isso que eu posso dizer.

Atualmente eu posso dizer que os aviões conseguem cumprir com os horários de partida de maneira mais eficiente ou mais rigorosa.

Já agora, visto que em 2018 / 2019 não estavas a trabalhar no Ground Force, se calhar não vais conseguir me dar uma resposta concreta, porque a segunda questão é: ***Quais as mudanças operacionais foram feitas nas operações da Ground Force em 2019 para gerenciar atrasos e irregularidades****?*

Portanto gostaria de saber se quando começaste a trabalhar na Ground Force em 2021, os teus colegas que já estavam ali á mais tempo compartilhava contigo algumas mudanças que foram feitas antes da tua chegada.

O que posso dizer acerca disso, se calhar se nota um pouquinho até hoje, é um pouquinho da melhoria da flexibilidade operacional. Se eu tiver que falar isso, vou tocar um pouquinho no que tem a ver os recursos humanos.

Isso pá, foram variações de carga de trabalho, então Ground Force para isso, aumentou um pouquinho a flexibilidade da gestão dos recursos humanos. Isso é, hoje em dia temos equipas novas na nossa área de handling, e ainda fizeram implementação de horários mais flexíveis. E isso ajudou e permitiu que a empresa adapta-se rapidamente o número de funcionários de acordo com a necessidade, minimizando o impacto dos atrasos e os imprevistos que podemos encontrar na aviação.

Eu por exemplo, vim para Portugal em 2021, e vi uma grande diferença do ano 2021 comparado com ano 2024 que eu fui para Cabo Verde visitar os meus familiares, ao voltar notei que o Ground Force tem novos autocarros em Operações.

Sim, sim, implementámos isso na Ground Force neste momento que eu possa dizer mesmo antes da entrada da Menzies, a Ground Force implementou mesmo muitas melhorias, mesmo

nos seus equipamentos, mesmo no que eu já falei há pouco tempo, que é os recursos humanos, implementaram muitas coisas, até mesmo no que tem haver com o sistema informático. Ground Force implementou inúmeras melhorias mesmo.

Tu consegues me dizer como é que essas mudanças afetaram as operações da Ground Force no que desrespeita à colaboração com a TAP nos anos 2022/ 2023?

Olha o que eu possa dizer, é um pouquinho acerta daquilo que consegui sentir e observar nos anos 2022 e 2023. É que com as melhorias, conseguiu-se observar mais ou menos um impacto positivo na experiência com o cliente. Hoje posso dizer que nesse momento tem um serviço ao cliente, não vou dizer muito melhorado, mas já está mais ou menos melhorado. São iniciativas que têm mesmo foco no cliente.

Isto é com a assistência ao passageiro, comunicação, hoje em dia vamos dar um exemplo, tu compras um bilhete na TAP, já recebes às mensagens, olha, o check-in vai começar a que horas, se calhar no próprio dia ainda recebes a mensagem que o check-in ou a porta de embarque vai estar aberta á que horas.

É mais ou menos isso? E atualmente também posso dizer que temos um pouquinho de redução de reclamações. Isto é porquê? Porque teve melhoria nos processos operacionais, no atendimento ao cliente, e isso resultou na redução no processo de reclamações relacionadas aos serviços de handling. Também beneficiou um pouquinho a imagem da TAP nesse sentido.

E também teve impacto no que toca a resposta após pandemia. A adaptação foi rápida, mesmo com o aumento da procura nós conseguimos nos adaptar. Portanto é mais ou menos isso.

Consegues me dizer quais são os desafios que tu encontras no teu dia a dia?

Tipo os desafios operacionais que contribuem para os atrasos nas operações das companhias aéreas.

Dos atrasos vou falar da Ground Force e um pouquinho de forma interna mesmo.

Para isso, vou começar a dizer ainda nas dificuldades de recrutamento. Temos uma dificuldade de recrutamento. Isso durante o período 2022 de 2023, a gente sabe muito bem que muitas empresas no setor da aviação enfrentaram muitas dificuldades para colocar a reter os funcionarios que já tinham devido a muitos fatores, e esses fatores que a gente sabe muito bem que é a reestruturação após pandemia.

Mas a Ground Force também não foi exceção disso, enfrentando a escassez de mão de obra, e momentos até que eu possa dizer momentos muito críticos e são momentos de Verão e alta que foi difícil e complicado para a Ground Force, e isso impactou um pouquinho a capacidade de resposta e contribuiu também para os atrasos das operações na TAP, sem esquecer as greves os conflitos etc.

Antes de irmos para a última parte que tem a ver com as recomendações para melhorias, consegues me fazer uma comparação do que era trabalhar na Ground Force e do que é trabalhar na Menzies? Têm uma grande diferença ou nem por isso?

Olha, neste momento, ainda não se nota muito que se possa dizer diferença. Neste momento só estamos havendo a mudança de nome, mas a gestão da empresa é a mesma ainda. A gestão da empresa ainda é o mesmo e a mudança será paulatinamente.

Porque nós em Menzies o que recebemos depois da mudança é que nisso tudo a mudança vai ser feita mais ou menos durante 2 anos, eu até 3 anos.

Porque nesse momento, estamos a trabalhar para com a Menzies mas parece que estamos a trabalhar ainda com Ground Force. Não temos ainda grandes mudanças ou impactos de mudanças ainda não se fazem sentido porque até só entraram á 2 meses e meio a 3 meses, se não estou errado. Nesse ano ainda não temos grande diferença. Quer dizer, praticamente é só o nome que mudou, mas de resto, ainda estamos a trabalhar praticamente como se fosse Ground Force. O modo de trabalhar é igual o os processos são iguais.

E também não houve mudanças de operacionais?

Não, ainda permaneceu tudo o mesmo, até mesmo na gestão.

E em termos futuras quais melhorias podem ser feitas nos processos da Ground Force, nesse caso, Menzies, para melhor gerenciar atrasos e dar suporte às operações da TAP?

Primeira coisa que eu posso lhe dizer é uma coisa que as empresas precisam mesmo que é a capacitação e a flexibilização dos recursos humanos. No que toca a flexibilidade, eu posso dizer ainda na flexibilidade de horários, e contratações temporárias. Isso é, introduzir horários mais flexíveis, e aumentar um pouquinho a capacidade de contratar pessoas temporárias para a altura do pico de aviação, que a gente já sabe que é o Verão IATA, e é ali onde se precisa muita mão de obra e também a empresa não consegue contratar muita gente contratar muita gente para essa época por motivos X e Y que a gente já sabe, são motivos internos, porque também em que eles oferecem as pessoas, muita gente não aceita ir trabalhar naquele lugar para aquilo que eles oferecem ás pessoas.

E o que não pode faltar também para aqueles que já estão dentro da empresa é formação contínua.

Formação continua é muito importante nos termos na formação contínua dos funcionários, para que possam realizar, para mim eu sou de acordo com aquilo que o funcionário pode realizar múltiplas tarefas mais direitos. Hoje em dia estava a falar com uma colega que trabalha mesmo para TAP, e ele comentou uma coisa.

Na área deles, tu vais trabalhar, mas um dia antes ou 2 dias antes, tu não sabes para que área que tu vais, é tudo a área de handling, mas não sabes para que posição tu vais.

Mas como têm formação para as outras áreas ali, tu chegas ao trabalho, vejo o nome de onde é que está escalado e te mandam para área onde estás escalado. Isto é muito importante mesmo.

OK, mais isso também acontece que uma pessoa pode ter experiência em várias áreas do handling, mas também pode ficar afetado numa parte que, a pessoa não consegue ficar num sítio só, para aprender aquilo assim como deve ser!

Isso é verdade. Só que neste momento estamos a falar para o bem desenvolvimento da empresa.

Como funcionário, posso dizer, epá, isso é verdade. Hoje estás aqui, amanhã estás ali, sobretudo, se calhar não consegues focar numa dessas áreas, porque tu chegas aqui o processo é outro, vais no outro lugar o processo é outro se calhar.

Mas em nome da empresa nós podemos dizer que é um bem para a empresa ter funcionários que fazem múltiplas tarefas. É uma mais-valia para a empresa.

Como é que a Menzies e a TAP podem aprimorar a sua cooperação para melhorar a eficiência geral?

Para mim, a única coisa que eu posso dizer é que a TAP e a Menzies podem melhorar nesse momento é a melhoria na comunicação e na coordenação

Isto é, essas empresas podem fazer canais de comunicação mais direta, mais eficientes também, e uma das coisas que essas empresas podem também fazer é cooperar na formação conjunta de desenvolvimento de equipa.

Quando estou a falar de formação conjunta é implementar programas de formação conjuntas entre a Menzies e a TAP. Isso vai ajudar muito ambas as empresas, e ajuda também a garantir equipas que possam compreender plenamente as operações de uma e da outra.

Talvez se tiverem praticamente na mesma linhagem de pensamento, essa é que eu possa dizer em termos de formação, se fizerem a formação conjunta, isso é muito bom de que, por exemplo, a TAP fazer só formação da sua maneira e a Menzies estar também a formar da sua maneira. Assim depois na área de trabalho ou no campo de trabalho, cada um quer implementar os seus processos, e aí já vamos encontrar guerra e conflitos.

Já agora as questões que tem a ver com a Ground Force , já esclareceste, mas uma das das questões que eu tenho é: Quando entraste em 2021, encontraste os TRC`s da TAP.

Isso que eu lhe disse dos colegas que não sabiam que trabalho fazer até o dia é os TRC´s.

Atualmente praticamente um TRC já não é só TRC. Os turnaround coordenators já não são só, quer dizer, 2 dias, segunda explicação que a colega me deu só ficas a saber por exemplo, vais trabalhar hoje é domingo, por exemplo, vais na quarta-feira, já sabe se vais trabalhar mesmo com TRC, se não pode estar no HCC. HCC é a parte das operações na TAP que lida com as operações em Terra.

Quer dizer, toda a preocupação que está a se passar no handling, o TRC que está na aeronave faz a comunicação com a HCC, e a HCC é que procura resolver os problemas.

É por isso que eu disse que atualmente o TRC não é só TRC. Quer dizer hoje podes ser TRC, amanhã HCC. Assim como eu disse múltipla tarefa.

Consegues me dizer como é que os TRCs vos ajudam?

Olha, TRC para mim, conseguem nos ajudar em muitas coisas. TRC é como se fosse um elo de ligação. É aquele elemento que funciona como uma ponte de ligação entre nós e a empresa TAP. Imagina eu como uma TTE de placa e estou a fazer assistência de uma aeronave, e aquilo está com um problema, ou preciso de uma coisa vamos assim dizer, chefes de cabine informame, olha falta me aqui uma refeição, falta me aqui alguma coisa. Se não tiver TRC, é mais uma responsabilidade minha de comunicar o HCC informando o voo e tudo, olha, acabei de falar com as Chefes de Cabine e ele pediu isso, isso e isso.

Agora, se já o TRC no avião, a chefe de cabine se calhar nem sequer vai falar comigo.

Ele pode informar a TRC e TRC trata tudo.

Olha, em uma parte também vieram nos facilitar um pouquinho o trabalho. Porque eles são como um elo de ligação ou uma ponte para nós a Menzies ou a antiga Ground Force e a TAP.

Mesmo com a tripulação, comandante, copiloto, se tiver alguma inquietação, vamos assim dizer, precisa de manutenção no avião, e precisar dos mecânicos no avião, se tiver a TRC, e se o comandante não quiser falar via rádio com as operações, fala com a TRC, TRC pode ligar diretamente para a manutenção ou ligar para o HCC, HCC Liga para manutenção.

Quer dizer, sem TRC no avião, eu tenho que ligar primeiro HCC, depois, HCC faz a comunicação para o devido serviço que a gente está a precisar.

Então estás a me dizer que essa implementação por parte da TAP, a implementação dos Turnaround Cordenators foi uma implementação positiva?

É boa. Muitos podem estar contrários. Os mais velhos que já está lá que antigamente trabalhavam sem TRC. Mas para mim que encontrei os TRCs, eu acho bom e nos ajuda a não ter também muita carga de muita coisa a fazer, assim que eu possa dizer, não vou dizer que não vamos fazer nada, mas já nos tira um pouquinho algumas responsabilidades que nós poderíamos perder 2 ou 3 minutos a tratar de um determinado assunto.

OK Mister E3. Já esclarecestes as questões que eu queria ver esclarecido, Eu gostaria muito de agradecer-te por participar e fazer parte do meu estudo

Tranquilo Mano, estamos aqui para isso.

ANNEX 6. TAP TRC INTERVIEW SCRIPT [E4]

Data: 16/09/2024]

[Duração: 37min]

[Introdução: legitimação da entrevista]

Gostarias de começar por apresentar a tua pessoa, a tua experiência de trabalho e educação?

O meu nome é E4, tenho 24 anos, sou portuguesa nascida no Algarve, iniciei o meu percurso académico no ISEC Lisboa em 2019 para tirar a licenciatura de gestão aeronáutica e, passando assim depois para mestrado.

Também iniciei o meu curso profissional no aeroporto Faro. Trabalhei na empresa ANA e depois em uma companhia aérea que se chama Jet 2.

Passando aqui para Lisboa, trabalhei numa companheira chamada World2Fly e agora estou na TAP como turnaround coordenator.

Estás a trabalhar mais ou menos quanto anos nessa área?

Eu estou a trabalhar na áre da aviação desde 2016, sendo que tive uma, tivemos praticamente todos uma interrupção quando foi o impacto do COVID.

No entanto, eu trabalhava só durante o verão porque sendo aluna depois durante o inverno IATA, digamos assim, estava a estudar, portanto, fazia apenas o Verão. E agora, desde que entrei para a TAP, já trabalho o ano inteiro, é um trabalho fixo, já não é apenas verões.

A razão pela qual estamos aqui é o tema do meu trabalho, que é a Gestão de atrasos na TAP Airlines. Escolhi esse tema porque em 2018 TAP Airlines teve a pior média de

Portanto o que ele encontrou de importante são as mudanças que foram feitas na TAP durante 2018 que teve resultados positivos no ano 2019, onde a pontualidade da TAP passou de 58.4% para 63.9%. Mas daí já veio COVID que interrompeu tudo.

*Portanto o que estou a procurar agora é saber se as mudanças feitas em 2018 que produziram resultados positivos em 2019, ainda produzem resultados positivos, pelo menos em 2022 e 2023. Tipo, se continuaram a ter resultados positivos na gestão de atraso na TAP Airlines. Dito isso, eu não sei se já ouviste dizer alguma coisa sobre esse assunto já que estás aí há 1 ano e tal****. Começaste a trabalhar na TAP em 2023?***

Em 2023 sim.

Tens alguma referência sobre o que tinha acontecido em 2018, que resultou em implementação dessas mudanças, principalmente a implementação dos TRC no aeroporto de Lisboa?

É assim, eu também, pronto enfim, eu não sei exatamente quais são os parâmetros que conta para esse tipo de, para essa média de atraso, porque por exemplo, nós, isto agora já vai ter aqui alguns termos técnicos, mas nós temos o target of the block times, que é efetivamente a hora em que o avião está para sair de calços, significa que é hora de saída do avião do stand. No entanto, devido a um espaço aéreo que está muito saturado, a torre muitas vezes só autoriza o avião a sair muito depois desse target, desse tempo que o avião era suposto sair. Não sei se isto estará integrado nessa média ou não porque acho que esses atrasos têm vindo a piorar, porque cada vez é mais tráfego aéreo nê, cada vez está mais saturado, mais eu não sei se isso está na média ou não.

No entanto, posso dizer que realmente os TRC's, eu presencio isso diariamente no aeroporto, porque nem todos os voos, e é importante dizer isto, nem todos os voos conseguem-se estar cobertos por um TRC. Portanto, dada a quantidade de voos que há, nós acabamos por não ser assim muito. Portanto, nós conseguimos perceber que realmente fazemos um bocadinho a diferença, porque isto não é querendo vamos lá ver, as pessoas fazem o trabalho delas e tentam trabalhar para o voo sair á horas obviamente, mas nós temos um bocadinho uma noção se calhar do que é que pode atrasar, o que é que não pode atrasar uma rotação, onde

é que podemos ganhar uns minutos, porque muitas vezes um minuto é muito na aviação e nós temos plena consciência disso.

Às vezes as pessoas estão tão focadas no trabalho delas que precisam que esteja lá alguém a dizer lhes *olhe daqui a 2 minutos temos que começar a embarcar*, *daqui a, vamos precisar de*; pronto, ou seja, nós temos um bocadinho a solucionar problemas de forma a que depois não gerar atraso no final, de forma a estes problemas sejam resolvidos de raiz para não ir acumulando minutos na rotação, até porque os aviões têm rotações mínimas e depois têm, ou seja, o avião pode chegar às 8 da manhã e só sair se calhar às 2 da tarde. Portanto, aí à partida é mais fácil que, ou seja, é mais fácil trabalhar tudo para o horário que ele sai a horas. Portanto numa rotação há tempo suficiente para fazer tudo, não é preciso estar ali a «correr», para fazer uma rotação mínima. Enquanto que há aviões que chegam á Lisboa, e que desde o momento em que põe os calços até ao momento que é chamado APA, até ao momento em que retira cálcio para sair, pode fazer uma rotação só de 40 minutos, 45 minutos 50 e depois depende do tipo de aeronave.

Aí sim, essas relações já são mais desafiantes, requer uma coordenação muito importante de todos os serviços, na verdade.

Uma rotação existe uma série de serviço que têm de ser feitos para o avião sair com água, com combustível, com cating, tudo isso sempre. E, portanto, esse tipo de rotações de ação mais desafiantes, sinto que é nesse tipo de rotações que é mais importante nós estarmos e focarmos, porque realmente há muito serviço a acontecer ao mesmo tempo e às vezes aquilo requer uma coordenação mais miniciosa, que é mais exigente.

Quais as mudanças significativas nas operações de Turnaround ocorreram desde que começaste a trabalhar na TAP?

É assim, na nossa função em si não houve assim muitas alterações. As alterações que houve foi se calhar na forma como nos organizamos, porque quando eu entrei nós éramos alocados a um voo em específico ou até 2 ao mesmo tempo, às vezes fazemos 2 ao mesmo tempo. Portanto, havia uma pessoa que era responsável por nos alocar a voos, e ao longo do dia ia nos alocando a voos muito específicos. Já não é assim que nós funcionamos, o aeroporto é

dividido por plataformas, onde cada plataforma tem vários stands. Portanto, em cada plataforma estão parqueados vários aviões, e nós estamos responsáveis por uma plataforma.

Isto também deve se um bocadinho ao facto de sermos menos, a empresa acabou por diminuir um bocadinho o número de TRCS, então nós agora somos organizados assim, o que nos dá uma visão mais de gestão, de gerir ainda mais voos ao mesmo tempo, e de estar com um campo de visão mais aberto de tentar coordenar muita coisa ao mesmo tempo. Traz desafios obviamente de estar a coordenar aviões que saem à mesma hora é desafiante, mas a nível de função mesmo não tivemos assim nenhuma alteração. Ou seja, a nível do que é que fazemos num voo não se alterou muito não.

Disseste que a empresa diminuiu a quantidade de TRCs. Há alguma razão específica para isso ou simplesmente não há necessidade de ter tantos TRC's ?

É assim, se há necessidade ou não isto já remete um bocadinho a um campo de gestão, não é, portanto, quem tomou esta decisão, pode ter outra perspetiva. É claro que para nós que estamos ali no terreno é o número de quantitativos que temos agora como TRC é desafiante, e muitas vezes é muito complicado. Principalmente agora no verão, nós sentimos falta de ter mais gente efetivamente. Às vezes é muito desafiante estar a coordenar várias rotações, vários aviões ao mesmo tempo.

Quem tomou esta decisão e quem tomou também a decisão de nos colocar por plataforma e não direcionados a um voo, queria com isso, se calhar também que o handler passasse a ter mais responsabilidade sobre uma rotação.

Portanto nós temos um serviço contratado com um handler que nesta altura, portanto, agora hoje em dia tem o nome de Menzies, a Menzies tem a responsabilidade e está em CLA, ou seja, temos contratos com eles feitos em como eles têm que fazer a nossa rotação, ou seja, a porta de embarque é que embarca os passageiros, nós depois temos um chamado rampa agente que está lá e ele é que tem que coordenar, e nós supostamente, TRC só deveríamos estar ali um bocadinho para caso houvesse um problema é que nós intervimos.

No entanto, isto, a verdade é que não acontece bem assim, porque a Menzies obviamente também tem falta de pessoal, tem também muita acumulação de funções e muitas vezes nós

T RCS é que temos que acabar por fazer coisas que estão contratadas com esse handler, ou seja, não deveríamos estar a fazer essas coisas, deveria ser o handler, no entanto devido a capacidade ou se calhar, não tem aquela destreza de resolver problemas ou não resolvem tão rápido, nós estamos ali um bocadinho mais nesse apoio.

No entanto, por exemplo, agora no verão há muitas vezes que realmente é uma loucura, não é? Há muitos voos a saírem ao mesmo tempo e nós não temos muitas vezes capacidade de resposta porque não temos pessoas suficientes. Depois, no Inverno, é claro que isto baixa um bocadinho e se calhar aí até podem considerar que somos amais ou que estás amais na operação.

Mas eu diria que isto é um bocadinho, obviamente que o trabalho de um gestor há de ser sempre tentar fazer mais e com menos recursos, nê?! Tentar rentabilizar as coisas, então é um bocadinho a visão que acabam por retirar pessoas como em todo lado.

Então o que estavas a dizer basicamente é: há um determinado número de TRC's e esses TRCs não foram demitidos, mas sim foram recebendo diferentes funções. É isso?

É assim, não. Obviamente que houve pessoas a sair da empresa, mas também lá está, também eram pessoas a contratos. Ou seja, enquanto lá estou, saiu efetivamente pessoas muitas delas por arranjarem novos trabalhos, portanto, também quiseram sair, saiu pessoas que se calhar não adicionavam tanto valor à empresa. O contrato terminou e não foram renovados. Pronto, acho que é um bocadinho a normalidade, não é? Enfim foi diminuindo, mas foi uma coisa muito, muito enfim natural vá.

Quais são os desafios mais comuns que você enfrenta durante o processo de Turnaround que resultam em atrasos no teu dia a dia?

Posso enumerar aqui um milhar de imensos desafios. É assim, isto eu acho que isto também já vai um bocadinho pela minha opinião, não é.

Como era há bocadinho os voos que apresentam mais atrasos ou que eu noto que atrasa más e que tem de estar lá mais presentes, são voos de rotação curta. Há muitas vezes em que

realmente a rotação é fazível naquele horário que está destinado, mas também é muito difícil, principalmente quando o avião está cheio, quando há muitos passageiros, há muitos problemas para resolver, e é um bocadinho difícil.

As rotações curtas são assim um bocadinho, desafiantes e, portanto, isso logo aí é um grande entrave para que o avião saia à hora que estava programada. Nós também temos, vou te dar assim exemplos, o que é que mais acontece.

O avião muitas vezes já chega á Lisboa tarde, então logo aí é claro que ele vai sair mais tarde, porque pronto, saiu tarde de outra escala. Por exemplo, vem de Amesterdão, já saiu lá com 1 hora de atraso, é claro que ele aqui já vai chegar atrasado. Pronto isso conta como delay.

Depois, por exemplo, muitas vezes, por exemplo, eu vou rodar um avião para Londres, mas a minha tripulação ainda não chegou á Lisboa e está a chegar de Madrid. Só que o avião se atrasou em Madrid, a tripulação chegou atrasada, portanto vai chegar atrasada ao meu avião, portanto eu vou ter que quem marcar mais tarde isso também delay.

As tripulações também muitas vezes os timings que eles têm para fazer os checks deles e os procedimentos deles também ou não chegam ou as tripulações acabam por se perder um bocadinho, enfim no tempo.

Então isso muitas vezes também nós, ou seja, nós estamos ali a coordenar uma rotação, no entanto, é sempre a tripulação que dá aquele OK, os passageiros podem avançar, nós já estamos prontos e, portanto, nós somos sempre muitos dependentes do tempo que eles demoram a ficar prontos e isso também é um grande desafio para nós, porque nós muitas vezes conseguimos aperceber que o voo já está a atrasar, no entanto, se a tripulação não está pronta, obviamente não podemos embarcar.

Depois, muitas vezes os serviços também falham, por exemplo, as equipas de limpeza, pode haver um dia em que sejam menos pessoas ou que tenham muitos aviões, chegam atrasados à nossa rotação, aí já atrasa. Os passageiros também muitas vezes principalmente quando são aviões cheios, também é um embarque muito lento. As pessoas não têm aquela pressa, entre aspas, de entrar no avião, colocar a bagagem, sentar logo. Estão ali um bocadinho digamos, a engonhar, não é?! entrar devagarinho, falam com a tripulação, e depois entram. Lá está mais uma vez, principalmente em rotações curtas, isto vai contando tudo, minutos, minutos, vai adicionar minutos e depois já é um bocadinho difícil acabar, pronto enfim, fechar portas a

horas e sair a horas. Depois, outro grande desafio que lá está também, que contribui muito para os atrasos, é efetivamente o congestionamento de espaço aéreo que não deixa sair o avião. Quer dizer, às vezes há cenários em que aviões só saem 1 hora depois do horário, apesar do avião estar fechado, estarem embarcados, estar tudo pronto para sair, mas o avião tem que ficar durante muito tempo no chão. Portanto, está bem, sítio de tratamento à espera de que as torres imitam uma autorização para ele sair. Realmente temos imensos atrasos.

Dirias que a razão principal pela qual a TAP teve a percentagem de pontualidade que teve em 2018 foi por causa da sobrecapacidade do aeroporto de Lisboa, e dirias que os standards do aeroporto contribuem de alguma forma para os atrasos no seu trabalho?

Vamos lá ver, esses são entidades diferentes. A torre de controlo não é aeroporto, é nave. Não faz parte do aeroporto, portanto, ou seja, estou a tentar separar para não me entenderes mal. A torre de controlo não é a responsabilidade do aeroporto.

Mas sim, isso contribui muito para os atrasos. Lá está, essas médias que tu viste, eu não sei se eles contam desde minuto em que o avião inicia uma rotação até ao minuto em que fecha portas, ou até ao minuto em que ele descola.

Se é o minuto em que ele descola sim a nave, ou melhor não é a nave, mas sim o espaço aéreo, e está saturada. Porque às vezes também não é só aqui em Lisboa, é o hemisfério europeu que também está muito saturado e muitas vezes só há autorizações para sair mais tarde, ou porque o espaço aéreo está saturado ou porque os outros aeroportos não têm como nos receber. Mas, por exemplo, às vezes há um avião aqui em Lisboa que não pode sair e porque, por exemplo, em Madrid, àquela hora que era suposto ele aterrar não dá. E, portanto, eles vão dizer, OK, olha, só podes aterrar a X horas, então ele acaba por sair daqui, porque senão eu iria estar a gastar muito combustível no ar e isso não faz sentido, não é? E, portanto, ele acaba por sair de Lisboa muito tarde porque só é Vago entre aspas para ele poder aterrar e parquear no aeroporto de destino X minutos ou x horas depois. Portanto, realmente sim, o espaço aéreo, o controlo de tráfego aéreo e tudo isto tem muito impacto. Tem muito impacto porque é como eu estou a dizer, muitas vezes nós já temos o avião pronto fechado as portas

todas fechadas pronto a sair, o avião não pode sair porque tem, enfim, ou seja ela qual for, há vários tipos de limitações, ou é em rota, ou é à chegada ou é à partida, pronto enfim.

E em termos de coordenação e eficiência como é que vocês os TRCs coordenam com os outros departamentos, por exemplo, outras equipas, como assistência de terra, IOCC para melhor gerenciar o tempo de turnaround?

Pronto é assim. Eu como TRC eu estou muito presente na Operação, eu estou no terreno, eu estou efetivamente no avião, portanto tenho que falar com a tributação de cockpit, com a tributação de cabine, com o colega do catering, que chega ao stand e tem que enfim, carregar o catering a partir do camião, com os colegas da limpeza, com o colega de combustível, portanto, eu sou o ponto de contacto entre todos estes serviços. Eles é assim, esses serviços já estão muito automatizados, eles não chegam à stand e eu tenho de dizer, olha, tu agora fazes isto! Não, eles já sabem o que é que têm de fazer. No entanto, há vezes em que pode haver algumas alterações, ou se um serviço pode chegar um bocadinho mais tarde, um bocadinho mais devagar à rotação, eu já vou ter que me organizar de outra forma para não, por exemplo, se o catering ou a limpeza chega mais tarde ao avião! OK, então eu não posso começar a embarcar as horas que era suposto, portanto, tenho que ligar para a pessoa que está na porta, que é da Menzies, não é TAP, e tenho que dizer, eles não podem sair já da porta que é para não ficarem nos autocarros ao sol e pronto à espera que o avião fique pronto. Portanto, é esta capacidade de coordenação que eu tenho que ter, é tentar perceber, OK, este serviço vai atrasar, então eu vou ter que parar o embargo, por exemplo, ou olha, a tripulação não está ainda no avião, eu vou suspender um bocadinho o embargo, porque obviamente não podemos embarcar sem a tripulação. Ou então o aero-abastecidor chegou mais tarde ao stand para começar a abastecer o avião, então, o que é que eu vou pensar, OK, é possível fazer embargo com abastecimentos, não há qualquer problema. No entanto, eu preciso de reunir as condições de segurança. Preciso de ter o espaço à volta livre para que eu consiga ter uma saída rápida, preciso de trazer o pintor, preciso de avisar a coordenação de aeródromo, portanto, o aeroporto que vamos fazer um é chamado o embargo de abastecimento, preciso de fazer um contacto visual com o comandante para, e, preciso de estar atento aos passageiros e ao avião em si para ver se não há nenhum derrame de combustível ou o que seja um incêndio,

o que seja. Portanto, nós temos que ser muito flexíveis, temos que falar com todas estas entidades vá, com todas estas empresas, até porque é tudo empresas diferentes. Quem faz o computador é diferente. Quem faz o catering é diferente. Quem faz a limpeza, são tudo empresas diferentes. Tenho que estar também, pode haver às vezes algum problema com o carregamento do avião, uma bagagem que está a tremer ou que ou que não trouxe etiqueta e, portanto, eu tenho que tentar resolver isso, ou a bagagem que se calhar ainda não chegou ao stand, já está a pôr em causa a pontualidade do voo e, portanto, eu tenho que ligar e tentar perceber onde é que está a bagagem. Portanto, nós temos uma presença muito grande no terreno.

Estamos lá fisicamente mesmo, nós não estamos a coordenar as coisas através de um computador. Nós estamos mesmo lá, eu acho que isso é muito importante porque nos dá uma perceção exatamente do que é que se está a passar.

Porque se nós estivéssemos numa sala de coordenação, se a tripulação, por exemplo, vêem um problema no avião e tem que chamar a manutenção, o comandante, se calhar vai primeiro falar com a tripulação, para depois chamar à manutenção, depois tenta resolver e a última coisa que ele se vai lembrar é de dizer à coordenação é, olhem, não podemos ainda embarcar porque tem um problema no avião. E nesse sentido é importante eu estar lá, porque eu consigo obter essa perceção e eu é que tenho logo a preocupação, porque lá está, nós temos uma perceção e preocupações muito diferentes da tripulação, a tripulação muitas vezes…

Não tem noção do que é que se passa, não é?

Não tem noção e acaba por se perder um bocado; ou seja, se eles vêem um problema no avião, eles não pensam logo tenho já parar o embarque que é para os passageiros não virem para o avião. Quem vai pensar nisso sou eu.

E então é importante nós estarmos lá para tomar logo medidas, para agir logo que é para aquele não escalar.

Se não há logo esta ação os passageiros vão para o avião e depois estão lá imenso tempo dentro dos autocarros. Portanto, cria-se situações um bocadinho complicadas. Vá.

E em termos de recomendações, pela tua opinião obviamente, quais sugestões você tem para melhoraria de processos de Turnaround, para melhor gerenciar os atrasos e irregularidades na TAP?

Uma dessas se calhar é mais mão de obra, não?

Sim, obviamente que isso ajuda sempre nê. Quer dizer isso, quando existe a mão-de-obra, recurso, recurso em geral suficientes, isso quebra logo ali um bocado aquela tensão não é, de estarmos sempre a correr de um lado para outro e que é muita coisa ao mesmo tempo.

O que é que poderia melhorar? É assim. Na minha opinião outra vez, isto não é nada que esteja (*não se consegue aperceber o que ela disse*), eu acho que muitas vezes a nossa relação com, por exemplo, com a tripulação, não é geral. Obviamente que há muita gente que trabalha bem, mas a tripulação tem alguma dificuldade em se calhar comunicar connosco ou perceber o nosso lado. *Eu acho que se trabalhássemos mais em equipa,* ou seja, eu às vezes tenho a sensação de que há algumas tripulações que acham que nós quase parecemos de empresas diferentes. É quase isso. Eu sinto que se houvesse ali uma melhor comunicação, trabalhássemos mais em equipa, isso iria ajudar.

Depois, mais coisas. Eu acho que isso é um bocadinho difícil vá, porque o que acontece é que há muita coisa que é implementada, que na teoria funciona, mas depois, na prática, as coisas não se verificam assim porque as pessoas às vezes, ou por falta de mais, principalmente do nosso handler, ou podem não conseguir, como é que eu ei de dizer, podem não conseguir implementar ou mostrar os resultados que eram pretendidos, digamos assim. E eu acho que há um problema, um bocadinho estrutural na empresa na TAP. Há aqui coisas que eu estou assim um bocadinho a medo de dizer né.

Podes dizer o que quiseres, vais ter confidencialidade. Está tudo bem.

Sim, mas, pronto às vezes eu estou lá á um ano e meio, há muita coisa, ainda que que eu…

Por isso que é apenas a tua sugestão. É uma opinião.

Há um problema um bocadinho estrutural, principalmente a nível de gestão. Há muitos procedimentos que são criados por pessoas que não estão no terreno e que, se calhar, não têm uma compreensão muito adequada do que é a operação, e acabam por criar procedimentos que, se calhar, não fazem tanto sentido e depois causa impacto no meu trabalho enquanto coordenadora. E na rotação da aeronave, acho que poderia haver uma, como eu disse há bocadinho, uma união de equipas e se trabalhássemos todos para o mesmo. Acho que também existe muita fatiga ali haa hmn, as tripulações porque há muita falta de tripulações, aliás isto é algo público. Toda a gente tem conhecimento disto na TAP, há muita falta de tripulantes, portanto, há uma fatiga muito grande também da parte deles. Muitas vezes eles estão já a voar muito cansados e isso acaba depois por também notar se na rotação, porque eles fazem as coisas mais devagar, estão ali mais, é mais difícil também, portanto, e não é só a nível deles. Nós ali também no aeroporto estamos um bocadinho, pronto enfim, fatigados, não é? (As pessoas depois começam) á uma desmotivação muito grande, e aquilo são ambientes em alta pressão para estar sempre a correr contra o tempo, pois todo o tempo é precioso e, portanto eu digo esta pressão, esta tensão que há ali muitas vezes também acaba por se notar nas rotações, porque as pessoas quer dizer, ás vezes há certas respostas que eu recebo, principalmente das tripulações quando eu digo comandantes ou chefes, chefe de cabine olhe, estamos em cima da hora para começarem a embarcar e a resposta é um bocadinho, acaba por ser um bocadinho, isso não faz mal ou é quando nós tivermos, é quando nós quisermos e isso pronto acaba por atrasar um bocadinho.

O facto da Menzies também a antiga ground force, também não ter todos os recursos que nós gostaríamos, muitas vezes também acabam por nos atrasar por certas coisas, ou porque não ligam a energia horas, ou porque em vez de termos 2 escadas para embarcar, só temos uma, ou porque o Placa que é a rampa agente, que é quem trata do carregamento do avião, chegou atrasado e já começou a carregar tarde, ou a bagagem que chegou tarde do terminal, enfim.

Há uma série de coisas que poderia melhorar, mas eu acho que já faria grande diferença se fosse isto esta fatiga, se fosse uma gestão mais …porque muitas vezes só se pensa na gestão eficiente, e menos recurso e fazer mais, e acabamos por nos esquecer um bocadinho que isso

depois tem muito impacto, e as pessoas depois andam um bocadinho contrariadas e acabam por não fazer o seu trabalho como era expectável.

Como é que a TAP pode dar suporte ao trabalho de TRC's, no sentido de como pode melhor vos ajudar a trabalhar?

Eu acho que se calhar a nível de formação, e acho que isso já é algo que está a ser trabalhado. Nós temos uma formação específica para tornar coordenator. No entanto, há outro tipo de formações de sistemas ou assim que nos poderão ajudar a ser ainda mais eficientes e a resolver mais problemas. Também se calhar isto é algo que já está a ser implementado, mas que ainda não foi feita ou pelo menos já foi falado que é: nós irmos, por exemplo, durante um dia visitar outras áreas para perceber como é que elas, quando eu digo outras áreas, são outras áreas dentro da TAP, não é outro serviço, termos as dores entre aspas da coordenação ou das tripulações, também para percebermos que papel é que cada um tem e como é que funciona. Depois se calhar, pronto, a nível de recursos, obviamente que ajuda sempre também esse apoio, mas eu diria que passa um bocadinho mais por formação, não formação da nossa função, mas formação de outras áreas ou de outras coisas. É assim, eu acho que não há assim nada que se calhar pronto há muitas empresas e eu também já tive que têm mais, fazem mais aquelas como estou a dizer atividades para motivar, para trabalhar, saber trabalhar em equipa que acho que é uma coisa que está a faltar muito na TAP, saber trabalhar em equipa, relação com os colegas. A nível da nossa liderança, vá saber liderar no sentido saber motivar, saber falar com as pessoas, eu acho que isso é um grande impacto, depois em nós também eu pelo menos sinto falta disso.

Muito obrigado, por tirar o teu tempo para falar comigo sobre esse assunto.

De nada. Se precisares de mais alguma coisa estou disponível.

ANNEX7. MAXQDA USAGE ILLUSTRATION

In this dissertation, MAXQDA played a crucial role in the qualitative data analysis process. As a powerful software designed for qualitative and mixed-methods research, it facilitated the systematic coding and organization of the data, allowing for a more structured and insightful analysis.

We primarily used MAXQDA to code the documents under analysis, which involved identifying key themes, patterns, and categories within the text. By assigning codes to relevant text segments, we were able to classify and organize the data efficiently, making it easier to draw meaningful connections. The software's coding features helped ensure consistency and rigor in the analytical process.

Additionally, MAXQDA allowed us to extract coded text segments for further categorization. This function was particularly valuable in grouping related themes and refining our analytical framework. Below is a photo illustrating the use of MAXQDA software in our research

Figure 5- MAXQDA Illustration. Source: MAXQDA software