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# Role of Airports' Tangible and Intangible Features as Alternate Sources for Retail Revenue Generation – A Study of Karachi Airport in Pakistan

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*The airline industry is among those industries that deal with a large number of customers for the purpose of travelling. However, COVID-19 impacted the revenue streams of the airline industry as travelling by air observed a significant decline. Since airports are an important element of airline operations, they were more affected than airlines as their revenue streams were mainly generated from different consumer spending and rental services. It was realized during COVID-19 that the diversification of revenue streams played a vital role in airports' sustainability and self-sufficiency. This study aims to determine the role of airports' tangible and intangible features as alternate or additional sources of revenue and observe the mediating role of customer satisfaction. After a careful literature analysis and flipping over various studies, it appears that a lot of research is done on the contribution of the non-aeronautical revenue towards the financial stability of airports, but no study focuses on the role of airport physical features on airport retail revenue and how it can affect airport revenue streams. Therefore, this research study aims to analyze the mediating impact of Customer Satisfaction on the relationship between Airport Environment factors and Airport retail Revenue. Cronbach's alpha, Reliability, discriminant validity, SD. analysis is used for analysis. The result shows that airport environment and airport design have a significant positive impact on airport retail revenue, while the result also shows that the airport facility has a weak relation with airport retail revenue. It is evident from the results that airport environment and airport design, with an indirect effect on customer satisfaction, can increase the airport retail revenue.*

## 1. Introduction

Airports have transformed into autonomous corporations in the last few decades and have especially gone through a drastic evolution after the COVID-19 pandemic. To maintain sustainability and self-sufficiency while maintaining the operational standards and safety protocols, airport operators need to be very much focused on all direct and indirect. As per the growing demand of LCC everywhere, airports again need to be refocused on their revenue streams in order to provide subsidized services to the LCC operators and other airlines as well which are facing extreme competition and economic threats (Volkova, 2009; Kirpotin et al., 2021). Airports face pressure from airlines to control aeronautical costs, such as landing fees, while competing for passengers (Graham, 2018). The Covid pandemic and government-imposed lockdown also adversely impacted the airport retail sales. This puts pressure on airport operators to look for alternative sources of revenue, including non-aeronautical sources such as retail, advertising, and real estate development. The governance structure and ownership diversity also lead to managerial attention toward the airport's commercial returns and other non-core activities to maintain the self-sufficiency of airports (Oum, 2008; Phuyal, 2023). It has been proved that airports that went through business model diversification achieve higher operating efficiency (Tovar, 2009). By investing in these areas, airport operators aim to diversify their revenue streams, reduce their reliance on aeronautical revenue, and achieve financial stability. Airport operators should focus on improving their financial situation by diversifying their revenue streams. Airports must be competitive, responsive to customer requirements, and provide added value. With fuel price volatility, shrinking air service and pressures on airport budgets, only the most business-savvy and agile airports will be sustainable in the future (Everett Jr., 2014; Brown, 2023).

This study focuses on airport planning and its implications on retail revenue. To influence customer spending, airports need to be attractive. To remain profitable and competitive, airport management needs to focus on all activities, including non-aviation activities, which are the lifeline and contribute to non-aeronautical revenues of airports (Volkova, 2009). Non-aeronautical revenue comprises airport-related facilities and services. These services mainly include food and beverage, retail shopping, car rentals, parking, leasing real state and advertising (Mappedin, 2023). In the service industry, customer decision patterns and spending patterns are highly influenced by physical evidence such as its environment, design and facilities (Mostafa, 2021). Airports can increase revenue by providing various amenities and services that cater to passenger needs and encourage spending. It is important to identify the facilities that can enhance the airport's infrastructure, improve passenger experience and increase revenue.

The role of strategic design and thoughtful layout of airport facilities cannot be overstated. As HOK (2018) and Ricardianto (2023) suggest, the architecture, ambiance, and tangible elements of an airport significantly influence passenger perceptions and spending decisions. For Jinnah International Airport, this implies a meticulous focus on enhancing the aesthetic appeal, functional efficiency, and overall ambiance of the terminal spaces. The design should not only reflect the rich cultural heritage of Pakistan but also embody the aspirations of

a modern, progressive nation, thereby instilling a sense of pride and satisfaction among passengers.

Moreover, the integration of digital technologies and innovative retail concepts can further augment the revenue potential. The digital transformation of retail experiences, offering convenience, personalization, and a wide array of choices, can redefine the way passengers interact with airport services. This digital leap, coupled with a strong emphasis on customer service excellence and feedback mechanisms, can propel Jinnah International Airport towards achieving its vision of becoming a world-class airport, celebrated not just for its operational efficiency but also for its passenger-centric approach and vibrant commercial offerings. Despite the strategic efforts and the potential for growth, a significant gap exists in the empirical understanding of how airport environments, specifically in the context of Pakistan and Jinnah International Airport, influence passenger behavior and retail spending. The literature, while providing insights into global trends and passenger preferences, lacks depth in context-specific studies that address the unique socio-economic, cultural, and operational dynamics of Pakistani airports.

According to the Precision Report 2023, there is too much potential in non-aeronautical revenue of airports around the globe. The report presented an anticipated forecast for the period of 2023 – 2031. This report mentions that the current market size of global non-aeronautical revenue is valued at USD 112523.9 million in 2021, with an expected expansion at a CAGR of 8.7%, reaching USD 185659.0 million by 2027 (Report, 2023).

The potential for retail revenue enhancement at Jinnah International Airport is significant, especially when considering the broader trends in consumer spending and retail dynamics within airports globally. The Precision Report (2023) underscores the lucrative prospects of non-aeronautical revenue, projecting substantial growth in the coming years. This forecast aligns with the strategic vision of the PCAA, which is keen on tapping into these revenue streams by revitalizing the airport's retail landscape. The introduction of branded retail outlets and significant food outlets is a step in this direction, reflecting a commitment to not just meet but exceed passenger expectations, thereby fostering an environment conducive to spending and satisfaction (Aviation, 2022-2023).

However, the journey towards realizing this vision is fraught with challenges, particularly in understanding and effectively responding to the nuanced preferences and behaviors of passengers. The literature, while offering insights into passenger spending behaviors in relation to terminal layouts and airport ambiance, presents a gap in context-specific studies, especially for airports like Jinnah International. Researchers such as Adey (2007), Davies (1995), Livingstone (2014); Livingstone and Blum-Ross (2020) have laid the groundwork, but there remains a need for empirical studies that delve into the unique socio-economic and cultural contours shaping passenger experiences and expectations in Pakistan.

The literature, while providing insights into global trends and passenger preferences, lacks depth in context-specific studies that address the unique socio-economic, cultural, and

operational dynamics of Pakistani airports. This gap underscores the need for a comprehensive study that not only explores the influence of physical evidence on passenger buying behavior but also contextualizes these findings within the specific setting of Jinnah International Airport. The problem, therefore, lies in the lack of detailed, empirical data that can guide the strategic enhancement of non-aeronautical revenue streams, through a concerted focus on design, passenger experience, and innovative retail strategies in the unique context of Pakistan's aviation sector. Addressing this gap is imperative for realizing the full potential of non-aeronautical revenue streams and ensuring the sustainable growth and competitiveness of Pakistani airports in the global aviation landscape.

### 1.1 Research Questions

The strategic enhancement of non-aeronautical revenue streams, through a concerted focus on design, passenger experience, and innovative retail strategies, stands as a pivotal agenda. The realization of this agenda not only promises financial sustainability for the airport but also contributes to elevating the airport’s image on the global stage, showcasing its commitment to excellence, innovation, and passenger satisfaction. By virtue of the given arguments, the current study needs to answer the following question:

1. What are the features of the environment that develop the spending intention of the passengers?
2. How do facilities of airports develop spending intentions for the passengers?
3. Why is the design of the airport, including retail shops, important for developing spending intentions in passengers?

## 2. Literature Review

Physical evidence is crucial for service providers as it serves as tangible proof of the service being delivered and helps in shaping the overall customer experience. It includes the physical environment, facilities, and tangible elements that customers interact with when receiving a service. The importance of physical evidence in service delivery is highlighted in the services marketing literature. The "servicescape" framework, introduced by Bitner (1992), emphasizes the impact of the physical environment on customer perceptions and behaviors. The framework suggests that the physical evidence, such as the design of the facility, layout, cleanliness, and comfort, significantly influences customer satisfaction and loyalty.

Moreover, in the context of service quality, the SERVQUAL model, developed by Parasuraman, Zeithaml, and Berry, includes "tangibles" as one of the five dimensions of service quality. Tangibles refer to the appearance of physical facilities, equipment, personnel, and communication materials. The model emphasizes that customers use physical evidence as a cue to evaluate the quality of a service. Additionally, research by Wakefield and Blodgett (1996) found that physical evidence significantly influences customer perceptions of service quality, satisfaction, and behavioral intentions. Customers often use the physical environment as a basis for forming opinions about the service provider and the service itself.

In conclusion, physical evidence is essential for service providers as it influences customer perceptions, satisfaction, and loyalty. It serves as a tangible representation of the service being delivered and significantly impacts the overall customer experience.

### 2.1 Airport Retail Revenue

Retail sales play a significant role in airport non-aeronautical revenue and have increased with changes in terminal design and shopping habits. Most airport revenue comes from the aviation sector, such as terminal rental, landing fees, and charges for gates, terminals, services, and passenger counts. U.S. airports generated $10 billion in aeronautical revenue, 55% of total revenue, in 2013 according to FAA. Airlines pay rent for counter/gate space, offices, hangars, training centers, storage, maintenance centers. Also pay landing, parking, and lease fees for reserved location near ticket window/entrance.

In 2013, 45% of aeronautical revenue came from terminal fees, rents, utilities. Landing fees made up 30%. $11.88 aeronautical revenue per passenger was generated by airports. Passenger-based charges are increasing as aviation revenue. Airports are focusing on non-aeronautical revenue to mitigate airline economic cycle volatility. Parking, ground transportation, rental cars are main revenue sources. Airports have two advantages in generating retail/concession revenue. ACI poll shows most airline passengers have higher purchasing power (median household income $75K-$90K in 2013 vs. national norm of $52K). Stricter security regulations post-9/11 result in travelers spending more time at airport terminals, increasing retail/concession opportunities.

The key principle to increase non-aeronautical revenue is to increase retail revenue (Wiroonrath, 2023). Major sources of non-aeronautical revenue are retail, rental services and parking services. Revenues from retail activities holds a major share of about 33% followed by 8% through parking facilities and 8% through vehicle rental services. This can be further supported from the ACI 2020 report that during the Covid airports around the world face revenue decline so as their non-aeronautical revenue. This report further shows that retail concessions dropped as low as -65% with the decrease in passenger volume. These facts stipulate to focus on airport environmental design and aesthetics to encourage passenger experience and to nurture passenger retention for financial stability (Kalakou, 2021). Passenger expenditure can be influenced by improving the tangible characteristics of airport. The lay-out of shopfronts, environment (smell and sound), designs (architecture) are the key characteristics of tangible features of airports (Ricardianto, 2023) .

Global Airport retailing research shows fashion and beauty sectors are expected to grow the fastest, with more clothes merchants launching airport outlets. Airports can generate revenue in small spaces with “upscale vending machines”, as well as through business expansion, advertising, etc. Airports make money by selling advertising space, creating branded areas, and hosting sponsored events, which can boost operating revenue while improving airport atmosphere and the traveler experience. This shift towards non-aeronautical revenue sources has allowed airports to diversify their income streams and reduce their dependence on the often-volatile airline industry. The focus on passenger comfort and

experience has resulted in an increase in revenue from retail, concessions, advertising, and other non-aviation activities.

### 2.2 Airport Environment and Retail Revenue

Comfortable and relaxed environment can encourage passengers to spend more, but unfamiliarity with the airport can decrease spending. Design elements such as curved corridors, use of light-colored materials, store atmospherics, and warm lighting can help create a welcoming environment and boost retail sales and air travel.

To enhance the passenger experience, airports are continuously investing in their retail and concession spaces, incorporating new technology and innovations to attract travelers and increase revenue. Airports have a significant impact on the local economy and employment. The environmental costs associated with operating airports are linked to the socioeconomic benefits they provide. The increasing demand for passenger and cargo air travel is expected to drive growth in the aviation industry. The expansion of the aviation industry is expected to continue, which will result in increased incentives and pressures for the creation of new airports or the enlargement of existing ones. This will increase the importance and complexity of environmental and sustainable development.

Airports face environmental challenges in balancing their economic benefits and environmental sustainability. Regulations aim to reduce the environmental impact of aviation activities and enforce environmental standards to ensure sustainable airport development. These caps and quotas ensure that the environmental impacts of aviation activities are minimized and that the airport operations are sustainable over time. They also help to balance the airport economic growth and environmental protection goals.

### 2.3 Airport Facility

Landside facilities at the airport, including passenger and freight terminals and ground access, are inadequate. Passengers face long lines and wait times due to unscientific airline check-in arrangements. There is a shortage of amenities such as restaurants and waiting areas and limited retail options with high prices. The location of airport retail concessions, including food and beverage outlets, affects their success. Corner locations are common to attract passenger traffic and increase browsing, but convenient locations can increase sales. Key factors for passenger satisfaction and profitability are brand image, price point, and product quality. Offering products that meet traveler needs can enhance the airport retail reputation and revenue.

Airports in order to compete and sustain in the market must improve their tangible aspects of facility. Customer seeks those tangible evidence as an assurance of service provider and built trust to take current and future decisions (TutorChase, 2024)

### 2.4 Airport Design

Studies show that airport retail revenue increases with more space allocated to retail. It also important to utilize existing terminal space effectively to increase revenue. Shops with larger retail space create a shopping center-like appearance and a broader commercial offering

increases the chances of passenger shopping and food and beverage consumption. (Graham, 2009; Torres et al., 2005; Manzano et al., 2018).

Increased passenger traffic results in greater economies of scale and more retail opportunities, boosting aggregate retail revenue for airport retailers. (Fuerst & Gross, 2018; Tovar & Cejas, 2009). However, a rise in passenger traffic can also reduce non-aviation revenue per passenger and per square meter if it makes it difficult for travelers to find suitable and convenient shopping locations. (Fasone et al., 2016). Classifying travelers as business or leisure is important. Freathy and O'Connell (1998a) found that airports categorizing passengers based on travel purpose revealed different shopping behaviors.

### 2.5 Passenger Satisfaction

Studies show that customer satisfaction has a significant impact on how a business is perceived by consumers. An airport can offer many non-aeronautical related amenities and facilities to improve the travel experience and distract passengers from waiting for their flight. The most popular amenities in the terminal include shops (including duty-free), restaurants, cafes, bars, travel information, land-based transport information, waiting areas, rooms for mothers and children, accessibility for people with disabilities, lost and found department, medical assistance, ATMs, banks, and post offices.

### 2.6 Pakistan Aviation and Karachi Airport

Pakistani Airports to take advantage of the expected growth of non-aeronautical revenue must ensure customer support policy to gain consumer confidence to influence their spending decisions. It would not be wrong to say that airports hold the power of first impression. Airports are the first door of the region as well. To excite the customer feelings and their confidence, airport terminal design and architecture plays a strong role (HOK, 2018)

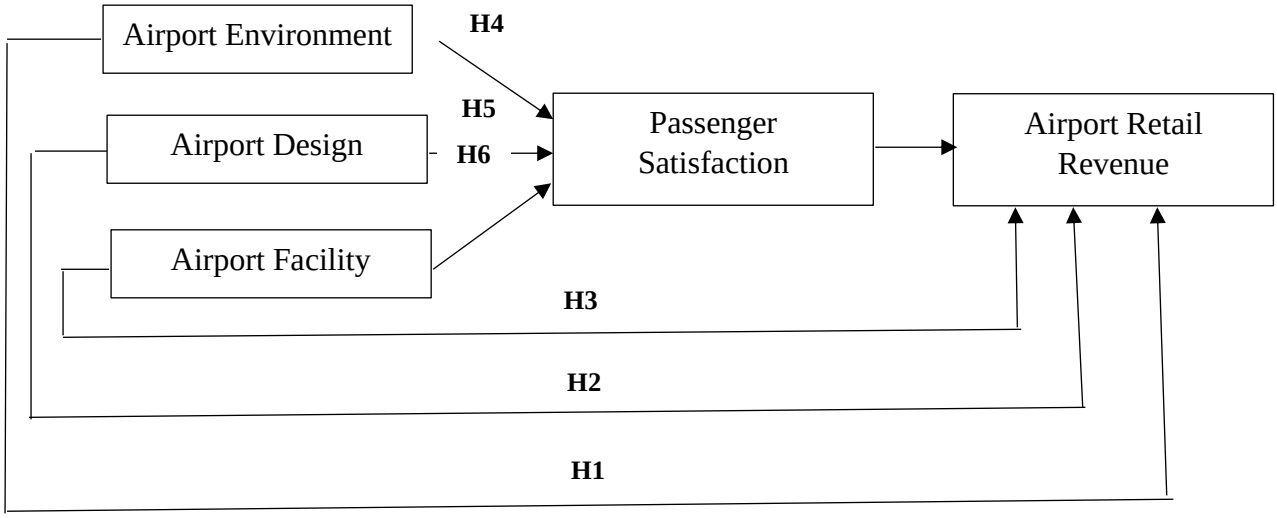
In Pakistan, the aviation sector, particularly the landscape of airport operations, has been undergoing a transformative journey, with Jinnah International Airport in Karachi standing as a testament to this evolution. The airport, serving as the primary gateway to Pakistan, not only bears the responsibility of managing the influx of passengers but also encapsulates the challenges and opportunities inherent in the country's aviation industry. The strategic importance of non-aeronautical revenue streams becomes even more pronounced in this context, where traditional revenue models are continuously being challenged by market dynamics and consumer behavior shifts.

Jinnah International Airport, despite its critical role in the nation's air transport infrastructure, has faced scrutiny and calls for enhancement, particularly in terms of passenger experience and commercial offerings. The two-star rating by Skytrax (2024) not only highlights the areas needing improvement but also sets a clear agenda for the airport's management to elevate the standards of facilities, retail options, and overall passenger services. The Pakistan Civil Aviation Authority (PCAA), recognizing these imperatives, has been actively working towards modernizing the airport's infrastructure and service portfolio, aiming to transform the passenger experience from a mere transit interaction to a more engaging and satisfying journey (Aviation, 2022-2023).

### 2.7 Research Framework and Hypotheses

***H1: Airport environment will have a positive effect on airport retail revenue.***
***H2: Airport facility will have a positive impact on airport retail revenue.***
***H3: Airport design will have a positive effect on airport retail revenue.***
***H4: Customer satisfaction will have a positive mediating impact on airport environment and airport retail revenue.***
***H5: Customer satisfaction will have a positive mediating impact on airport facility and airport retail revenue.***
***H6: There is mediating effect of customer satisfaction on the relationship between airport facility and airport retail revenue.***

**Figure No 1: Conceptual Framework**




## 3. Research Methodology

### 3.1 Research Philosophy and Approach

This statement describes the first layer of the research onion. the research philosophy being employed in this study is positivism, which means that the research is dependent on collecting and analyzing objectives. Empirical data from airport users, i.e. passengers. This study aims to use quantitative methods to analyze data and to uncover objective, generalizable knowledge about airport users' experience.

The research approach used in this study is the deductive approach. This approach tests theories, whether they are relevant or not, by deducting the false theories. This approach allows the researcher to observe the subject and to explain the problem of an area. We used a deductive approach where the relationship between the factors discussed in the study can be represented by using numerical analysis.

### 3.2 Research Design and Data Collection

For the purpose of survey research, questionnaires with variables were designed to complete survey research. By using a questionnaire as a data collection instrument, the study will have quantitative data, which are based on a five Likert scale: strongly disagree, disagree, neutral, agree and strongly agree. However, the questionnaire allowed collecting data from a large number of participants in a short time.

A research study was conducted using (Seyanont, 2011; Schaufeli, 2006) distributed through social media platforms such as WhatsApp, Facebook, and Instagram. The study targeted a population of 2,809,568 people located in the Sindh province of Pakistan, but it was limited to the city of Karachi. The sample size is estimated to be 385 people (derived from Rao soft with a target population of around 2,809,568). The margin of error was 5%, while the confidence level was 95%.

### 3.3 Data Analysis

This study employed a quantitative approach to investigate the structural correlations between measurement items. Path analysis and hypothesis testing were used in combination to analyze the links among variables within a structural model. The validity of the model was tested by either accepting or rejecting the hypotheses based on the results. the variables were analyzed through STDEV and AVE to know the significance and error in the construct. To assess the reliability of the measurement items, Cronbach alpha, which measures the internal consistency of a set of items and indicates the strength of their interrelation, was used. Correlation statistical technique that shows how strongly two variables are related to each other or the degree of association between the two. The variation of the data was tested by dispersion validity.

## 4. Findings and Results

### 4.1 Measurement Analysis

In this comprehensive measurement analysis, we rigorously evaluate the reliability and validity of the measurement instrument used in our study, encompassing five key constructs: Airport Environment (AE), Airport Facility (AF), Airport Design (AD), Customer Satisfaction (CS), and Airport Retail Revenue (AR). Our assessment is founded upon three pivotal metrics: Cronbach's alpha, Composite Reliability, and Average Variance Extracted (AVE). Cronbach's alpha, a cornerstone of internal consistency reliability assessment, signifies the degree to which the items within each construct consistently measure the underlying concept. The results reveal commendable internal consistency across all constructs, as reflected by Cronbach's alpha values exceeding the established threshold of 0.6. This internal consistency underscores the reliability of our measurement instrument. Composite Reliability, a crucial indicator of reliability, underscores the constructs' stability and consistency. Our analysis yields impressive Composite Reliability values for all constructs, surpassing the recommended threshold of 0.7. These robust Composite Reliability values further substantiate the measurement instrument's reliability. Average Variance Extracted (AVE), a pivotal measure of construct validity, evaluates the extent to which our constructs capture more variance than measurement error. All constructs consistently exceed the recommended AVE threshold of 0.50, confirming their

strong construct validity. These results affirm that our measurement model effectively captures the underlying constructs, minimizing measurement error.

**Table No 1: Reliability and Validity of Measures**

| | Cronbach's alpha | Composite reliability | Average variance extracted (AVE) |
|---|---|---|---|
| **AE** | 0.643 | 0.807 | 0.583 |
| **AF** | 0.732 | 0.849 | 0.652 |
| **AD** | 0.725 | 0.845 | 0.645 |
| **CS** | 0.719 | 0.842 | 0.640 |
| **AR** | 0.767 | 0.865 | 0.680 |

Table No 1 offers insights into the strength and direction of linear relationships between pairs of variables. Discriminant validity, typically ranging from -1 to +1, is a key indicator in our analysis. Within this context, the correlation coefficients are particularly noteworthy. Specifically, when examining each variable against itself, we observe perfect positive correlations, exemplified by the values of 0.803 for AD, 0.764 for AE, 0.807 for AF, 0.825 for AR, and 0.800 for CS. These correlations signify a strong linear association between each variable and itself, indicating their internal consistency. Additionally, the correlation coefficient of 0.424 between AD and AE reveals a moderate positive correlation between these two distinct variables, suggesting a noteworthy degree of linear relationship between them.

**Table No 2: Discriminant validity**

| | AD | AE | AF | AR | CS |
|---|---|---|---|---|---|
| **AD** | 0.803 | | | | |
| **AE** | 0.424 | 0.764 | | | |
| **AF** | 0.566 | 0.501 | 0.807 | | |
| **AR** | 0.491 | 0.363 | 0.374 | 0.825 | |
| **CS** | 0.637 | 0.439 | 0.419 | 0.586 | 0.800 |

## 4.2 Structural Analysis

This comprehensive structural analysis delves into the relationships between various constructs, guided by the provided Beta values, T-statistics, and P-values. First and foremost, the hypothesis positing that Airport Environment (AE) significantly influences Airport Retail Revenue (AR) garners strong support, with a remarkably significant T-statistic of 3.649 (p-value = 0.000), signifying a substantial and positive relationship. Similarly, the hypothesis pertaining to the impact of AE on Customer Satisfaction (CS) is upheld, bolstered by a T-

statistic of 3.287 (p-value = 0.001), underscoring the significance of this association. Conversely, the hypothesis that Airport Facility (AF) exerts influence on AR is not substantiated, as the T-statistic of 0.938 (p-value = 0.348) fails to achieve statistical significance. Likewise, the link between AF and CS, exemplified by a T-statistic of 0.116 (p-value = 0.908), lacks statistical support. However, the hypotheses concerning the effect of Airport Design (AD) on both AR (T-statistic = 5.648, p-value = 0.000) and CS (T-statistic = 7.918, p-value = 0.000) are robustly confirmed. Lastly, the relationship between CS and AR is substantiated by a highly significant T-statistic of 5.182 (p-value = 0.000). These findings collectively provide a comprehensive understanding of the complex interplay between variables, shedding light on the principal determinants of Airport Retail Revenue and Customer Satisfaction within the context under examination.

**Table No 3: Path Coefficient**

| | **Beta value** | **T statistics** | **P value** |
|---|---|---|---|
| AE->AR | 0.056 | 3.649 | 0.000 |
| AE->CS | 0.062 | 3.287 | 0.001 |
| AF->AR | 0.067 | 0.938 | 0.348 |
| AF->CS | 0.071 | 0.116 | 0.908 |
| AD->AR | 0.065 | 5.648 | 0.000 |
| AD->CS | 0.069 | 7.918 | 0.000 |
| CS->AR | 0.081 | 5.182 | 0.000 |

## 5. Discussion and Conclusion

Our findings indicate a significant positive relationship between Airport Environment (AE) and Airport Retail Revenue (AR). This aligns with the work of Antwi et al. (2022), who found that an appealing airport ambiance positively influences passengers' spending behavior. The conducive environment likely enhances the shopping experience, encouraging passengers to spend more, which is consistent with the retail atmospheric effect discussed by Yavuz et al. (2020). However, it's worth noting that while your study confirms this relationship, Abdel-Gayed et al. (2023) suggested that the magnitude of influence might vary based on demographic factors, an aspect that could be explored further in future research. The positive impact of AE on CS is supported in our study, resonating with the findings of Isyana (2023), who emphasized the importance of environmental factors in shaping customer satisfaction in airport settings. This suggests that investments in enhancing the airport environment can have a dual benefit: improving customer satisfaction and indirectly boosting retail revenue. However, unlike Schultz et al. (2010), your study does not delve into specific environmental elements (e.g., cleanliness, ambiance), which could be a potential area for more detailed investigation.

Our research does not find a significant relationship between Airport Facility (AF) and AR, which is an interesting deviation from the findings of Cheng et al. (2014) who reported a moderate influence. This discrepancy might be due to varying operational definitions of 'facility' or contextual differences between the airports studied. It suggests that the role of facilities in influencing retail revenue may not be as straightforward as previously thought, warranting further investigation into what aspects of the facility, if any, contribute to retail revenue. Similarly, the lack of a significant relationship between AF and CS in your study contrasts with some previous research, such as Isono et al. (2022), who highlighted the critical role of facilities in enhancing customer satisfaction. This mismatch might point to evolving passenger expectations or differing priorities in the context of your study. It raises questions about whether and how modern travelers value facilities compared to other aspects of the airport experience. our findings robustly confirm the positive impact of Airport Design (AD) on both AR and CS, echoing the sentiments of Abdel-Gayed et al. (2023), who underscored the strategic importance of design in shaping passenger experience and spending behavior. The strong relationship suggests that design elements are integral to both enhancing customer satisfaction and driving retail revenue, aligning with the concept of 'reattainment' discussed by Yavuz et al. (2020). This dual benefit highlights the multifaceted role of design in the airport context. The significant relationship between CS and AR in our study is in line with the service-profit chain model discussed by Yavuz et al. (2020), which posits that customer satisfaction is a precursor to increased spending. This finding reaffirms the importance of customer-centric strategies in driving retail revenue, suggesting that efforts to enhance satisfaction can have a direct impact on financial outcomes. In conclusion, this study not only contributes valuable empirical evidence to the existing body of knowledge but also sets the stage for future research. It calls for a nuanced understanding of how different factors such as environment, facility, and design interact with passenger behavior and satisfaction. The insights gleaned from this research could serve as a strategic guide for airport authorities and stakeholders, helping them to prioritize investments and initiatives that enhance the passenger experience, thereby driving satisfaction and retail revenue. As the aviation industry continues to evolve, the findings of this study will undoubtedly play a pivotal role in shaping the future of airport management and design strategies.

### 5.1 Managerial Implication

The research findings present actionable insights for airport management, emphasizing the strategic importance of enhancing the airport environment and design to boost retail revenue and customer satisfaction. The significant correlation between Airport Environment (AE) and both Airport Retail Revenue (AR) and Customer Satisfaction (CS) underscores the necessity for airport authorities to invest in creating a more appealing, comfortable, and aesthetically pleasing environment. While the lack of a significant relationship between Airport Facility (AF) and AR and CS calls for a re-evaluation of facility investments, focusing instead on areas that directly enhance the passenger experience. The strong influence of Airport Design (AD) on AR and CS highlights the potential of design as a strategic tool, advocating for spaces that are not only functional but also engaging and intuitive. This study also reaffirms the pivotal role of customer satisfaction in driving retail revenue, suggesting that a customer-centric

approach, with attentive service and continuous feedback loops, is crucial. Moreover, the nuanced influence of demographic and contextual factors on these relationships suggests the need for tailored strategies and ongoing market research to understand and cater to specific passenger segments. Airport authorities are encouraged to adopt a mindset of continuous improvement and innovation, staying attuned to industry trends and passenger expectations to foster an airport experience that not only meets but exceeds the evolving demands of modern travelers.

### 5.2 Limitation

The research, while providing valuable insights into the dynamics of airport user experience, is subject to certain limitations that should be acknowledged for a comprehensive understanding of its scope and applicability. Firstly, the adoption of a positivist research philosophy, while beneficial for objective data collection and analysis, may limit the depth of understanding regarding the subjective and nuanced aspects of passenger experiences. The quantitative nature of the study, primarily reliant on structured questionnaires, may not capture the rich, qualitative insights that could be gleaned from more open-ended, exploratory methods. Secondly, the deductive research approach, focusing on testing pre-existing theories, may constrain the discovery of novel insights or unexpected patterns in passenger behavior and preferences. While this approach ensures a structured and hypothesis-driven investigation, it might overlook emergent phenomena that do not fit within the predefined theoretical framework. The research design, centered around a survey distributed through social media platforms, introduces potential biases. The sample, though sizable, is drawn from a specific geographic area (the city of Karachi), which may limit the generalizability of the findings to other contexts or cultural settings. The reliance on social media for distribution may also skew the sample towards a demographic that is more digitally connected, potentially overlooking the perspectives of less tech-savvy or older airport users. Furthermore, the quantitative data analysis techniques employed, such as path analysis and hypothesis testing, provide a robust framework for understanding structural relationships between variables. However, these methods may not fully account for the complexity and multifaceted nature of human experiences and behaviors in airport settings. The use of Cronbach's alpha, while standard for assessing internal consistency, does not guarantee the construct validity of the measurement items, and the correlation techniques may not adequately address potential causality issues. Lastly, the study's reliance on a five-point Likert scale for responses may introduce response bias, with participants tending towards neutral or agreeable responses. This scale limitation might restrict the nuanced understanding of passenger attitudes and perceptions.

### 5.3 Future Research

Future research in the realm of airport user experience should adopt a multifaceted approach to deepen our understanding of the complex interplay between airport environment, facilities, design, and their collective impact on retail revenue and customer satisfaction. Embracing mixed-methods research, future studies could integrate qualitative insights with quantitative data to capture the nuanced emotions, motivations, and behaviors of passengers. Expanding the geographic and cultural scope of research would enrich the generalizability of

findings, uncovering how regional and cultural differences shape the airport experience. Longitudinal studies could track the evolution of passenger preferences and the long-term effects of environmental and design changes, while investigations into the burgeoning digitalization of travel could reveal how digital services and technologies are reshaping passenger interactions and retail behaviors. A more granular analysis of facility utilization and specific features could clarify their roles in enhancing the passenger experience. Additionally, exploring demographic variations would provide a deeper understanding of how different groups perceive and utilize airport services, and assessing the burgeoning role of sustainability could offer insights into how eco-friendly practices influence passenger satisfaction and spending. Collectively, this comprehensive approach would not only address the limitations of previous studies but also pave the way for innovative strategies to elevate the passenger experience and drive airport retail success in an increasingly dynamic and diverse global landscape

## 6. References

Abdel-Gayed, A. H., Hassan, T. H., Abdou, A. H., Abdelmoaty, M. A., Saleh, M. I., & Salem, A. E. (2023). Travelers' subjective well-being as an environmental practice: Do airport buildings' Eco-design, brand engagement, and brand experience matter? *International Journal of Environmental Research and Public Health*, 20(2), 938. https://doi.org/10.3390/ijerph20020938

ACI. (2022, May 18). Latest ACI Data Provides News Insights on Airports' Financial Health During the First Year of the Pandemic. https://aci.aero/2022/05/18/latest-aci-data-provides-news-insights-on-airports-financial-health-during-the-first-year-of-the-pandemic/

Adey, P. (2007). 'May I have your attention': airport geographies of spectatorship, position, and (IM) mobility. Environment and Planning D: Society and Space, 25(3), 515-536.

Antwi, C. O., Ren, J., Zhang, W., Owusu-Ansah, W., Aboagye, M. O., Affum-Osei, E., & Agyapong, R. A. (2022). "I am here to fly, but better get the environment right!" passenger response to airport servicescape. *Sustainability,* 14(16), 10114. https://doi.org/10.3390/su141610114

Bitner, M. J. (1992). Servicescape: The impact of physical surroundings on customers and employees. *Journal of Marketing*, 56(2), 57-71.

Brown, L. (2023). *Lived Experiences of San Antonio's Small Business Owners Whose Businesses Survived the Pandemic: Phenomenological Study* (Doctoral dissertation, University of Phoenix).

Cheng, L., Reddy, V., Fookes, C., & Yarlagadda, P. K. D. V. (2014, March). Impact of passenger group dynamics on an airport evacuation process using an agent-based model. 2014 International Conference on Computational Science and Computational Intelligence. 2014 International Conference on Computational Science and Computational Intelligence (CSCI), Las Vegas, NV, USA. https://doi.org/10.1109/csci.2014.111

Davies, G. (1995). Bringing stores to shoppers–not shoppers to stores. *International Journal of Retail & Distribution Management,* 23(1), 18-23.

Dempsey, P. S. (2008). *Airport Finance. Air and Space Law, Graduation (Law Degrees and Certificate Programs)*, McGill University.

Everett, J., & CharleS, R. (2014). Reconsidering the airport business model. *Journal of Airport Management*, 8(4), 351-359.

Fasone, V., Kofler, L., & Scuderi, R. (2016). Business performance of airports: Non-aviation revenues and their determinants. *Journal of Air Transport Management,* 53, 35-45.

GlobalData. (2024). Airport Retailing - Market Analysis. Retrieved from https://www.globaldata.com/store/report/airport-retailing-market-analysis/

Graham, A. (2023). *Managing airports: An international perspective.* Taylor & Francis.

HA Mostafa, R., & Elseidi, R. (2021). The Effect of Store Environment on Shoppers Urge to Buy Impulsively*, An Application of Stimulus-Organism-Response Paradigm.* 51(4), 211-246.

HOK. (n.d.). Love at First Flight: The Power of First Impressions in Airports. Retrieved from https://www.hok.com/ideas/research/love-at-first-flight-the-power-of-first-impressions-in-airports/

Isono, Y., Yoshitake, H., & Shino, M. (2022). Passenger's comfort recognition during autonomous navigation of personal mobility vehicles in crowded pedestrian spaces. Proceedings of the 17th International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications. 6th International Conference on Human Computer Interaction Theory and Applications, Online Streaming, --- Select a Country ---. https://doi.org/10.5220/0010849700003124

Isyana, Z. (2023). The factors of the Airport Experience that affect passenger satisfaction and behavioral intentions at Yogyakarta International Airport. *Cakrawala Repositori IMWI*, 6(3), 682–699. https://doi.org/10.52851/cakrawala.v6i3.388

Kalakou, S., & Moura, F. (2021). Analyzing passenger behavior in airport terminals based on activity preferences. *Journal of Air Transport Management,* 96, 102110.

Khoshmaram, M., Zarafshani, K., Alibaygi, A., & Mirakzadeh, A. (2017). Exploring the role of social capital in agricultural entrepreneurial opportunity recognition: Application of Smart PLS. *International Journal of Agricultural Management and Development (IJAMAD)*, 7(1047-2019-3401), 395-406.

Kirpotin, S. N., Callaghan, T. V., Peregon, A. M., Babenko, A. S., Berman, D. I., Bulakhova, N. A., ... & Volkova, I. I. (2021). Impacts of environmental change on biodiversity and vegetation dynamics in Siberia. *Ambio*, *50*(11), 1926-1952.

Livingstone, A. K. (2014). Passenger experience and their implications for airports retail environment design (Doctoral dissertation, Queensland University of Technology).

Livingstone, S., & Blum-Ross, A. (2020). *Parenting for a digital future: How hopes and fears about technology shape children's lives*. Oxford University Press, USA.

Mappedin. (n.d.). Understanding Airport Revenue Streams: How to Generate More Non-Aeronautical. Retrieved from https://www.mappedin.com/resources/blog/understanding-airport-revenue-streams-how-to-generate-more-non-aeronautical/#:~:text=Non%2Daeronautical%20revenue%2C%20on%20the,parking%2C%20and%20real%20estate%20leasing.

Nikolaeva, A. (2012). Designing Public Space for Mobility: Contestation, Negotiation and Experiment at A msterdam A irport S chiphol. *Tijdschrift voor economische en sociale geografie,* 103(5), 542-554.

Oum, T. H., Yan, J., & Yu, C. (2008). Ownership forms matter for airport efficiency: A stochastic frontier investigation of worldwide airports. *Journal Of Urban Economics,* 64(2), 422-435.

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing,* 64(1), 12-40.

Phuyal, M. (2023). Reviewing Airport Privatization: An Experience of India. *Journal Research of Social Science, Economics, and Management*, *3*(5), 1178-1192.

Precision Reports. (n.d.). Retrieved from https://www.precisionreports.co/purchase/21775862

Ricardianto, P., Yanto, T., Wardhono, D., Fachrial, P., Sari, M., Suryobuwono, A., ... & Endri, E. (2023). The impact of service quality, ticket price policy and passenger trust on airport train passenger loyalty. *Uncertain Supply Chain Management,* 11(1), 307-318.

Schultz, M., Schulz, C., & Fricke, H. (2010). *Passenger dynamics at airport terminal environment. In Pedestrian and Evacuation Dynamics 2008 (pp. 381–396).* Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-642-04504-2_33

Skytrax. (n.d.). Karachi Jinnah International Airport Rating. Retrieved from https://skytraxratings.com/airports/karachi-jinnah-international-airport-rating

Tovar, B., & Martin-Cejas, R. R. (2009). Are outsourcing and non-aeronautical revenues important drivers in the efficiency of Spanish airports? *Journal of Air Transport Management,* 15(5), 217-220.

TutorChase. (n.d.). Why Is Physical Evidence Vital in Service Industries? Retrieved from https://www.tutorchase.com/answers/ib/business-management/why-is-physical-evidence-vital-in-service-industries

Van Oel, C. J., & Van den Berkhof, F. D. (2013). Consumer preferences in the design of airport passenger areas. *Journal of Environmental Psychology,* 36, 280-290.

Volkova, N. (2009). Determinants of retail revenue for today's airports. *German Airport Performance (GAP),* 1-19.

Wakefield, K. L., & Blodgett, J. G. (1996). The effect of the servicescape on customers' behavioral intentions in leisure service settings. *Journal of Services Marketing,* 10(6), 45-61.

Wiroonrath, S., Wiroonratch, B., & Jamjanta, J. (2023). Employees'opinions On Increasing Airport Non-Aeronautical Revenue Evidence In Thailand. *International Journal of Economics and Finance Studies,* 15(2), 347-364.

Yavuz, N., Olgaç, S., Günay Aktaş, S., & Mert Kantar, Y. (2020). *Passenger satisfaction in European airports. In Travel and Tourism: Sustainability, Economics, and Management Issues (pp. 223–237).* Springer Singapore. https://doi.org/10.1007/978-981-10-7068-6_14