Orient Research Journal of Social Sciences *ISSN Print 2616-7085*
July-December, 2024, Vol. 9, No. 2 [01-15] *ISSN Online 2616-7093*

Rising to New Heights: Altering Airline Brands Over AI-Powered Personalization

[1]Muhammad Bilal Tariq* [2] Dr. Noor Afzainiza Afendi and [3]Dr. Ooi Shir May

1. Ph. D Scholar, International Business, Universiti Utara Malaysia, https://orcid.org/0009-0003-0495-1591
2. Senior Lecturer, International Business, Universiti Utara Malaysia
3. Senior Lecturer, International Business, Universiti Utara Malaysia

***Corresponding Author:** Bilalepost@gmail.com

Abstract

The study aims to clarify how AI can act as a crucial tool in airlines to promote customer satisfaction, foster a positive brand image, improve brand equity, ultimately resulting in higher performance. Sustaining customer satisfaction is crucial for the elevated firm performance, whereas in the dynamic aviation sector where gravity of Artificial Intelligence (AI) is unfamiliar by many airlines, this absence of AI technology is creating considerable obstacles in improving customer satisfaction leading to declined brand image and decreased brand equity under intense competition. Based on the Literature Review and case studies analysis, this paper provides a comprehensive process from artificial intelligence to enable airline brands to implement segmentation, data aggregation, and AI-driven analysis, and facilitate AI system deployment and real-time analytical feedback. This process may contribute to elevate brand image and brand equity of the airlines. The results of this study stated that the implementation of AI-based processes will enable airlines to obtain immediate input from passengers and tailor their demands, ultimately resulting in enhanced customer happiness, a positive brand image, and increased brand equity. This review's future suggestions include the use of AI within airline brands, personnel training on AI, and investment in AI technology models to enhance operational efficiency. Furthermore, empirical assessment and scale formulation are advised to augment the existing research on the utilization of AI.

Key Words: Artificial Intelligence, Aviation Sector, Brand Personalization

Introduction

The airline industry has experienced substantial expansion in recent years, driven by a rise in air passengers and increased competition between airline brands (Kumar et al., 2019). In response, airlines must emphasize superior customer experiences and foster long-term relationships with customers to maintain competitiveness.(Soliman, Fathy, & Soliman, 2024). Airlines try to make experiences special for the traveler, trying to differentiate from other airlines and making its passengers satisfied about experiences in travel. (Krasnyuk & Krasniuk, 2021). Nonetheless, the constraints of conventional old marketing techniques indicate that the incorporation of AI could significantly alter the manner in which airlines engage with passengers (Geske, Herold, & Kummer, 2024).

l/;Furthermore, most of the airlines has experienced a reduction in market share and revenue attributed to decreased brand image, and declined brand equity (Azhar, Othman, & Ahmad, 2018; Farooq et al., 2019; Y. K. Fu, 2023; Song, Ruan, & Park, 2019). This decrease has been attributed to inadequate personalization in their marketing efforts (Brohi & Shaikh, 2019) hence declining in revenue. Furthermore, most of the airline's existing marketing strategies are obsolete and generic, ignoring to cater to the distinct demands and preferences of individual clients (Farooq et al., 2019). Consequently, airlines with obsolete marketing strategies are confronted a substantial problem of diminishing sales and revenue, jeopardizing its competitive standing in the aviation sector (Soomro, 2018). How these obsolete Marketing strategies are ineffective and force passengers to leap-frog to other airlines can be explained in this Passenger Disconnect Spiral.

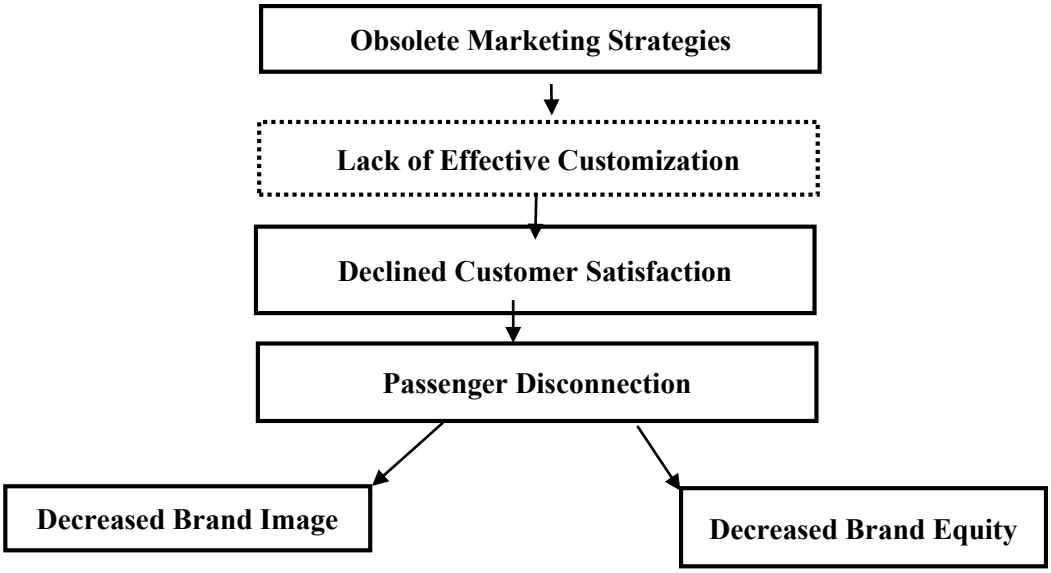

Figure 1 Passenger Disconnect Spiral Model Developed from Issues Highlighted by Brohi and Shaikh (2019), Farooq et al. (2019), Soomro (2018)

The passenger disconnect spiral elucidates that in the new technological landscape, airlines employing outdated marketing methods, lacking of effective customisation or personalised experiences, have resulted in customer dissatisfaction This lack of satisfaction compels passengers to choose airlines that offer superior personalized services. The transition of a passenger from a prior airline adversely affects brand image and brand equity. Thus, its significant to induce effective customization experience for the passengers to reconnect.

The aviation industry is intensely competitive, with multiple airlines competing for market share (Shah et al., 2020). Airlines face substantial competition from those airlines that focus on personalization to be effectively implemented to attract and retain passengers (Paraschi & Poulaki, 2023). The issue is that although airlines maintain markets where consumers have high standards for individualized care, most current airline marketing initiatives fail in personalization. (Ali, Dey, & Filieri, 2015; Yasim & Zaini, 2022). In the worldwide perspective, not only in airline sector of numerous countries is undergoing a notable transition but other organizations and government entities are utilizing AI technologies to improve multiple facets of its operations (Santoso, Safitri, & Samidi, 2024) leading to customer satisfaction.

In addition, the Federal Board of Revenue (FBR) in Pakistan has successfully used AI technology to improve collection, leading to increased revenue for the nation. (Mumtaz, 2024; PID, 2024). This technical innovation enhances the analysis and compliance monitoring, thus optimizing the public administration process (Mumtaz, 2024). Subsequently, if this technique is adopted in the government sector to elevate tax collection, it may enhance the airline sector's brand image and brand equity (Farooq et al., 2019; Selase, 2018) leading to higher revenues. By implementing AI technologies, airlines can augment consumer satisfaction, elevate its brand image, and restore brand equity, so positioning itself for profitability and competitiveness in the airline industry. Prominent multinational corporations are investing significantly in artificial intelligence technologies, particularly in the United States, China, and Russia (Chiwaridzo & Chiwaridzo, 2024).

Airlines that implement AI-enabled customization strategies will be able to track customer activities on their network. For example, factors such as demographics, travel habits, average luggage weight, etc. It has also been noted that travellers might be classified as either economic or business. With this information, airlines may create personalised packages for each customer, which boosts satisfaction and helps build the airline's reputation.

The predominant work on marketing personalisation to date has focused on traditional methods, such as consumer segmentation and loyalty programs, which exhibit constraints regarding scalability and effectiveness (Hendrawan & Anggraeni, 2020; Nastasoiu & Vandenbosch, 2019) and needs to be upgraded by the induction of AI Personalised strategies (Davies, Eynon, & Salveson, 2020). Exploring the potential of AI-driven personalization in aviation is essential (None et al., 2024; Soliman, Fathy, & Soliman, 2024). The current lack of current research hinders the effective development of AI customization strategies in airlines (Verma, 2024). This research will proceed through the main steps: literature review and development process.

Literature Review

The integration of artificial intelligence within the airline industry has emerged as a transformative force, increasing both operational efficiency and passenger experience, consequently leading to increased profitability (Almarashda et al., 2021; Kamkankaew et al., 2024). Artificial intelligence technologies are used to enhance multiple airline operations, including customer service and predictive maintenance, thus optimizing resource distribution and minimizing operating expenses (Kamel, 2022; Shedrack Onwusinkwue et al., 2024). Evaluation of huge dataset by AI can hugely enhance strategic decision taking ability of airlines and can implement it accordingly to market bounce or consumer behaviour. (Chidera Victoria Ibeh et al., 2024; Pérez-Campuzano et al., 2021). In an industry with such narrow profit margins as airlines need this skill to make learnt decisions that improve their profitability?

Furthermore, AI technologies increase the passengers' experience, which also is considered important in ensuring the acquisition of customer loyalty and happiness. In an Impirical study performed by Y.-K. Fu (2023) the author studies how airlines have been incorporating AI to personalize services to the needs of individual passengers to increase perceived value and create brand loyalty. By analyzing the data of your customers, airlines can provide personalized advice, optimize the process of check in and use targeted marketing communication to increase the level of amenities during travel. (Huang, 2022). This scheme increases customer satisfaction, promotes repeat patronage, and ultimately increases revenue.

Besides, Ajiga et al. (2024); Tulcanaza-Prieto, Cortez-Ordoñez and Lee (2023); Yang (2023) the integration of AI in customer service operations can substantially improve the overall customer experience. Ghosh, Ness and Salunkhe (2024); Khana et al. (2023) examine the capacity of AI-driven chatbots and virtual assistants to deliver around-the-clock customer care, handle inquiries and solve problems in an instant way. This prompt approach to customer satisfaction increases and relieves the workload on human resources, so that it can handle more complex jobs that require a personal touch. Therefore, airlines can maintain higher standards of service while managing operating costs effectively.

Durmus Senyapar (2024); James, Joseph and Sharma (2024); Kumar et al. (2019) stated that AI-driven commerce will enhance the customer experience itself, resulting in greater customer loyalty and elevated conversion rates. By using AI to evaluate customer behavior and preferences, airlines can develop customized marketing strategies that appeal to individual customers, thus increasing sales and improving profits (Bhuiyan, 2024).

AI will revolutionize the travel and hospitality sectors, enhancing consumer experiences, optimizing operational efficiency, and streamlining services(Limna, 2023; Peruchini, da Silva, & Teixeira, 2024). Applications of AI in these domains encompass conversational agents, machine learning predictive models, and recommendation systems (Wu, 2023). AI adoption provides various advantages, including enhanced customer service and cost savings, but it also poses obstacles such as potential job displacement and privacy issues (Gajbhiye, 2024; Limna, 2023). In tourism marketing, AI enables tailored product recommendations and forecasts purchasing habits (Durmaz & Baser, 2023). The technology is utilized in multiple facets of the sector, encompassing customer service, operational efficiency, tailored travel experiences, and sustainability initiatives (García-Madurga & Grilló-Méndez, 2023). With the continuous development of AI, there is an increasing need for research to investigate

its possible use and effects within the tourism and hospitality industries (Kichuk et al., 2023; Peruchini, da Silva, & Teixeira, 2024).

Airlines use artificial intelligence, machine learning, and comprehensive data to deliver personalized courses and products. Recommended systems that utilize collaborative and content-based filtering algorithms provide personalized travel experiences by assessing user preferences and behaviors (Badouch & Boutaounte, 2023; Zou, 2024). AI-enhanced chatbots and virtual assistants are improving client experiences in various sectors, including as finance and hospitality, by offering customized advice and services (Bhuiyan, 2024). The relevance, credibility, utility, and perceived intelligence of ChatGPT's AI-driven travel recommendations significantly influence travelers' trust and behavioral intentions (Ali et al., 2023). Developments in customization technology are transforming business travel, increasing customer satisfaction, and potentially yielding revenue for organizations within the sector (Binsaeed et al., 2023).

Most of the Studies demonstrate that customer satisfaction is markedly affected by the service quality of airlines across multiple aspects, including tangibles, personnel, and empathy, highlights the increasing personalization in air travel. Airlines are customizing experiences and services, using extensive customer data and sophisticated technology (Guerrini et al., 2023). This enables modules to form a dynamic aggressive program and integrate current systems for the management of a substantial notification process (Stolyarov, 2023). Research shows that key service elements, such as the entertainment facilities offered at an airport, are significantly related to customer satisfaction (Daya, 2023; Pholsook, Wipulanusat, & Ratanavaraha, 2024). The parameters vary according to the type and cultural context of travel (Tian et al., 2021). Neural network models predicting the success of airline Passengers have highlighted the importance of services such as Wi-Fi, online ticketing, and the support of special classes of staff (Du, 2023). The findings highlight the need for airlines to introduce AI and improve service quality, especially for business passengers, and to provide customized promotions and upgrades for each passenger, to increase customer satisfaction and attract more business in the career sector (E et al., 2021; Guo & Ma, 2022).

Recent studies have underscored the difficulties encountered by airlines in preserving market share and guaranteeing customer satisfaction (Farooq et al., 2019; Raza et al., 2020). Service quality is a major factor that studies has illustrated impacts customer satisfaction of several airlines (Ali, Dey, & Filieri, 2015). Poor Management, insufficient fleet, jeopardize the market share of an airline(Heshmati, Kumbhakar, & Kim, 2018; Vaze & Barnhart, 2015). The airline industry’s increasing interest on premium services to keep up with market competitiveness underscores the importance to treat these difficulties. (Lee, Lee, & Park, 2024). In order to regain its competitive advantage, airlines should redress the deficiencies in service quality, optimize its management practices, and face the changing requirements of the market to stimulate customer loyalty and satisfaction and, with the proper implementation of AI systems, that is possible. (Rahmania Az Zahra et al., 2023).

The travel and hospitality industries will be revolutionized by AI. Besides, according to recent studies; particularly aiding the sphere of improving guest experiences and personalized marketing efforts Using AI systems they can evaluate vast amounts of consumer data to improve operational efficiency, customise marketing communications and offer real-time recommendations(Babatunde et al., 2024; Semwal et al., 2023). García-Madurga and Grilló-Méndez (2023) researched AI applications in the tourism sector include sentiment analysis of travel reviews, enabling travelers on personalised travel experience and travel sustainability By combining AI and data analytics, hotels can now lean on data to boost client personalisation and result in increased consumer loyalty, increases in revenue, and overall happiness (Said, 2023). However, there are a few difficulties for solutions on the way, related to the data privacy problems, potential to have algorithmic biases, and the need of ethics in the data usage (Babatunde et al., 2024; Said, 2023).

These practices exhibit certain constraints, such as the necessity for human data analysis and the absence of real-time insights. AI-driven brand personalisation in airline industry can mitigate these

limitations by scrutinising extensive passenger data, discerning patterns, and delivering instantaneous recommendations.

Table 1
Systematic Literature Review

Sr#	Title of Research	Year	Findings
1	"Ali, F., Dey, B. L., & Filieri, R. - An assessment of service quality and resulting customer satisfaction in Pakistan International Airlines: Findings from foreigners and overseas Pakistani customers	2015	Evaluates service quality and customer satisfaction in PIA.
2	Ali, F., Yasar, B., Ali, L., & Dogan, S. - Antecedents and consequences of travelers' trust towards personalized travel recommendations offered by ChatGPT	2023	Explores factors affecting trust in personalized travel recommendations.
3	Babatunde, S. O., Odejide, O. A., Edunjobi, T. E., & Ogundipe, D. O. - The role of AI in marketing personalization: A theoretical exploration of consumer engagement strategies	2024	Theoretical exploration of AI's role in marketing personalization and consumer engagement.
4	Badouch, M., & Boutaounte, M. - Personalized Travel Recommendation Systems: A study of Machine learning approaches in tourism	2023	Studies machine learning approaches in personalized travel recommendations.
5	Bhuiyan, M. S. - The role of AI-Enhanced personalization in customer experiences	2024	Examines AI-enhanced personalization in improving customer experiences.
6	Brohi, M. A., & Shaikh, A. A. - Assessment of perceived service quality using servqual model: a case study of Pakistan international airline PIA in-flight hospitality	2019	Assesses perceived service quality in PIA using the SERVQUAL model.
7	Chiwaridzo, O. T., & Chiwaridzo, S. - From crisis to prosperity: Leveraging robots, artificial intelligence, and service automation for sustainable tourism in Zimbabwe	2024	Discusses leveraging AI and automation for sustainable tourism.
8	Du, W. - Neural network in aircraft customer satisfaction prediction	2023	Explores the use of neural networks in predicting customer satisfaction in aviation.
9	Durmaz, Y., & Baser, M. Y. - A Systematic Literature Review on Artificial Intelligence Applications in Tourism Marketing	2023	Reviews AI applications in tourism marketing.
10	Farooq, M., Muhammad, S., Raju, V., Kalimuthu, K. R., & Qadir, A. - Measuring and comparing the desired and actual service quality of Pakistan international airline	2019	Compares desired vs. actual service quality in PIA."

Conceptual Framework

Based on the extensive literature review and problem discussed, it's important that airlines must priorities great customer experiences and cultivate robust relationships with its clientele (Farooq et al., 2019). To fulfill that requirement a proposed conceptual framework is presented that can assist airlines in augmenting its marketing initiatives and enhancing customer satisfaction (Brohi & Shaikh, 2019; Soomro, 2018) with the help of AI. The suggested conceptual process for AI-driven brand personalization in air travel comprises of interconnected following elements

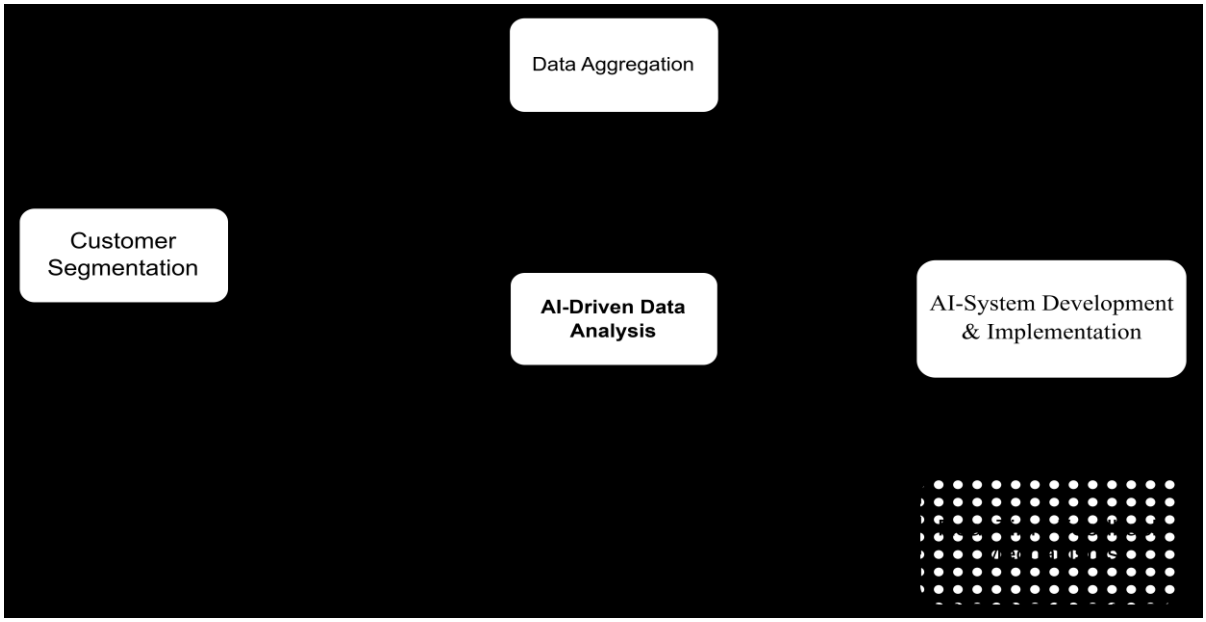

Figure 2: conceptual AI Based Brand Personalization Model

The above model delineates a procedure for utilising AI in data analysis, Implementation, system development, emphasising consumer segmentation and Realtime feedback Mechanisim (Weber et al., 2022). First and formost, customer segmentation is significant, in which clients are classified into specific segments according to their travel patterns, including frequent fliers and those who travel regularly, potentially qualifying for loyalty or rewards programs. Subsequently, Leisure travellers, who mostly travel for recreation, may be affected by seasonal incentives. Additionally, business travellers, or customers travelling for professional purposes, may necessitate distinct services and pricing frameworks. Following segmentation, data aggregation occurs, wherein data is compiled from multiple sources to form a comprehensive dataset. The dataset is subsequently moved to the AI-Driven Data Analysis module, where data from several sources is integrated to generate a comprehensive perspective of client behaviour using various AI algorithms. Moreover, the data enables AI to forecast which personalised package will best assist passengers. Insights derived from data analysis inform the development and implimentation of the respective systems to improve customer experience and operational efficiency. Ultimately, the deployment of AI system that gather real-time consumer feedback assesses whether the passenger is satisfied or dissatisfied. This input can guide continuous enhancements and modifications to previously utilized AI services.

Material and Methods

This method outlines an approach to explain the above developed conceptual process for AI-driven brand personalization in the airline industry, drawing on insights from the existing literature and case studies. The first phase included a comprehensive review of existing literature case studies related to AI applications in the airline industry, personalization strategies and customer experience. This review will focus on Process pertaining AI-driven customer segmentation, data analytics, personalization techniques, real-time feedback devices, and ethical considerations. Finally, Evaluation of findings from various studies that have addressed the effectiveness of above-mentioned process effecting customer satisfaction and operational efficiency will be made.

Customer Segmentation

Customer segmentation is the process of dividing a heterogeneous market into distinct groups of consumers who share similar characteristics, preferences, or behaviors. With this strategic approach,

organizations can take appropriate actions to meet the needs of each segment's customers, those actions satisfy customer needs and lead to loyalty, which ultimately results in profitability.

Firstly in this case, we see that the first step for airlines can be to use AI algorithms to classify clients depending on their behaviour and preferences (Misra, Kapoor, & Sanjeev, 2024). Such a method, called hyper segmentation (Mandapuram et al., 2020), empowers the airline to gain an in-depth understanding of the different attributes and desires of their Passangers. This hyper segmentation helps the airline in focusing on customizing marketing strategies and service offerings to cater to the different needs of its different consumer segments just like the airlines can use AI algorithms to segment its customers using millions of data points from multiple sources such as reservation trends, website engagement, social media interaction, and loyalty program participation (Purnawati, 2024).

Moving on, Business travelers representing those travellers who typically choose efficiency, flexibility, and high quality service and leisure travellers into those travelers who give more importance to cost effectiveness and unique experience. Similar to airline Passangers, they are far more price sensitive, and oftentimes search for low-cost carriers (LCC's) which offer economical travel possibilities. Therefore, airlines can derive a personalised marketing campaign that can determine, at least to some extent, the potential profitability a customer can bring to the industry. As a result of incorporating AI driven segmentation, airlines can provide flight recommendations and other services intended for individual customer behaviour, improve the customer experience and eventually establish loyalty with potential customers.

Data Aggregation

Data aggregation refers to the act of assembling and summing up information from multiple resources to create a comprehensive perspective with which to analyze and make a decision. Then, at this point, the customer segmentation data can be aligned into one platform so we can accomplish a unified picture of the customer. Airlines make use of data integration techniques for aggregating data available across multiple information sources to obtain a centralized database. This database must include demographics, purchase history and customer interaction data for all points of contact. With data from many sources, AIRLINES will be able to understand what interests its customers, what they do, and what their problems are. A detailed client profile can be utilised by airlines to deliver enhanced customer experiences such as made to order suggestions, dynamic pricing and customized loyalty programs. In this case, airlines can integrate data from multiple sources into a central customer database to gain deep understanding of its consumers, and serve customized experiences to improve consumer loyalty and revenue. The data aggregations is a crucial part of staying competitive and also adapting to the changing demands of its customers.

AI-driven Data Analysis

AI driven data analysis means that AI is used to improve the whole cycles of data collection, processing, and interpreting data. In order to take advantage of this approach, advanced algorithms and deep learning techniques are utilized, along with machine learning techniques, that enable to analyze large datasets, and extract patterns to better understand these patterns and to use them as inputs in the decision making process for industries such as airline industry. A powerful tool that airlines can use to better understand consumer behavior, consumer preferences and their needs is AI driven data analysis. Importantly, AI algorithms are sophisticated enough that airlines can use them to analyze the data collected from all those other sets of data aggregations. By examining the aggregated data, airlines stand a chance of learning more about passenger behavior, and thus, the airline can differentiate and recognize different patterns and trends of individual consumer segments. This comprehension enables the airlines to develop attractive and realistic service portfolios for different client segments that not only cover their preferences and needs but also cater to this diverse group of clients. So, if made appropriately, these offered services are bound to sustainably enhance passenger engagement and enhance satisfaction helping the airline succeed in a highly competitive industry.

AI-System Implementation

Including artificial intelligence technology within the systems, which are also already using AI capabilities to enhance functionality and decision making processes, known as the deployment of AI systems, particularly as concerns airlines ticket systems. Creating tailored trip packages is the core of implementation of AI system. Taking into account data analysis insights, AI algorithms can offer personalized offers in different client categories. Before each of the tailored packages is deployed, their efficacy needs to be assessed. AI algorithms can recreate various scenarios to determine when the produced packages meet consumer's expectations and operational viability. It is used to ensure that the products created for production and marketing on relevant platforms are well prepared. If the packages validate, they can be deployed across airlines' marketing channels. The deployment is just one part of implementation of AI systems. Continual monitoring and feedback systems are needed for the effectiveness of personalised solutions to be evaluated

Real-Time Feedback Analytics

Real-time feedback analytics refers to the continuous collection, processing, and analysis of data to provide immediate insights and feedback to users or systems as events occur. This approach enables organizations to monitor performance, behaviors, and outcomes in real-time, allowing for timely adjustments and improvements based on the feedback received.

Similarly, airlines may track client interactions and preferences as they develop, facilitating prompt modifications to marketing campaigns and service offers. Implementing real-time data analytics is essential for improving decision-making processes in airlines. Utilising these insights, airlines can consistently track consumer interactions and preferences, which change swiftly in the current dynamic market landscape. This capability enables the airline to promptly modify its marketing tactics and service offerings, assuring their continued relevance and efficacy. Real-time data analytics entails the ongoing processing and examination of data concurrently with its collection.

For airlines, this entails collecting Realtime feedback from multiple client touchpoints, including website interactions, social media participation, flight reservations, and reward program activities. Through real-time data analysis, airlines can acquire instantaneous insights into client behaviour and preferences. This immediacy is essential for comprehending trends and patterns that may affect consumer decision.

Finally, both real time feedback and other forms of feedback can prompt critical modifications to airlines' personalisation policies. If passengers express displeasure over certain aspects of their travel experience, for instance, delays in service or insufficient communication by the airline, the airline can immediately effect corrections to that (Mandapuram et al., 2020). To ensure that AIRLINES is responsive to client expectations and thereby optimize service performance and further strengthen the brand, this process of iterative feedback and modification of the guideline system is assured. AIRLINES needs to use real time feedback system to evaluate and improve its personalization strategies. Through active engagement with consumers and customers' problems, AIRLINES can improve the total travel experience and attain high degree of customer satisfaction and sustain competitive advantage in the air travel industry.

Discussion

This research directs that based on review of literature and case studies, data aggregation is important to assemble client data from various sources producing an exact image of consumer habits and choice. A unified database enables airlines to offer personal experience, dynamic pricing and tailored incentive programs that will strengthen consumer relations. In addition, the use of AI powered data analysis helps airlines to identify and recognise patterns and trends within the amalgamated data to construct attractive service portfolios suited for the unique needs of different consumer segments.

Mandapuram et al. (2020), Limna (2023) and Kamel (2022) explain the significance of Artificial intelligence in service sector, and supports the current research.

Furthermore, it also means that to effectively execute an AI system, it is not only a matter of planting technology, but of continuous oversight and enrichment of personalized services according to the input by users. Airlines can also use real time feedback analytics to quickly scale up or down its marketing strategy and be able to offer its service offerings as it ensures to remain relevant and relevant in fulfilling customer expectation changes over time. By taking a proactive approach, the company goes beyond boosting customer satisfaction to building brand commitment and a high degree of trust (crucial for long term success in aviation sector). This argument is in line with Durmus Senyapar (2024), Law et al. (2024), Semwal et al. (2023) describing the significance of procedures for adjusting AI systems to be effective.

Conclusion

This research concludes that based on the above argument for using AI, the ability of delivering effective AI systems to passengers involves utilizing the technological deployment, the ongoing monitoring and improvement of personalized services that feedback from passenger inputs. Airlines will also benefit from real time feedback analytics that give them the ability to rapidly adjust its marketing strategy and service offerings in order to remain relevant and effective to changing client expectations. This proactive approach isn't just beneficial for bettering the customer satisfaction since it also strengthens the brand loyalty and trust necessary for achieving significant long term success in the aviation field. This argument also agrees with the speech of Durmus Senyapar (2024), Law et al. (2024) as well as the reasoning behind why Semwal et al. (2023) explains procedures for adapting AI systems for efficiency.

In conclusion, Airlines have in their potential of integrating AI technologies and leverage the entire range of AI applications for application in its operations by improving their services and increasing their share in the global marketplace which will help to enhance their creative stance, improved customer satisfaction, increased brand image and brand equity to reinforce long lasting relationship with its passengers. This is the strategic transition that airlines need to prosper in the developing aviation environment to assure continued growth and profit in the long term.

Limitations and Future Recommendation

There are some limitations in the suggested framework intending to boost the airline customer pleasure through AI integration. Because AI driven strategies involve huge technology and infrastructural investments, this makes the airlines spend more financially than in a competitive market where resources are limited. The dependence on aggregation and analysis of data brings with it the fear of falling foul of data privacy and security; the accumulation of such detail requires detailed cybersecurity protocols to secure such sensitive data.

The quality and correctness of gathered data is critically important to effective segmentation and application of customized marketing strategies. The use of inaccurate or insufficient data will result in wrong methods, which will not connect with the target group, thus weakening customer trust and meeting satisfaction. The ever-changing consumer preferences and market trends mean that such AI models need to be kept up to date and we see a need for constant adaptation and refinement of the AI models, which is (particularly for large data sets) resource intensive and often requires retraining and updating of the underlying algorithms periodically.

Future research should be focused on scaling this model and experimentally testing it: it could measure the effects of AI driven marketing strategies on brand equity, brand image, customer retention, and customer happiness. Furthermore, AI-driven systems must be objectively assessing its effect as both a moderator and a mediator. This empirical evidence should embrace the aviation industry and be assessed in other industries, other demographics, and in other geographical. Besides, next research

should concentrate on creating AI systems that are less costly, scalable and tailored to the specific requirements of airlines. Moreover, it will be critical to set up clear standards and perfect protocols for information security and information security, so as to develop clients' trust and achieve consistency with lawful necessities.

In addition, airlines need to develop strategy on staff training and development investments that will promote the skills required to proactively utilize AI technology and interpret data insights. This type of investment will give people the ability to make decisions using real time analytics which will in turn increase customer interactions and service delivery.

Understanding consumer behaviour and preferences is ongoing, and the results are vital to improve segmentation strategies and to make sure that marketing efforts remain current and continue to be effective. By engaging your customers via surveys and feedback mechanisms you can gather valuable insights that enable you to refine your overall marketing strategy in the future and improve the overall customer experience.

Lastly, drawing to a close, the usage of AI in forming airline marketing strategies has great possibilities because it helps to make customers happy, but it is important to handle the limitations identified and use the strategies recommended to achieve sustainable profit in the unstable airline industry. Aiming at forging positive brand image and development of strong brand equity, airlines must give priority to relationships with clients to be able to adapt to any market conditions.

References

Ajiga, D. I., Ndubuisi, N. L., Asuzu, O. F., Owolabi, O. R., Tubokirifuruar, T. S., & Adeleye, R. A. (2024). AI-driven predictive analytics in retail: a review of emerging trends and customer engagement strategies. *International Journal of Management & Entrepreneurship Research*, *6*(2), 307-321.

Ali, F., Dey, B. L., & Filieri, R. (2015). An assessment of service quality and resulting customer satisfaction in Pakistan International Airlines: Findings from foreigners and overseas Pakistani customers. *International Journal of Quality & Reliability Management*, *32*(5), 486-502.

Ali, F., Yasar, B., Ali, L., & Dogan, S. (2023). Antecedents and consequences of travelers' trust towards personalized travel recommendations offered by ChatGPT. *International Journal of Hospitality Management*, *114*, 103588.

Almarashda, H. A. H. A., Baba, I., Ramli, A. A., Memon, A. H., & Rahman, I. A. (2021). Human Resource Management and Technology Development in Artificial Intelligence Adoption in the UAE Energy Sector. *Journal of Applied Engineering Sciences*, *11*(2), 69-76. https://doi.org/10.2478/jaes-2021-0010

Azhar, M. S., Othman, I. B. L., & Ahmad, N. (2018). Investigating Customer Satisfaction of Airline Passengers in Aviation Sector of Pakistan. *Pakistan Journal of Humanities and Social Sciences*, *6*(4). https://doi.org/10.52131/pjhss.2018.0604.0064

Babatunde, S. O., Odejide, O. A., Edunjobi, T. E., & Ogundipe, D. O. (2024). The role of AI in marketing personalization: A theoretical exploration of consumer engagement strategies. *International Journal of Management & Entrepreneurship Research*, *6*(3), 936-949.

Badouch, M., & Boutaounte, M. (2023). Personalized Travel Recommendation Systems: A study of Machine learning approaches in tourism. *Journal of Artificial Intelligence Machine Learning and Neural Network*, *33*, 35-45.

Bhuiyan, M. S. (2024). The Role of AI-Enhanced Personalization in Customer Experiences. *Journal of Computer Science and Technology Studies*, *6*(1), 162-169. https://doi.org/10.32996/jcsts.2024.6.1.17

Binsaeed, R. H., Yousaf, Z., Grigorescu, A., Chitescu, R. I., Nassani, A. A., & Samoila, A. (2023). Customer Engagement and Customer Relationship Management Capabilities' Effects on Innovation Performance and Customer Distrust's Moderating Role. *Sustainability*, *15*(12), 9475. https://doi.org/10.3390/su15129475

Brohi, M. A., & Shaikh, A. A. (2019). Assessment of perceived service quality using servqual mod-el: a case study of Pakistan international airline (PIA) in-flight hospitality.

Chidera Victoria Ibeh, N., Onyeka Franca Asuzu, N., Temidayo Olorunsogo, N., Oluwafunmi Adijat Elufioye, N., Ndubuisi Leonard Nduubuisi, N., & Andrew Ifesinachi Daraojimba, N. (2024). Business Analytics and Decision Science: A Review of Techniques in Strategic Business Decision Making. *World Journal of Advanced Research and Reviews*, *21*(2), 1761-1769.

Davies, H. C., Eynon, R., & Salveson, C. (2020). The Mobilisation of AI in Education: A Bourdieusean Field Analysis. *Sociology*, *55*(3), 539-560. https://doi.org/10.1177/0038038520967888

Daya, N. (2023). Airport Service Satisfaction and Experience in Leyte: Basis for Airport Service and Facilities Improvement. *International Journal of Research Studies in Management*, *11*(13). https://doi.org/10.5861/ijrsm.2023.1170

Du, W. (2023). Neural network in aircraft customer satisfaction prediction. *Advances in Economics, Management and Political Sciences*, *38*, 19-29.

Durmaz, Y., & Baser, M. Y. (2023). A Systematic Literature Review on Artificial Intelligence Applications in Tourism Marketing. *International Journal of Research in Business Studies and Management*, *10*(1), 21-30.

Durmus Senyapar, H. N. (2024). Artificial Intelligence in Marketing Communication: A Comprehensive Exploration of the Integration and Impact of AI. *Technium Social Sciences Journal*, *55*, 64-81. https://doi.org/10.47577/tssj.v55i1.10651

E, A., A.A, J., E.J, E., & Rosemary, M. (2021). Service Quality and Passengers' Loyalty of Public Transportation Companies. *British Journal of Management and Marketing Studies*, *4*(4), 82-98. https://doi.org/10.52589/bjmms-lrq7javx

Farooq, M., Muhammad, S., Raju, V., Kalimuthu, K. R., & Qadir, A. (2019). Measuring and comparing the desired and actual service quality of Pakistan international airline. *The Journal of Social Sciences Research*, *5*(2), 484-490.

Fu, Y.-K. (2023). Airline brand image, passenger perceived value and loyalty towards full-service and low-cost carriers. *Tourism Review*.

Fu, Y. K. (2023). Airline Brand Image, Passenger Perceived Value and Loyalty Towards Full-Service and Low-Cost Carriers. *Tourism Review*, *78*(6), 1433-1451. https://doi.org/10.1108/tr-07-2022-0369

Gajbhiye, C. K. (2024). Impact of Artificial Intelligence (AI) in Library Services. *International Journal for Multidisciplinary Research*, *6*(3). https://doi.org/10.36948/ijfmr.2024.v06i03.22452

García-Madurga, M.-Á., & Grilló-Méndez, A.-J. (2023). Artificial Intelligence in the tourism industry: An overview of reviews. *Administrative Sciences*, *13*(8), 172.

Geske, A. M., Herold, D. M., & Kummer, S. (2024). Artificial intelligence as a driver of efficiency in air passenger transport: A systematic literature review and future research avenues. *Journal of the Air Transport Research Society*, 100030.

Ghosh, S., Ness, S., & Salunkhe, S. (2024). The Role of AI Enabled Chatbots in Omnichannel Customer Service. *Journal of Engineering Research and Reports*, *26*(6), 327-345. https://doi.org/10.9734/jerr/2024/v26i61184

Guerrini, A., Ferri, G., Rocchi, S., Cirelli, M., Piña, V., & Grieszmann, A. (2023). Personalization@ scale in airlines: combining the power of rich customer data, experiential learning, and revenue management. *Journal of Revenue and Pricing Management*, *22*(2), 171-180.

Guo, M., & Ma, J. (2022). The Impact of Airport Facility Service Quality on Brand Experience and Passenger Satisfaction: Considering the Mediating Role of Brand Engagement. *Future Transportation*, *2*(2), 501-521. https://doi.org/10.3390/futuretransp2020028

Hendrawan, D., & Anggraeni, R. (2020). Is the Loyalty Program Effective in Creating Loyalty Program Satisfaction and Store Loyalty? An Evidence From Indonesia Retail Industry. *Jurnal Aplikasi Manajemen*, *18*(4), 645-655. https://doi.org/10.21776/ub.jam.2020.018.04.04

Heshmati, A., Kumbhakar, S. C., & Kim, J. (2018). Persistent and Transient Efficiency of International Airlines. Vol 18 No 12 (2018). https://doi.org/10.18757/ejtir.2018.18.2.3231

Hua Liu, H. B. (2024). Learning Evaluation Method Based on Artificial Intelligence Technology and Its Application in Education. *20*(3s), 1833-1842. https://doi.org/10.52783/jes.1722

Huang, Y.-T. (2022). Responding to Customer's Decision-Making Intention in Pandemic Scenario: Indicators for Choosing the Right Marketing Automation Platform. *International Journal of Business Studies and Innovation*, *2*(4), 1-9. https://doi.org/10.35745/ijbsi2022v02.04.0001

James, B., Joseph, D., & Sharma, T. (2024). Transforming Banking Services: AI-Driven E-Loyalty Strategies and Case Study Insights on Customer Satisfaction and Loyalty Enhancement. https://doi.org/10.4108/eai.23-11-2023.2343232

Kamel, H. (2022). Artificial Intelligence for Predictive Maintenance. *Journal of Physics Conference Series*, *2299*(1), 012001. https://doi.org/10.1088/1742-6596/2299/1/012001

Kamkankaew, P., Thanitbenjasith, P., Sribenjachot, S., Sanpatanon, N., Phattarowas, V., & Thanin, P. (2024). How Artificial Intelligence Is Helping Businesses Grow and Thrive: The Transformative Role of Artificial Intelligence in Thai B2C Digital Marketing. *4*(1), 137-164. https://doi.org/10.60027/ijsasr.2024.3651

Khana, A., Abdul Hamid, A. B., Saad, N. M., & Arif, A. R. (2023). Effectiveness of Artificial Intelligence in Building Customer Loyalty: Investigating the Mediating Role of Chatbot in the Tourism Sector of Pakistan. *International Journal of Academic Research in Business and Social Sciences*, *13*(9). https://doi.org/10.6007/ijarbss/v13-i9/18422

Kichuk, Y., Filipishyna, L., Ivanov, A., Hopkalo, L., Konarivska, O., & Soloviova, O. (2023). Innovation Management in the Hospitality Industry. *Iop Conference Series Earth and Environmental Science*, *1269*(1), 012007. https://doi.org/10.1088/1755-1315/1269/1/012007

Kumar, V., Rajan, B., Venkatesan, R., & Lecinski, J. (2019). Understanding the role of artificial intelligence in personalized engagement marketing. *California management review*, *61*(4), 135-155.

Law, R., Lin, K. J., Ye, H., & Fong, D. K. C. (2024). Artificial intelligence research in hospitality: a state-of-the-art review and future directions. *International Journal of Contemporary Hospitality Management*, *36*(6), 2049-2068.

Lee, S., Lee, S.-K., & Park, J.-W. (2024). The Effect of Service Quality and Sustainability Practices on Brand Equity: The Case of Korean Air Passengers. *Sustainability*, *16*(11), 4606. https://doi.org/10.3390/su16114606

Limna, P. (2023). Artificial Intelligence (AI) in the hospitality industry: A review article. *International Journal of Computing Sciences Research*, *7*, 1306-1317.

Mandapuram, M., Gutlapalli, S. S., Reddy, M., & Bodepudi, A. (2020). Application of Artificial Intelligence (AI) Technologies to Accelerate Market Segmentation. *Global Disclosure of Economics and Business*, *9*(2), 141-150. https://doi.org/10.18034/gdeb.v9i2.662

Misra, R. R., Kapoor, S., & Sanjeev, M. A. (2024). The Impact of Personalisation Algorithms on Consumer Engagement and Purchase Behaviour in AI-Enhanced Virtual Shopping Assistants.

Mumtaz, A. K. (2024). Tax with AI. *Dawn*. https://www.dawn.com/news/1828929

Nastasoiu, A., & Vandenbosch, M. (2019). Competing With Loyalty: How to Design Successful Customer Loyalty Reward Programs. *Business Horizons*, *62*(2), 207-214. https://doi.org/10.1016/j.bushor.2018.11.002

None, N., Almansour, H., None, N., Luo, S., None, N., Lin, Y., & None, N. (2024). A Review of Recent Advances in Internet of Things-Based Customer Relationship Management to Improve Customer Satisfaction and Loyalty in the Airline Industry. *International Journal of Advanced and Applied Sciences*, *11*(1), 10-19. https://doi.org/10.21833/ijaas.2024.01.002

Pérez-Campuzano, D., Ortega, P. M., Andrada, L. R., & López-Lázaro, A. (2021). Artificial Intelligence Potential Within Airlines: A Review on How AI Can Enhance Strategic Decision-Making in Times of COVID-19. *Journal of Airline and Airport Management*, *11*(2). https://doi.org/10.3926/jairm.189

Peruchini, M., da Silva, G. M., & Teixeira, J. M. (2024). Between artificial intelligence and customer experience: a literature review on the intersection. *Discover Artificial Intelligence*, *4*(1), 4.

Pholsook, T., Wipulanusat, W., & Ratanavaraha, V. (2024). A Hybrid MRA-BN-NN Approach for Analyzing Airport Service Based on User-Generated Contents. *Sustainability*, *16*(3), 1164. https://doi.org/10.3390/su16031164

PID. (2024). *FBR Collects Rs. 1,588 billion in Gross Revenue in first two months of 2024-25* https://pid.gov.pk/site/press_detail/26307

Purnawati, E. (2024). The Influence of Digital Technology on Marketing Strategy. *1*(3), 432-446. https://doi.org/10.62207/f4s8px08

Rahmania Az Zahra, A., Jonas, D., Erliyani, I., Rosdiana, N., & Aprila Yusuf, N. (2023). Assessing Customer Satisfaction in AI-Powered Services: An Empirical Study With SmartPLS. *International Transactions on Artificial Intelligence (Italic)*, *2*(1), 81-89. https://doi.org/10.33050/italic.v2i1.432

Raza, M., Salleh, S., Tariq, B., Altayyar, R., & Shaari, H. (2020). Investigating the effects of customer-based brand equity on turnover intentions with mediating effect of customer citizenship behavior. *Management Science Letters*, *10*(2), 279-286.

Said, S. (2023). The Role of Artificial Intelligence (AI) and Data Analytics in Enhancing Guest Personalization in Hospitality. *Journal of Modern Hospitality*, *2*(1), 1-13.

Santoso, W., Safitri, R., & Samidi, S. (2024). Integration of Artificial Intelligence in Facial Recognition Systems for Software Security. *Sinkron: jurnal dan penelitian teknik informatika*, *8*(2), 1208-1214.

Selase, A. E. (2018). Building image in the airline industry. Pakistan international airline as the point of convergence. *International Journal of Recent Advances in Multidisciplinary Research*, *5*(5), 3830-3834.

Semwal, R., Ranjan, S., Dhama, A., Chauhan, A., Bairwa, M. K., & Madhav, R. C. (2023). *Conceptual Framework: Leveraging Artificial Intelligence for Enhanced Travel Review Analysis and Insights.* 2023 6th International Conference on Contemporary Computing and Informatics (IC3I),

Shah, F. T., Syed, Z., Imam, A., & Raza, A. (2020). The impact of airline service quality on passengers' behavioral intentions using passenger satisfaction as a mediator. *Journal of Air Transport Management*, *85*, 101815.

Shedrack Onwusinkwue, N., Femi Osasona, N., Islam Ahmad Ibrahim Ahmad, N., Anthony Chigozie Anyanwu, N., Samuel Onimisi Dawodu, N., Ogugua Chimezie Obi, N., & Ahmad Hamdan, N. (2024). Artificial Intelligence (AI) in Renewable Energy: A Review of Predictive Maintenance and Energy Optimization. *World Journal of Advanced Research and Reviews*, *21*(1), 2487-2799. https://doi.org/10.30574/wjarr.2024.21.1.0347

Soliman, Y. R., Fathy, A. M., & Soliman, M. R. (2024). The Effect of Artificial Intelligence on Strategic Agility of Airlines: EgyptAir as a case study. *Journal of the Faculty of Tourism and Hotels-University of Sadat City*, *8*(1/1).

Song, H., Ruan, W., & Park, Y. (2019). Effects of service quality, corporate image, and customer trust on the corporate reputation of airlines. *Sustainability*, *11*(12), 3302.

Soomro, M. S. (2018). PIA ACCOUNTING SYSTEM. *Journal of Information Communication Technologies and Robotic Applications*, 40-48.

Stolyarov, A. D. (2023). Model of a module for dynamic generation of personal offers of additional services for airline passengers. https://doi.org/https://doi.org/10.35854/1998-1627-2023-3-335-344

Tian, H., Presa-Reyes, M., Tao, Y., Wang, T., Pouyanfar, S., Miguel, A., Luis, S., Shyu, M.-L., Chen, S.-C., & Iyengar, S. S. (2021). Data analytics for air travel data: a survey and new perspectives. *ACM Computing Surveys (CSUR)*, *54*(8), 1-35.

Tulcanaza-Prieto, A. B., Cortez-Ordoñez, A., & Lee, C. W. (2023). Influence of Customer Perception Factors on AI-Enabled Customer Experience in the Ecuadorian Banking Environment. *Sustainability*, *15*(16), 12441. https://doi.org/10.3390/su151612441

Vaze, V., & Barnhart, C. (2015). The Price of Airline Frequency Competition. 173-217. https://doi.org/10.1007/978-3-319-13009-5_7

Verma, S. (2024). Artificial Intelligence and Machine Learning in Aviation Industry. *International Journal For Multidisciplinary Research,* *6*(2), 1-11, https://doi.org/10.36948/ijfmr.2024.v06i02.17562

Weber, M., Engert, M., Schaffer, N., Weking, J., & Krcmar, H. (2022). Organizational Capabilities for AI Implementation—Coping With Inscrutability and Data Dependency in AI. *Information Systems Frontiers*, *25*(4), 1549-1569. https://doi.org/10.1007/s10796-022-10297-y

Wu, K. (2023). *A Survey of Deployment of Artificial Intelligence.* EAI https://doi.org/10.4108/eai.23-12-2022.2329084

Yang, X. (2023). The Effects of AI Service Quality and AI Function-Customer Ability Fit on Customer's Overall Co-Creation Experience. *Industrial Management & Data Systems*, *123*(6), 1717-1735. https://doi.org/10.1108/imds-08-2022-0500

Yasim, M. A.-A., & Zaini, A. F. A. (2022). The influence of service quality towards customer satisfaction with low-cost airlines in Malaysia. *Jurnal Evolusi*, *3*(2), 1-12

Zou, L. (2024). Hybrid Teaching Model of College English Based on Collaborative Filtering Recommendation Algorithm. *J. Electrical Systems* *20*(3s), 1756-1766. https://doi.org/10.52783/jes.1715