

**Impact of Social Media on Passengers buying
Behavior with the moderating effect of Brand Loyalty**

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Submitted in the partial fulfillment of the requirements of the Degree of BS Aviation
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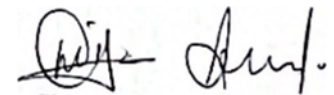
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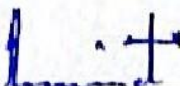
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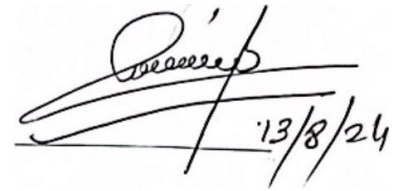
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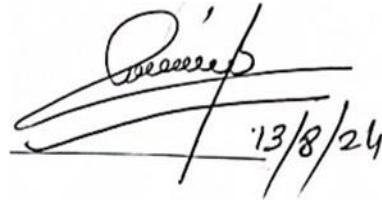
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ABSTRACT

The aim of this study was to investigate the impact of social media on passenger buying behavior, with brand loyalty as a moderating factor, in Pakistan's airline industry. The aviation sector has undergone significant changes due to technological advancements and evolving passenger behavior. Social media and AI have become crucial tools for reshaping promotional strategies and customer engagement. Using a quantitative approach, this research explores how these tools influence passenger decisions and loyalty to specific airlines. It examines how social media information and AI-driven recommendations affect customer choices and highlights the importance of retaining loyal passengers in an increasingly competitive market. Analysis demonstrate that social media significantly impact buying behavior and emphasize that brand loyalty is crucial for passenger retention. Effective use of these tools can enhance customer satisfaction, engagement, and loyalty, providing valuable insights for airlines to improve marketing strategies. The study, based on a sample of 201 passengers who traveled at least five times in a year, offers future research directions, such as exploring other moderating factors, long-term effects, and comparative studies across different industries and countries.

Keywords: *Social media, artificial intelligence, passenger buying behavior, brand loyalty aviation industry.*

DEDICATION

We Dedicate this Thesis our batch advisors “Sir Bilal Ahmed” & “Ma’am Amna Hafeez” and supervisor as well as our teacher “Sir Shahid Mehmood”.

Our advisor’s guidance, their feedbacks and their support that encourages us throughout this journey. The Expertise, untiring support and patience of our supervisor “Sir Shahid Mehmood” has directed us through the complications of this research.

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CHAPTER 1

INTRODUCTION

The aviation industry has seen significant changes in recent years, driven by the advancements in the technology and shifts in consumer behavior. social media have emerged as a powerful tool that influence the passengers buying behavior reshaping the traditional marketing strategies and customers' engagement. With the passage of time the digital technologies have interfered with the traditional business practices (Krbová & Pavelek, 2020). If any of the conventional business do not understand the impact of the digital technologies, then the risk will become more. Same is the case with the airline industry as we see that the technology is taking place day by day the more complex the competition becoming with the other airline and is getting difficult to understand the buying behavior of the passenger as it is the era of social media and the artificial intelligence (X. Chen et al., 2020). Let us look in to the example of the Nokia, which is a major mobile phone company producer in 1990's but failed in the business to adopt to the new technologies and now he is not the market leader (Krbová & Pavelek, 2020) . So similarly, the existing similar traditional retailers are facing the challengers as a younger consumer are preferring the social media decision they make by their own which is (at the back end) using the artificial intelligence. This is now changing the business modes of communication, involving both social media to stay parallel (Benbya et al., 2020). The main object here clarifies that the influence of the AI and social media on a consumer purchase intention is very crucial in this technical world (Hu et al., 2019). This new evolution has created many potentials and the opportunities within the industry of commerce and trade to this extent that its now changing that how the passengers are responding to making the decisions of purchases as exposure to a variety of airlines for its quality and service is becoming accessible (F. A. Shaw et al., 2021). The social media marketing has transforming the passenger engagement by making them the active participants in-stead of the observer. This is a technique by how the known airlines and the consumers without the constrains of time or communication methods can enable the two-way interaction instead of making it one way (A. Kim & Ko, 2012). This revolution has now touched the entire world a Pakistan is also familiar with this we have also observed that there has been such a rapid growth of social media in Pakistan with many millions of users estimated 19 million plus users for the social communications are there Kemp (2020). Nonetheless, despite the increasing practical importance of social media and its increasing impact on the consumer

engagement in the online area which encompasses all social sites/domains this aspect of the research is still under study because the social media algorithms and the updates in these are progressing day by day so, they are still under research (Fournier & Lee, 2009). This current study aims for investigating those special effects of social media and thus the artificial intelligence on the consumer purchase (pointing the Pakistani customers) and their brand loyalty (Payne et al., 2020). The importance of the aviation industry for the economic development of a country cannot be denied. It enables the movement of people and goods within the country and abroad. Since the beginning of this decade, the air transport industry has become more competitive, leading many airlines to improve service quality (SQ) to increase passenger satisfaction (Ferreira, 2021). (Aksoy et al., 2022) state that marketing today involves understanding, creating, communicating and delivering customer value and satisfaction and emphasizes customer focus. Therefore, ensuring customer satisfaction has become an important goal for businesses. To achieve this, airlines have adopted new strategies such as the use of in-flight entertainment (IFE). (Alamdari, 1999) noted that IFE (including audio and video technology) is becoming increasingly attractive in the aviation industry. Suitable for all types of flights, these systems have many options such as video on demand, music channels, telephone services, data centers, gambling, financial services, external cameras, flight maps and computer games (Jiang & Wen, 2020a). These features are designed to enhance the passenger experience by making passengers more comfortable and enjoyable during flight. A happy trip can foster positive interactions and influence passengers' willingness to repurchase the service in the future. Additionally, increasing passengers' awareness of available services and features can increase satisfaction and trust (Shah et al., 2020). The significance, such as the longevity and significance of the legacy, use of symbols, and belief in the founding. They believe that brand loyalty allows a brand to secure its future by leveraging its past and present values (J. Lin et al., 2017). They liken monarchy to a kind of inheritance, where communication marks history as part of itself. For this reason, Loyalty of brand wants to increase the stability of its image and strengthen the trust of customers by connecting to the past without giving the idea of an outdated company (Taqi & Muhammad, 2020). Wiedemann's extensive research focuses on the German automobile industry, examining the various causes and consequences of legacy. In contrast, Merchant and Ross's study explored the specificity of the product's underlying benefits to the overall economy in the advertising context, without focusing on its social impact quality. Recently, (Alayli, 2023) tested the impact of loyalty on consumer needs and found that loyalty

brands have positive and cognitive qualities such as emotional quality and loyalty. The application and evaluation of loyalty brands can also be found in the travel industry (Mirzaalian & Halpenny, 2021). This study aims at the moderating effect of the brand loyalty with the context of how a passenger will act to it by purchasing or like what kind of the buy behavior would be of a passenger when it comes to the decision made a consumer reaching a social media post either made through an artificial intelligence or using the AI algorithm. In recent years, the influence of social media on consumer behavior has become increasingly significant, especially in the airline industry. A passenger's decision-making process when exposed to a social media post, whether created with artificial intelligence (AI) or optimized with AI algorithms, can be complex and multifaceted. Social media platforms serve as critical touchpoints where airlines can interact with potential customers and provide customized content that can significantly influence purchasing behavior (A. Kaplan & Haenlein, 2019) When a traveller encounters a social media post generated or enhanced by artificial intelligence, several psychological and behavioral factors come into play. AI algorithms analyse vast amounts of data to create personalized and relevant content that resonates with individual preferences and past behavior. For example AI can use a passenger's browsing history, search queries, and previous interactions with airline content to tailor posts that highlight specific destinations, promotions, or services that align with the traveller's interests (Gallego & Font, 2021). This level of personalization increases the likelihood of engagement and can lead to a more favourable perception of the airline, which ultimately influences purchase decisions. Research shows that travellers are more likely to trust and engage with content that appears personalized and relevant to their needs. A study by (Samarah et al., 2022) found that personalized social media marketing efforts significantly increased consumer engagement and brand loyalty. When passengers perceive that an airline understands their preferences and offers tailored recommendations, they are more inclined to form a positive emotional connection with the brand. This connection can translate into increased booking intentions and higher customer retention rates. Additionally, the immediacy and interactivity of social media posts can encourage quick decision making. AI driven content often includes real time offers and dynamic pricing that can create a sense of urgency. For example, limited time discounts or flash sales promoted through social media posts can drive instant bookings. Affected by the fear of missing out (FOMO), travellers may make snap purchase decisions to take advantage of these exclusive offers (Fitri & Millanyani, 2023). The role of social proof and peer influence on social networks cannot be

underestimated either. AI algorithms often highlight user generated content such as reviews, testimonials and travel photos, which can influence potential customers. When passengers see positive feedback and shared experiences from other passengers, it enhances the credibility of the airline and increases their confidence in purchasing (Shen & Yahya, 2021). This aspect of social proof, combined with personalized content, increases the overall persuasiveness of social media posts. In addition, the integration of AI chatbots on social media platforms facilitates instant interaction and assistance, which can be crucial in the decision-making process. Passengers looking for more information or clarification about flights, services or promotions can engage with these chatbots and get immediate and accurate answers. This level of customer service availability can significantly influence travellers' purchasing decisions because it reduces friction and uncertainty in the purchasing process (Wu, 2024).

Background of Study

Airline industries are highly dynamic and are also considered highly competitive as the companies within the industries constantly seeks innovative ways to attract and grab the customer's attention (Deloitte, 2023) Within the recent years it has been observed that the expansion in the AI and the excessive use of the social media platforms have transformed it significantly that how will an airline can interact with the passengers. This research is gathered around the study of the passengers' knowledge and their influence in buying behavior from the impact of social media and artificial intelligence (Mari et al., 2023a). The advancement in the technological growth have created many opportunities for the passenger knowledge which influenced the passenger purchasing behavior and fostering the brand loyalty (Unkefer, 2020). The involvement of AI and social media both led to a proper informed and well-connected passenger base. As passengers have now the access to the information about the airlines, including the reviews as well as service and the quality and the promotions offered by different airlines which influence the purchasing decision of the buyer (passenger). The usage of the social media for the promptly response to the passenger queries and the concerns on social media can enhance the customer satisfaction and loyalty (Kemp, 2023). The study revolves around the impact of these AI tools and the role of social media on the passengers' knowledge and its influence on various aspects. Artificial intelligence on one side, encompass a range of machine learnings to simulate the human performance and tasks that requires the human cognition such as problem solving and the decision making and in airline industry (Craig et al., 2024) AI tools and applications are very diverse and multitasked i.e. the

Chatbots are now used and different personalized systems are now used for the customer service to improve the level of service and to promote the loyalty. For example, AI powered chat bots can handle the passengers' inquiries from the flight updates (Kumar, 2024) and the purchasing modifications which provides the quick response and will free the man agent from multiple complex tasks. On the other hand, social media has altered that how an airline communicate with their customers through the graphics and the creative content on social media platforms like Facebook (Elemonie, 2020a). Instagram, LinkedIn and others for the purpose of marketing for their brand and the customer engagement for the brand management. The power of social media enables the airline to target the right audience and to share the constant updates so that they can interact with the passengers (Perez-Aranda et al., 2018). This sense of the community engagement makes the passengers feel valued and in return they give loyalty. However, the study involves around the question that how will a passenger respond to the various airline if they present the better service using the social media? Will they change their mind set to switch to another airline or will it change their buying behavior and if that so then what will have happened to their brand loyalty? The wide range of information that is available on internet through AI and social media has permitted passengers to make better (A. J. Kim & Ko, 2012). So that they can compare the available flight options, read the reviews and gathered he detailed information about several airlines. Such availability has shifted the dynamics of giving the passengers more control over the travel choices. Those airlines which provides the leverage of both AI and social media provides accurate, timely and relevant information which can gain a competitive edge by grabbing and attracting more detailed and refined customers (Xiang et al., 2017a). It is known that the brand loyalty is dependent on multiple factor i.e. service quality, offers, various experience and emotional connection with the brand (Afshan et al., 2017). AI and social media play an important role in enhancing these aspects. The loyalty with the customers would be considered loyal if the privacy and the data would be secured and airlines that are using any of the tools should ensure all algorithms are unbiased and will maintain the passengers trust (Gómez et al., 2022).

Research Scope:

As it comes to the scope so this study basically deals focus on the main passenger's behavior in the airline industry that how the social media will affect them through different algorithms so that there may be any change in their purchasing decisions which will impact the brand loyalty. There is a connection between the AI algorithms and the social media posts throughout that have an

impression on the consumer and through that either he will change his decision to switching onto the other airline and this will impact the brand loyalty. Different research methods and the analysis will be used in this research.

Field of Study:

This research contributes to the depth in understanding the combination between the technology and the behavior of consumer in the airline industry. The impact of AI and social media on the passengers buying decisions will provide the valuable insights about the airlines which can effectively utilize such tools for the customers' satisfaction (Lestari & Murjito, 2020). The field of study includes

Consumer decision making process:

Different AI algorithms analyse the wide amount of the data to personalize recommendations for different flights and offers so that the customer can make the decisions quickly within the available options under their budget (Ledro et al., 2022). The social websites like FareMakers, TripAdvisor and twitter provides the user generated content which enables the consumer decision positively or negatively based on reviews (Mari et al., 2023b). The AI tools like Chatbots and Virtual assistants are helping in providing the real time assistance, answering the queries and giving the proper guidance to the customers for the booking process. Airlines are using the social media for engaging the customers directly by addressing their concerns while providing the updates and sharing the promotional posts with them so that they can influence their decision making whereas, AI algorithms predict the changes in fare which then help the buyer to decide the best moment to buy tickets (SITA, 2021)

Purchasing Behavior:

The purchasing behavior of the consumer depends upon his decision viewing the aspects of pricing, inflight services, baggage delivery and the most important in the opinion should be the brand image while also its scheduled flight and its direct routes (Oliver, 1993) Out of it almost 51% of the travellers say that they choose their airline by pricing behavior and 17% of the travellers prioritize the direct flight so that they buy their tickets accordingly (Voxpopme, 2024). In this regard the AI aligns the bookings through various user-friendly interfaces and upgraded automated systems for enhancing the purchasing experience. The behavior of the passenger can be determined

by the limited time offers on social media by different airlines because of the fear of missing out (Hudson & Thal, 2013a). There is a concept of purchasing the tickets as early as possible because of the lesser prices of the tickets. In this case the AI uses the dynamic pricing strategies by slightly adjusting the fares based on the demand and the competitive pricing which can drive the purchasing decisions (L. Chen et al., 2018). so, by this the travellers group create deals and can provide benefits to the consumers for the trips.

Brand Loyalty:

Brand loyalty is a crucial concept within the realm of marketing and consumer behavior for the section of airline industry. Brand loyalty refers to the context to which a consumer continuously chooses and prefers the same airline in which he is travelling for the same kind of product and service as this loyalty is based on the deep trust, satisfaction and positive experience associated with brands over time (Lam et al., 2014). The brand loyalty is characterized by the repeat purchase and a willingness to pay premium prices as well as the positive word of mouth recommendations from the loyal customers as AI plays a significant role in shaping passenger buying behavior (Kotler et al., 2009). Usually the passenger buying behavior in the airline industry is impressed by the various factors with brand loyalty being a key commitment. When a passenger exhibit the brand loyalty towards airline then they will more likely to choose the airline they travel consistently as it may stem from different combinations like value for money, reliable service and emotional connection with such brand (Lauren Hayden, 2021) For a loyal customer base can provide the steady revenue stream and can reduce the cost associated with acquiring new customers (Joseph et al., 2020) and this is how this loyalty will further increased the passengers retention rate as the repeated customers are more likely to book future flights with same airline even if it is more cheaper solutions are available. According to (H.-Y. Kim et al., 2013), the brand loyalty programs that reward frequent flyers with benefits like priority boarding, free upgrades and many exclusive offers can enhance the perceived value of the brand thereby they strengthen customer loyalty.

Research Gap

- There is a limited understanding of how the artificial intelligence driven recommendations on the social media platforms interact to affect the buying behavior of passengers.
- There is lack of detailed studies and researches on how personalized AI marketing strategies through social media impact the brand loyalty and subsequent buying behavior.

Research Objectives

- i. Analyse the influence of AI on passengers purchasing behavior.
- ii. Interrogating the role of social media in shaping the passenger's behavior towards brand loyalty.
- iii. Recommendations for the airlines to optimize their marketing strategies.

Research Questions:

- i. How does AI impact passenger buy behavior in the aviation industry?
- ii. What role of social media play in influencing the passenger decisions?
- iii. How can airline leverage AI and Social media to improve customers' engagement and sales to make them loyal with brand?

Theories

Technology Acceptance Model

- “The trust in hosts and different platforms influences the customer engagement and loyalty including the focus of artificial intelligence” (Davis, 1985).

The technology acceptance model (TAM) developed by Fred Davis in 1985. Posits that user acceptance of technology is influenced primarily by perceived ease of use and perceived usefulness. Trust in technology platforms significantly impacts customer engagement and loyalty, particularly in the context of artificial intelligence. Users are more likely to embrace AI and social media driven applications when they perceive these technologies as a secure and reliable. This theory determine that personalized

services powered by AI and social media enhance customer experience, driving deeper engagement and fostering brand loyalty. Overall, the relationship between trust, customer engagement and loyalty within the (TAM) emphasizes the need for a secure and user friendly environment specially as AI and social media continues to shape consumer interaction across various platforms.

Social cognitive theory

- Theory on the impact of social media studies how social media (tools like YouTube, Facebook, LinkedIn and Instagram etc.) form consumers' choices and preferences. It discovers that how decisions are made on the bases of observation on social media, feedbacks, reviews, interactions and experience impact the individual's behavior (Bandura, 1986).

This theory emphasizes the role of observational learning, imitation and modeling and shaping individual behaviors and decisions. In the context of Social media platforms, this theory highlight's how consumer's choices and preferences are influenced by the content they observed. Users learns from the experiences and feedback and reviews shared by others, which can significantly impact their attitude and behaviors towards products and brands.

Hypothesis:

- H1:** Artificial intelligence has positive impact on passenger buying behavior.
- H2:** Social media has positive impact on passenger buying behavior.
- H3:** Brand loyalty moderates the relationship between social media and passenger buying behavior.
- H4:** Brand loyalty moderates the relationship between Artificial Intelligence and passenger buying behavior.
- H5:** Integration of artificial intelligence and social media positively influence passenger buying behavior.

CHAPTER 2

LITERATURE REVIEW

Artificial Intelligence

Artificial intelligence is a replication of the human behavioral intelligence which is processed by machines mainly the computer systems (Craig et al., 2024). As artificial intelligence is getting a gain the service sector is utilizing it to promoting the products and services although an important feature of AI is that the circumstances of its concern turns out much difficult to define (Pothen, 2022). AI is now getting necessary for the potential that how can we live and work using it. The effective and attractive use of AI is used in business for the automation of various tasks done by human which includes generating the leads for the business progress, quality control and even fraud detection (Craig et al., 2024) So that even if a human error could occur then AI would be enough able to detect and makes changes. In aviation mostly, organizations have raised the need to use the AI for transforming the operations with better improvement and efficiency. The results align under limited focus in AI and machine learning skills having valuable grip on digital skills (Kabashkin, Misnevs, & Puptsau, 2023). Basically, the research revolves around the impact created by the AI in passengers buying behavior in a collaboration with the social media because the stakeholders and the aviation managers are in a search of improving this everyday business. Ricardo V. Pilon the author highlights that how will this machine learning and AI will improve the performance in the airline industry (Pilon, 2023).

This AI related research portrays the human capabilities as a main source of advantage for the decision making, as these are potentially heterogeneously divided (Helfat & Peteraf, 2009) Such potential capabilities guide to the performance differences when is used by a manager so the strategic decision making as well as problem solving. Here the main aim is to maintain the loyalty of the consumer with the brand by AI and social media the main point or the gap to be fulfilled is that how will the AI driven recommendations on the social media platforms interact to grab the attention of the consumer to affect the purchasing behavior. So here the decision making is very necessary in understanding the human psychology (Chowdhury, 2024).

Dimension of AI

Impact of AI on personalization in marketing

Within the recent decades' airlines have shifted to more complex models and commercialized environments. Initially the airlines offer the competitive pricing all over, however the rise of purchasing through online sites having the involvement of the artificial intelligence effects the exclusivity of the airlines sales. The research revolves around that how these external and internal changes will impact the buying behavior of the passengers in future (Hirzallah & Alshurideh, 2023) by examining this buying behavior through quantitative research this research will seek to provide insights that will be helpful in the marketing strategies and for the innovation in the models. AI will improve the analysis and offer more precise suggestions (Leam, 2024) In the (S. Park et al., 2020) study about how the airline service quality, passenger's satisfaction and perceived pricing will influence the future behavioral intentions he examined the behavior of the Australian international air passengers and as a result there seems the significant relationship between most variables that were perceived price and passenger's satisfaction, quality of service and airline image and perceived value along with airline image (Davis-Sramek et al., 2009). The study here is providing the comprehensive perspective on the AI that how is the AI affecting the HR functions and elucidates the connection between the employee knowledge in providing the service quality to passengers (Nawaz et al., 2024). The airline industry relies heavily on the knowledge sharing and the ability to meet passenger's preference and in this the artificial intelligence the airline industry will improve the score for the better research for understanding AI and service quality. This will contribute to the deeper acknowledgement of the artificial intelligence in Pakistani airlines of how will this AI can transform HR. By examining the current training frameworks, it is concluded that the industry workforce needs the best AI education which will focus areas and competencies for aviation sector. The research done previously by (Kabashkin, Misnevs, & Zervina, 2023) in aviation engineering bachelors' program at European universities assessing the inclusions of AI topic like machine learnings and natural language processing. They are revealing that what competencies are essential for the future aviation workforce.

AI powered chatbots for customer service

The structural dimension of the AI linked with this study found that the AI chatbot service quality positively affects the customers' loyalty through the values perceived, cognitive trust and the satisfaction. The AI chatbot attributes the service quality and significant effect on the customers'

loyalty. It will expand the service quality research in the information system field and will adapt the chain model of quality loyalty of passenger to AI services (Q. Chen et al., 2023). Although AI is being introduced across various industry segments for the research on the customers behaviors towards artificial intelligence but is still emerging. Results tell us that AI information and the flexibility simultaneously influence the flow experience while the AI systems significantly affect customer brand identification which is mediating the relationship between the quality of artificial intelligence and the passenger's advocacy (Nguyen et al., 2022a). AI should also be used as a problem solving for the negative impact of the flight delays the study addresses this issue by supporting the machine learning and data mining tools use for the prediction of the flight delays. It would enhance passengers buying behavior by improving the overall trust in airline's reliability for future purchase decision (Alharbi & Prince, 2020)

AI in dynamic pricing

Due to the nature of passenger behavior and changes in the market, airlines face difficult problems in determining the best price. The integration of artificial intelligence (AI) provides the flexibility to solve these problems by using advanced data science and machine learning algorithms to improve pricing strategies. More information to identify patterns and ideas. For example, AI algorithms can process historical booking, search, and purchasing behavior data to accurately predict demand (Chung et al., 2016). Artificial intelligence can help companies adjust fares by understanding how variables such as season, economy, and price competition affect travelers (Sundaresan & Zhang, 2022). According to a study by (Dr. Sasidharan Murugan, 2024), profit increases for airlines using artificial intelligence for dynamic pricing are up to 5%. (M. J. Shaw et al., 2001) Optimization is the ability to perform instant analysis. Traditional pricing strategies often rely on outdated and historical data; this can be time consuming and ineffective. However, AI can constantly monitor the market and adjust the price of moisture according to current demand and supply (M. J. Shaw et al., 2001). For example, if the AI system detects sudden demand due to competing flight cancellations or local events, it can immediately recommend price adjustments for the benefit of the increased demand. (Garrow et al., 2021) Artificial intelligence can improve the identity of the price strategy. Companies can use machine learning algorithms to classify travelers based on various factors such as travel history, travel preferences, and demographic information (Xiao et al., 2018). Airlines can increase customer satisfaction and loyalty by reducing costs and providing differentiated customer experiences.

Ethical consideration of AI in travel industry

Artificial intelligence (AI) has become an integral part of decision-making processes across industries and raises ethical considerations that need to be carefully considered. In this ethics review, we dive into the key elements driving AI deployment. Transparency in AI involves making the decision-making process understandable and accessible to those affected by its outcomes. It is very important for people to understand how intelligent algorithms make specific (Brendel et al., 2021; Du & Xie, 2021). Transparency increases trust and enables more informed conversations between developers, users, and stakeholders. Trust is critical to the adoption of AI-driven decision making. Transparent AI systems can help users and stakeholders understand the principles behind the results, reducing uncertainty and doubt. Transparent algorithms allow decisions to be analyzed and explanations provided, helping to build trust, especially in important areas such as healthcare, finance, and criminal justice law. Biases in AI algorithms can cause or exacerbate existing inequalities. Whether resulting from biased training data or biased algorithmic processes, the consequences can be serious and result in biased or discriminatory treatment. Acknowledging and addressing biases is crucial to creating fair AI systems (Laux et al., 2024). Reducing bias involves integrating ethics, problem solving, and multiple representations in AI development. The code of ethics emphasizes the need to act against bias, be fair across different population groups, and use regular reviews to detect and correct errors that may occur throughout the life cycle of the AI system (Fulmer et al., 2022) Defining roles in artificial intelligence can be difficult. While developers play an important role, responsibility also extends to the organizations that use AI, the policymakers who create policies, and the users who interact with AI-generated products. Determining the chain of responsibility is important to ensure accountability. It is important to create a framework that reflects the role and consequences of AI decisions (Lee, 2021; Wang et al., 2021)

Defining Social Media and Airlines social media adoption

To focus on interaction, communication, collaboration, and content-delivery, a conjointly term is called Social media. Different social websites and applications such as Facebook, Twitter, Instagram, YouTube etc. used for various purpose such as expanding social circle by interacting with numerous communities, friends and family. Social media for business helps to connect with the customers directly to understand the consumer demand and behavior, market trends, also to

introduce new businesses (Lutkevich & Wigmore, 2021). The internet has changed the world a lot in past couple of years. The usage of internet has been seen in a different way by the people for buying and shopping things online. It revolutionized the way of interaction between the marketers and the consumers (Hennig-Thurau et al., 2020). Consumers are learning about the information either from the users or from peers by the help of social media (Kozinets, 2019).

As the researcher observed that not only a single industry, almost all the industry is taking benefits from social media platforms. Airline industry targeting the wider range of the customers through social media platform as compare to the traditional marketing. Brand personality build by Airlines, connects the customers with the airline more deeply (Samotolkova, 2019). Airlines positive behavior towards social media brings the opportunities for their product promotion and brand growth. On the other hand, with the help of passenger experience feedback, Airlines are continuously improving passenger services (Bartoš & Badánik, 2019). The interaction between the Airlines and the users on social media will result the understanding of the content that attract the customers towards their brand. All analysis by the user such as posts, content and other user's feedback will be helpful for the consumer decision making.(Heiets et al., 2024)

Facebook as a social media tool

A platform that ties the people of same interests or share your interest with family and friends. Discovering new people, groups even connects with the public markets. People all over the world are connected on this platform. With ads the advertisers can reach wide range of people. (META, 2024) It is easy to access from anywhere like phones, pc, laptops, and tablets with internet connectivity. To make connection better with people it offers the direct communication app messenger (Wikipedia, 2024) . Facebook is also helping new businesses to grow and existing businesses to boost their revenue and profit. Facebook. Between businesses and customers, Facebook let two-way communication. This connection helps in directly contact or interaction between customers and business. Also allows experiences customers review and feedback that help others to make efficient decision (Nibusinessinfo, 2024). In aviation, Airline industry is also adopted the social media strategy to target wide range of travelers around the world. In Aviation Industry, The Director General of IATA states that financially the industry is doing great. The expectation on the passenger demand will increase up-to 7% which is good news for the industry that means more opportunities and jobs will be created. Airlines will get relief from the debt when

they will be able to pay. Investor will also take benefits with that increase (IATA - AGM 2019 News, n.d.). (Xiang et al., 2019) emphasized that how Facebook is used by the Air-Passenger to gather info about the airlines also the feedback from the face book page or group can influence their decisions. On face book, friends or family that shared positive experience can help airlines to be trusted and vice versa (Liu & Brown, 2024). Study by (Chou et al., 2023) and (Dolan et al., 2019) explore how face book connect the passengers with brand emotionally and face book create brand image leverage by airlines.

Instagram and its importance in airline industry

Application which is available for both android and iPhone for sharing photo and video. Pictures and videos can be shared on Instagram with followers of friend groups. Sharing, commenting, liking and posting by others is facilitated by Instagram. It can also access on website. The new technology AI on Instagram make user friendly environment making others entertained more productive. With ads the advertisers can reach wide range of people. Instagram platform has proofs that a lot off business succeed and grow from this platform. Airlines also adopted Instagram marketing strategy to compete in the market. Airlines stimuli passenger for travel decisions with its filmic and pictorial nature in such a way that the passengers make their travel plan from beginning to end and make your mind to travel, choosing destinations and on which airline to travel with (Anagnostopoulou et al., 2020). People sharing their experience on social media about the traveling can motivate and stimulate others to have a same experience by visiting the same place and traveling from the same Airline (Hays et al., 2022). The reason why people make travel choices might not be the Instagram but it can be the reason of inspiration and information. The travelers actively choose Instagram before planning a trip. It helps people to discover places, dream to visit, and decide their upcoming adventure or even offer to share the stories where you travel (Crompton, 2022). Besides, study by (Buhalis et al., 2019) advises that the real traveler sharing photos, videos or stories can be a powerful tool than the airline or other companies' ads.

Twitter

People share pictures, videos, and messages on a free platform called Twitter. People use twitter to find out the current affairs of the world like updated news also people find the different offers from the companies. A plat form where fan follow their celebrity stars, leaders and experts.

Breaking headline such as flight 549 US Airways landed first time on the water at Hudson river, New York City (Hetler, 2024). Airline industry also became a part of this platform where they use twitter to understand the customer demand and to fix the issues after getting feedback. On twitter, Airline keep their eyes on what people saying about them. In this way Airlines can understand the psyche, like and dislike of the people related to them. A study by (Rane & Kumar, 2018) Emphasized about the airlines such as Air Asia analyze the data of customer feedback on the service qualities that allows them to overcome the lack in their marketing strategy. On the other hand, passengers are also taking benefits from twitter. Research by (Ye et al., 2011) demonstrate that people use this platform so that they can ask questions from the airlines, complains of what they faced and good or bad experience. In this way airlines can look after them and solve problem efficiently and in result they keep customer their happy.

YouTube and its impact on airlines and passenger decision making

YouTube is one most using social media platform, with website and application for sharing videos. The initial idea of the innovator where people can share their home videos. By the time passes now YouTube become platform where people share their contents and attract the users (William L. Hosch, 2024). The connection of YouTube with google search engine also with the advertising services influences YouTube, making this tool valued for promoters and originators (Chauhan & Pillai, 2020). This platform has significantly stimuli various industries in which Aviation industry also one of them. Shaping Passengers decision making and image of the Airlines YouTube plays very important role. Researcher (Zeng & Gerritsen, 2023) states that one of the online super marketing tool word-of-mouth that people's real-life experience mixes with tapes and images. Makes easier to link with and trust than the regular traditional ads. A study by (Hudson & Thal, 2023) emphasized the people not only watching the videos also kept eyes on the comments on YouTube videos. These feedbacks are too strong that can either confirmed or challenge the video content. Moreover, Airlines also kept eyes on the feedback section on their YouTube channels, which not only overcome the lack of customer service but also create a strong brand image (Hudson & Thal, 2023).

Linked-in as a professional network

Linked-in a largest social media platform of professional networks with a membership of One billion people connects more than Two hundred countries with a vision of providing everyone in

the world a fair chance to have a job (LinkedIn, 2002). The Researcher (Heinze et al., 2022) Airlines are also using this platform where they can chat with other business people. Sharing the fascinating facts about the industry, new features and cool travel paraphernalia. Additionally, this website or application-based platform where the airlines are reaching the business travelers, luxury travelers, steadfast and efficiency. They are using this platform to show other about their care for environment, new features, how different they are from others and in this way, they create a unique brand image (Heinze et al., 2019). The researcher (Burgess & Paguio, 2016) states that sharing detailed articles and their stories of success, Airlines can tell others and show them that how smart they are in the business. This will result good brand image and people will be loyal to that brand. On the other hand, passengers are also taking benefits from Linked-in platform which is playing an important role in their decision-making process. Those who travel for business, instead of wasting time for research they seek for recommendations. These Trusted networks help them to choose the best airline by sharing their experience (Baccarella et al., 2018). Moreover, LinkedIn airlines collaborate with other airlines, companies and businesses to offer efficient flight and with that they increase customer satisfaction (Baccarella et al., 2018).

Brand Loyalty

The impression of the brand awareness, its experience and the quality on the brand equity and how all these sections are related to the brand loyalty wait a focus on airline industry is highlighted in this study in Jordon (Foroudi et al., 2020). They use data from the different respondents that were then analyzed and results indicating the brand quality, experience and awareness significantly influencing brand loyalty. The online word of mouth is partially mediating the relationship between brand equity and loyalty while the perceived value does not moderate this relation (Foroudi et al., 2020). The previous research explored that how the service provider's positive emotional display influences the customer perception of original service delivery and the reported satisfaction. They are crucial factors in fostering the brand loyalty.

Building brand trust and advocacy

The study suggests a connection between the employees' affective behavior and the customers satisfaction which in return affects the brand loyalty (Gountas & Gountas, 2007). This model assesses the direct and indirect effects of the expressive displays on the outcomes offering the insights for boosting the brand loyalty from the enhanced service delivery (Seo & Park, 2018). Trueness is

crucial in both online and offline in airline industry where brand loyalty is the main key. The field of research revolves around the revised organism response model and trust transfer theory that interrogates that how the trust in hosts and different platforms influences the customer engagement and loyalty including the focus of artificial intelligence (S. Chen et al., 2021) The engagement mediates the trust and loyalty relationship while the artificial intelligence on the other hand is negatively moderates the effect of trust on brand loyalty (Kosiba et al., 2018). Basically the service quality, agreeableness and the airline satisfaction is shown in the research previously by US airline market to influence the behavioral intention loyalty the study is also offering the several managerial insights for those who are interested in airline satisfaction and loyalty might use (Leon & Leon, 2023).

Factors influencing the passenger loyalty in airline industry

In searching a brand loyalty if the study shifts from traditional IQ based approaches to focus on empathy in AI recovery. The responses generated by the AI boost customers retention by reducing the psychological distance and increase the trust for the specific brand (Lv et al., 2022). Retention and the loyalty of the customer is the priority to be achieved by any organization. Aviation is such a highly competitive market for saving the brand loyalty of airline with the customer computing tools and devices could prove to be the savior for managers that they can use it on the customers and they analyze that how can they handle the situation (Leon & Dixon, 2023). Consumer loyalty is highly desirable phenomenon for firms because the proper commitment of the airline with the passenger results in the repeat purchase and the positive word of mouth it is the outcome of marketing activity of firm (M. Chen et al., 2019). As mentioned above that the consumer retention is crucial for airlines revenue. The unification of AI and social media has further intensified this dynamic. AI tools improves personalized experiences by analyzing the past behaviors and guiding towards the higher satisfaction (T. A. Smith, 2020). Studies shows that passengers loyal to the same brand are more likely to repurchase tickets and recommend the airlines to others, driven by the perceived values and trust (Y. Chen & Chang, 2012; Li et al., 2021). The study shoes the cognitive brand loyalty that may get change due to flight delay, it examines the uniqueness among the perceived wait time, negative emotions and loyalty intention that may change due to the poor management behavior. The emotional reappraisal mitigates the impact of wait time on these negative emotions while the emotional suppression lessens their effect on loyalty intentions. This finding provides the valuable insights for airlines to enhance the customer loyalty through the

effective cognitive loyalty regulation strategies (Li et al., 2021) The study explores that customer perception of airline cause related marketing and its impact on brand loyalty. In a survey 443 US based travelers on a US airline were analyzed by using the SPSS based process which indicates that the brand attitude significantly mediates while the brand consciousness moderates (Hong & Ahn, 2023).

Effectiveness of loyalty programs

It is greatly basic for companies to have solid ties with their customers. Customer Relationship Administration is seen as the most excellent trade procedure for companies that point to hold customers within the current energetic, and continually changing financial world. This commitment also determines where the companies will be situated within the competition (Martin et al., 2015) . This can be why numerous companies attempt to weave their customers' sentiments of dependability and attempt to convince them to form another buy. This influence handle is based on exceptionally fragile equalizations, which may result with a commitment or a partition (Sousa et al., 2024) . However, factors past item and benefit quality too make a vital contribution to the method. This commitment moreover appears that the method of making customer dependability could be a multi-dimensional handle. Customer loyalty programs are one of the foremost imperative customer relationship management instruments utilized by companies to brace dependability (Hofman-Kohlmeyer, 2016) . These programs are an unused guide which is common to assorted businesses in numerous nations for the advancement of connections between companies and customers. In CLPs, companies attempt to be closer to their customers with common moves. Companies offer different benefits to their customers taking after their customary acquiring activities. If this purchase reward relationship proceeds, customers' devotion levels can increment quickly (Ramotion, 2023)

Passengers Buying Behavior

Airports presents a retail environment dew to the unique environmental and psychological factors associated with travel (Freathy & O'Connell, 2012). Travelers often experiences stress and anxiety which made them to behave in a typical way and then as a result airport retail setting are marked differently from everyday retail channel that optimize the performances (Bohl, 2016). Many evidences suggest a significant impact of impulse purchasing at the airport retail specially airline service purchasing which could boost the performance if they are effectively understood and are

leveraged by the airlines (Crawford & Melewar, 2003) Retailers must create an environment that reduces stress and enhance or even sustain the natural excitement of the consumers while also promoting the impulse purchases by removing the barriers to buying (Torres et al., 2019). An impulse strategy integrated into these aspects of the selling operations is crucial for maximizing the performance and the profitability (Tuten et al., 2020). Understanding the consumer behavior is critical for airlines to tailor the services that they are providing for improving the satisfaction (Wavetec, 2024) In this situation the passenger behavior has evolved with the increasing reliance on the digital technologies and social media for the travel planning (Lim et al., 2014). These behavioral analytics help airlines predict and respond to the passengers need more effectively (Jiang & Wen, 2020b). This study examines patterns of emotional response to customer complaints and how these patterns influence consumers post purchase behavior. Participants take psychological tests to report their emotions, post-purchase emotions, satisfaction, and behavior after experiencing a critical service. The research results revealed four different perspectives on three-dimensional space (Choi et al., 2021). Research shows significant differences between different perspectives in emotional problem solving, decision satisfaction, and emotions related to exit, tone, verbal language, and directness (A. K. Smith et al., 1999). The model's two dimensions, acceptance/agreement and anger/surprise, explain much of the variation in consumer behavior in response to complaints (Johnson et al., 2022). This thought pattern is unique. Airport retailers should be aware that passengers often become stressed due to the stress and excitement of travel. Understanding these emotions can help retailers develop strategies to manage complaints. For example, timely and responsive solutions can transform negative thinking patterns into positive post -purchase behaviors such as loyalty and word of mouth (Bohl, 2016). Retailers can increase satisfaction and improve business performance by tailoring their sales strategies to travelers' feelings and emotions (D.-H. Park & Lee, 2008). The structural analysis indicated that travelers' overall perceptions of well-being in the airline lounges are mostly influenced by the cognitive and sensory dimensions with the cognitive evaluation playing a more significant role than in enhancing the perception of well-being (H.-C. Kim et al., 2016).

Online vs Offline booking channels

Airlines are mostly using their own websites to sell the customers directly because the internet-based distribution is a low cost and so there are lower prices for the customers and to compete with such sales channels the global distribution system firms have made the online booking tools (Koo

et al., 2011). This makes more choice for such agencies with an option to use online or more traditional offline methods in dealing with the customers. Mostly customers think that online bookings are cheaper than the traditional offline bookings as the online website also provide discounts and other loyalty-based programs and promote their websites or other platforms for the attentions of the customers and to make more consumers using their site. So typically, if a consumer wants to have a lower price then they will book online and if they want a service like making the special travel arrangements then they can use the service offline/ traditional method (Z.-H. Lee & Cheng, 2009).

Price sensitive and its impact on booking decisions

From the airline point of view, it is important to understand that how the price fluctuations affect passenger booking behavior that is crucial for the optimizing revenue management strategies. The airlines operate in a highly competitive society where the dynamic pricing refers to the practice of adjusting prices based on a real time supply and demand conditions (B. C. Smith et al., 1992). In a report by IATA it indicates that price remains the most critical factor for the passengers while selecting flights like schedule convenience or service quality (IATA, 2019) Through this we can get to know that airlines need to carefully calibrate their pricing strategies to attract and retain customers. Tools like price prediction apps and fare alert have also emerged providing passengers with the insights into fare trend and helping them making more informed booking decisions (Gupta et al., 2024) Airlines also employ revenue management strategies such as overbooking and managing no show rates to optimize the seat inventory by analyzing the booning patterns and previous data airline can predict like likelihood of no show and adjust the number of availability accordingly (Pak & Piersma, 2002).

Impact of travel reviews and recommendations

Social media has changed the perception that how the tourist's source and assess the information about the passenger's products and destination. They can now easily share the travel experience through the photos, social media posts and real time videos to impress the audience (Z. Lin & Rasoolimanesh, 2024). They explain their experience and such word of mouth allows the other passenger to focus on and develop an interest in diverse tourism experience and efficiently interact with the others as a reliable source of information (Tsai & Bui, 2021). The word of mouth increases the benefits of sourcing the information on cruise travels from social media. Additionally, the word

of mouth significantly impacts the customers' decision making. Travelers are increasingly relying on the online reviews when they are booking their flights or accommodations. According to (Filieri et al., 2018) the travelers perceive online reviews as a trustworthy source of information often placing more confidence in the personal uploaded content than the information provided by the service provider. The importance of the online reviews is underscored by the major findings of the (Serra Cantalops & Salvi, 2014) who observed that the positive reviews significantly enhance the travel services reputation and attraction that leads to the higher booking rates. Conversely the negative reviews can deter the potential of the customer this highlights the role of reputation management for the travel agencies. In addition to the individual reviews the aggregate ratings also have the substantial impact. (Luca, 2011) portrays that one review or a given star to any hotel or business platform can lead to a 5-9% increase in their future revenue. This shows that the consumers use the average rating as a quick response to their decision to judge a quality of service.

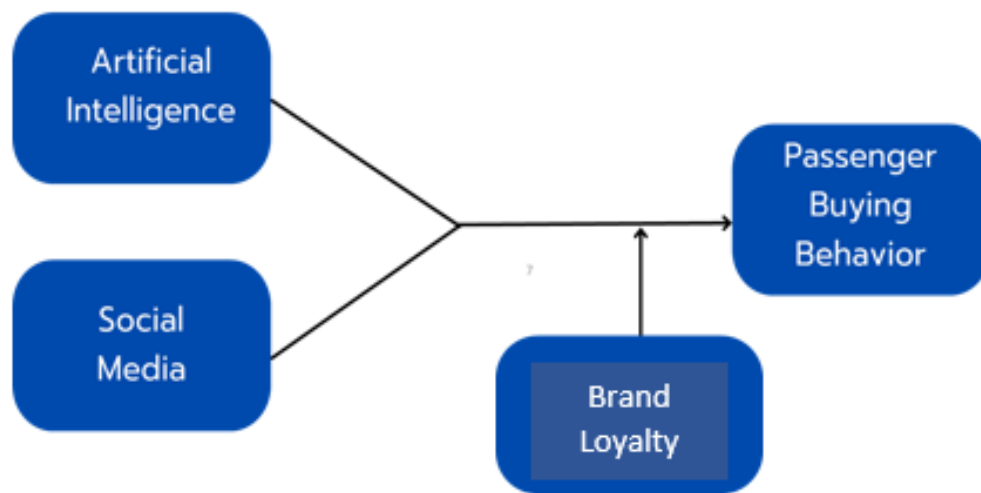


Figure 2 1. Conceptual Model

CHAPTER 3

METHODOLOGY

What is methodology?

It is defined as a system of methods and principles for doing something i.e. in conducting a research. It can be conducted by various types like qualitative, quantitative and mixed methods (Webster, 2024)

Research Philosophy:

Research philosophy includes a set of beliefs and assumptions that influence how scientists design and conduct research. Research provides a framework for deciding on the selection of methods and procedures. A research strategy develops research questions, data interpretation, and conclusions by conducting a process of inquiry. Different theories, such as positivism, interpretation, and pragmatism, have different views on what knowledge is required and how to obtain it. While positivism emphasizes objective, quantitative analysis, interpretation focuses on understanding information. Pragmatism, on the other hand, offers an overview of various perspectives on solving problems. Understanding and articulating a research concept is important because it ensures coherence and coherence in the research process, which ultimately leads to reliability and validity of the research method (John Dudovskiy, 2020).

- **Positivism:**

Positivism is a scientific philosophy that emphasizes the use of objective measurements and observational data to understand phenomena. It is based on the belief that reality is fixed and can be viewed and explained from an objective perspective, without the influence of human biases or prejudices. In empirical research, statistical methods are used to develop hypotheses and test them to draw conclusions (John Dudovskiy, 2020).

- **Realism:**

Realism is a philosophy that has similarities with positivism but allows for a more comprehensive understanding of reality. It recognizes that truth exists independently of human thought and belief, but also recognizes that our understanding of that truth is shaped by social and cultural factors. Realism can be divided into realism and realism, which holds

that we see the world directly; realism, on the other hand, believes that our perception is always filtered through layers of translation (John Dudovskiy, 2020).

- **Interpretivism:**

Interpretivism contrasts with positivism by emphasizing the subjective nature of human experience. He argues that reality is created by relationship and that an understanding of human behavior must explain the meaning and context in which people act upon their actions. Interpretive researchers use qualitative methods such as interviews and case studies to understand complex relationships(John Dudovskiy, 2020).

Connection in Research:

This study revolves around the impact of artificial intelligence and social media on passenger purchasing behavior and their role in business loyalty, a quantitative approach is required as it relates to objective measurement and statistical analysis. Using interviews, you can gather valuable information from passengers and use statistics analysis techniques to gain results. Augmented reality helps understand the broader context affecting passengers while maintaining the importance of quantity. This combination allows us to deliver both direct and related purchasing for the consumer.

Research Strategy

A quantitative approach has been followed. This method has been adopted for evaluation and further, explanatory research design is obtained. The exploratory factor analysis and reliability coefficient factors are considered to check the validity of the measuring data without error. After that, Pearson's correlation was evaluated. The SPSS software is used. Cross-sectional data collection was done, as the data was collected from set variable that had large pool of different airlines passengers (Pakistani airlines' passengers). The questionnaire is the primary source for collecting the result (Crotty, 1998).

Research Approach:

Research approach is a main aspect of this study which have the impact on the AI and social media in passengers purchasing behavior moderating brand loyalty. It will determine us that how we will collect the data and analyse it from different sources an on that basis we will be able to draw the final results. The type of this approach includes (John Dudovskiy, 2020)

- **Deductive Approach:**

This approach involves developing a hypothesis based on the existing theory and then designing a research strategy to test the hypothesis. This approach is often associated with the Quantitative and this research will use the deductive approach on the basis of different processes which includes the data collection and formulation of the hypothesis and the confirming and rejection of the hypothesis based on what we will find in research(John Dudovskiy, 2020).

Suitable Approach for our Research:

This research is quantitative and the data we have to gather for this research would be cross sectional so in this regard the deductive approach is the most suitable approach for this. And as our study aims to examine the impact of AI and social media so this requires the forming specific hypothesis based on the existing theory and the literature and the data that we will collect from the surveys will provide us the stats for the resting of our hypothesis(John Dudovskiy, 2020).

Research type:

The sampling method used in this research is the “Convenience sampling” as the large number of the passengers from all over Pakistan could be challenging.

Sample population and sample size

The research forces on evaluating the responses of the Pakistani Airline passengers who have travelled maximum 5 times or more the data is gather from the Lahore, Islamabad and the Karachi Airport from the different airline passengers including the Airsial, Air blue, Fly Jinnah, PIA. The sample was calculated by taking almost 50 passengers from each airline.

Methodological Choice:

➤ **Quantitative Method:**

Quantitative research involves the systematic empirical investigation of the observable phenomenon via statistical technique. The main focus will be the quantifying relation of AI or social media with the buying behavior of passenger and related variables. It will be done in testing the hypothesis (John Dudovskiy, 2020).

- **Surveys:**

In our research we will conduct surveys and collect the data by designing the structured questions designed to measure the variables on buying decisions of the passengers and the level of brand loyalty. This will show us that how are the passengers or the service consumers responding to the brand for their decisions either they will go for the other brand by inspiring from the social media or either AI will assist them to do so.

- **Statistical Analysis:**

The collected data can be analysed using the statistical methods to identify the test hypothesis. This will examine the correlation between the variables AI and social media and the moderating impact of brand loyalty.

Research Instruments and research tool

The questionnaire has been structured and adopted from the previous different research with modification in order to highlight the impact of Social media on passengers buying behavior with the moderating effect of brand loyalty. The questions measure the aspects like research items (filtered questions), demographics and the general opinion on the Social media. The survey questions vary between the different options between Strongly Agree to Strongly Disagree.

These research questionnaires have been formulated on the google forms and has been distributed by the links and even in the hard forms. The first part covered the filter questions in screening the question regarding the fact either they have travelled more the 5 times in any Pakistani airline and

at least 3 times. Below 3 were not considered in the analysis. The questions were made using all the 4 variables including Artificial Intelligence, Social media, Brand loyalty and Passenger buying behavior. The research tool used to adopt the results from the research is SPSS software.

CHAPTER 4

RESULTS AND FINDINGS

This study was conducted to explore the impact of Artificial Intelligence, Social Media, Brand Loyalty, and passenger knowledge on passenger buying behaviors. The data was gathered through random sampling and the sample of 201 participants were collected within the vicinity of Lahore. A critical filtration process was employed to examine the data according to predetermined inclusion criteria and to address any instances of missing or non-serious responses. Subsequently, one response out of the initial 201 was deemed unsuitable for analysis due to incomplete marking. Data was carefully entered and subjected to analysis using the Statistical Package for Social Sciences (SPSS).

Quantitative Analysis

The study variables were initially subjected to descriptive statistical analysis to evaluate item reliability, internal consistency, and determine the means and standard deviations. Table 4.1. sums up the psychometric properties of all of the research variables. The reliability coefficient (Cronbach's alpha) for the Artificial Intelligence, Social Media, Brand Loyalty, and passenger buying behaviors falls at 0.77, 0.76, 0.77, and 0.68 respectively indicating suitable reliability levels.

Sample Descriptive

Table 4 1. Frequencies and Percentages of Demographics of Sample (N=205)

Variables	Customers n=205
	f (%)
Number of Travel	
5 times or more	130 (65%)
Less Than 5 times	70 (35%)
Gender	
Male	102 (51%)
Female	98 (49%)
Residence	
Pakistan	130(65%)
England	15(7.5%)
Saudi Arabia	35(17.5%)
Dubai	20(10%)
Purpose of Travel	
Business	52(25.4%)
Education	130(63.4%)
Leisure/vacation	16(10.2%)
Others	2(1.0%)
Travel Class	
Business Class	47(23.5%)
Economy Class	86(43.0%)
First Class	21(10.5%)
Premium Economy Class	46(23.0%)

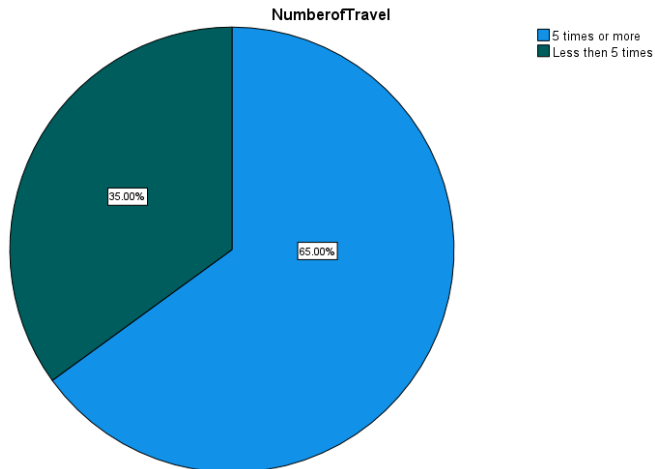


Figure 4 1. Travelers Pie Chart

The figure 4.1 explains the number of time a respondent travel. The blue color illustrate that our respondents traveled 5 or more than 5 times and the green explain that respondents traveled less than 5 times. Further explains that 65% respondent traveled more than 5 times and 35% traveled less than 5 times.

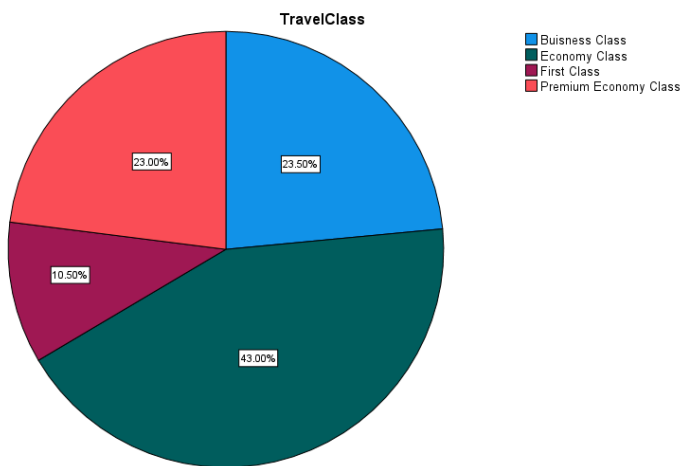


Figure 4 2. Travel Classes Pie Chart

In figure 4.2 Pie chart showing travel classes. Blue for business class which is 23.50%, green for economy class which is 43%, red for first class which is 10.50% and orange for premium class which is 23%.

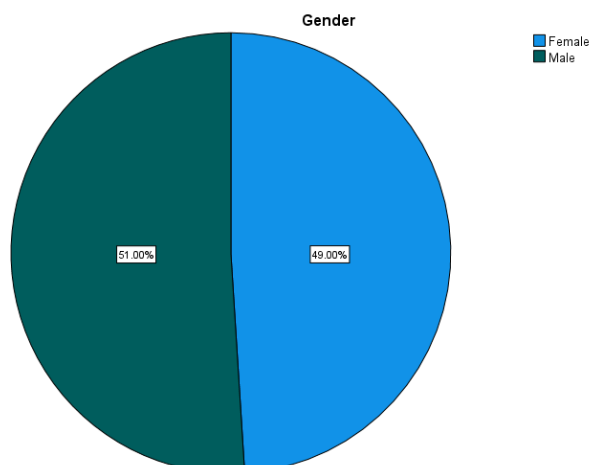


Figure 4 3. Gender Pie Chart

In figure 4.3, pie chart demonstrates the gender of our respondent. Blue color showing that 49% are female respondent and green color showing 51% are male respondent

Factor Analysis

The relationships between the extracted factors and the observed variables are represented by factor loadings. They have values between -1 and +1, with positive values signifying a favourable association and negative ones signifying an unfavourable one (Yanai & Ichikawa, 2006). Higher absolute values denote stronger connections, while the amount of the factor loading shows the intensity of the link

KMO Test:

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.884
Bartlett's Test of Sphericity	Approx. Chi-Square	4462.546
	Df	990
	Sig.	.000

Figure 4 4. KMO TEST

For this research, the KMO value that has been obtained is 0.884, lies in an adequate range of KMO with the specified 0.000 level of significance. This means that the KMO value is authentic for the study to be continued. This shows that each of the variables along with the construct, are completely adequate. Hence, further testing with analysis is supported by KMO result.

Reliability Analysis; Cronbach's Alpha:

The reliability and internal consistency are obtained by Cronbach's alpha, for each variable that has been used in the survey. The established range is between 0 to 1, where more than or equals to 0.9 is considered excellent whereas, if equals to 0.7 then, it is acceptable, and if below 0.5, then it's considered poor and unacceptable (Alkhadim, 2022).

The Cronbach's alpha in this research is obtained for Artificial Intelligence, is 0.778, which means it is a good level. This means that this variable construct is reliable in research. This means that the passengers travelling through Pakistani airlines, are aware of this factor of Artificial intelligence its impact on social media A few people are not aware of this factor.

For the Social Media, the obtained value is 0.764, this indicates a good level of reliability among the items (questions) designed to measure the use of social media by passengers. The high alpha value reinforces the reliability of the measurement instrument. This finding enhances our confidence in the accuracy and stability of the Social media usage by passengers, factor, within the broader framework of buying behavior of passengers.

A Cronbach's alpha of 0.802 indicates good internal consistency, about the passengers buying behavior.

The Brand Loyalty factor exposed the passengers buying behavior from one airline to the other. With a Cronbach's alpha of 0.780, this factor demonstrates good internal consistency, suggesting that the reliability of passengers of the one airline to move to the other airline.

Table 4 2. Artificial Intelligence Loadings

Artificial intelligence	Extraction (Factor Loading)	Cronbach's Alpha 0.778
--------------------------------	--	---------------------------------------

I am aware that airlines use AI-based strategies to enhance customer experience.	0.726
The use of AI in the airline booking process improves my overall experience	0.671
AI-based systems in airlines are efficient in handling my queries and concerns.	0.658
AI-based systems improve the mode of communication from airlines (e.g. notifications).	0.609
Have you used AI-powered customer service tools (e.g., chatbots) provided by airlines to gather information	0.731
AI recommendations significantly influence my decisions when booking flights.	0.720
To what extent does the information obtained through AI-based tools influence your decision to purchase airline tickets	0.645
Have you used AI-driven predictive tools (e.g., fare prediction apps) to determine the best time to purchase airline tickets	0.687
In your opinion, how effective is AI in resolving passenger concerns such as booking charges?	0.623

Table 4 3. Social Media Loadings

Social Media	Extraction (Factor Loading)	Cronbach's Alpha 0.764
I am aware that airlines use social media strategies to engage with customers.	0.734	
Social media campaigns by airlines influence my perception of their brand.	0.604	
The content shared by airlines on social media platforms is informative	0.666	
I engage with airline brands on social media platforms (like comments)	0.612	
The content shared by airlines on social media platforms matches my travel interests and needs.	0.677	

Have you ever made a purchasing decision for air travel based on information you obtained from social media	0.655
Have you ever participated in discussions or forums on Facebook where air travel experiences or tips are shared	0.665
Do you follow specific airlines or travel related pages on Facebook to stay updated on promotions, deals, or new routes	0.601
How frequently do you use YouTube as a source of information regarding air travel options	0.683
Have you ever watched travel vlogs or reviews on YouTube before deciding about air travel?	0.636
Do you believe that your knowledge about air travel has increased as a result of your interactions and engagement with Instagram	0.765
Have you ever come across advertisements or sponsored posts related to air travel on LinkedIn	0.628

Table 4 4. Brand Loyalty Loadings

Brand Loyalty	Extraction (Factor Loading)	Cronbach's Alpha 0.780
I am more loyal to the airlines who provide customized services on my preferences	0.651	
Loyalty programs that offer personalized rewards influence my choice of airline.	0.619	
Airlines that treat me fairly and ethically retain my loyalty.	0.686	
Honest and clear communication from airlines impacts my loyalty positively.	0.652	
I choose an airline I am loyal to, even if it is not the cheapest option.	0.605	
How important is the loyalty program offered by an airline when making your decision to book a flight with them?	0.628	
How strongly do you feel emotionally attached to your preferred airline when compared to other airlines you have flown with?	0.588	
Do you find yourself recommending your preferred airline to friends and family because of the positive emotions you associate with it?	0.725	

How likely are you to continue flying with your preferred airline because of the benefits and rewards you receive through their loyalty program?	0.651
How likely are you to remain loyal to a particular airline, even if other options become available?	0.684

Table 4 5. Passenger Buying Behavior Loadings

Passenger Buying Behavior	Extraction (Factor Loading)	Cronbach's Alpha 0.802
Do you believe that having more knowledge about airlines helps you make better-informed decisions when booking flights	0.562	
Do you believe that your emotional responses, such as excitement or trust, play a role in your satisfaction with the airline purchasing experience?	0.666	
Online booking platforms are easier to use compared to offline methods.	0.673	
I consider travel reviews before booking a flight.	0.618	
Discounts and special offers on social media influence my purchasing decisions.	0.622	
How important is the comfort and service quality of an airline in your decision-making process?	0.665	
Do you think knowing more about airlines' services makes you feel more in control when booking flights?	0.691	
Do promotional offers and discounts from airlines impact your booking decisions?	0.628	

How much do past experiences with an airline influence your future bookings?	0.645
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Correlation Coefficient:

To assess the variables' relationship, the correlation has been run through SPSS. It helps to measure the relationship between the given two variables. In this way, the strength of relationship among the provided variables is easily identified. Correlation value ranges between 0 to +1. The value in the research is 0.469 which shows there is a moderate positive relation between SM & BL. In the second case the value of correlation is 0.482 and 0.732 which shows that there is a positive relationship between SM, PBB & BL. According to the table the next values of the correlation are 0.606, 0.475 and 0.501 which also shows a positive relationship between SM, AI, BL & PBB.

Table 4 6. Correlations Table

Correlations					
		SM total	BL total	PBB total	AI total
SMtotal		1			
BLtotal		.469	1		
PBBtotal		.482	.732	1	
AItotal		.606	.475	.501	1

The value in the above table represents that there is a positive relationship among the variables, with the significance level of 0.01. This shows a moderate statistically significant relationship among variables.

R-square Coefficients of determination:

For checking the impact of AI and social media on passengers buying behavior, the MACRO process proposed by Hayes (Soleman Abu-Bader, 2021), has been used, with the moderating (brand loyalty), to cause the moderation between independent variables (Artificial Intelligence and

Social media) and dependent variable (passenger buying behavior). The impact among dependent and independent variables, moderator has been used. According to the table, it is evident that there exists a positive and significant association among the dependent and independent variables, as $p < 0.05$. This shows a complete moderating effect in research and also proves a significant positive developing relation among dependent and independent variables.

Table 4 7. Model Fit Table

	R	R-square	P
AI effecting passenger buying behavior	0.752	0.565	0.000
Social Media effecting passenger buying behavior	0.748	0.560	0.000

Hypothesis Testing (Results)

Hypothesis 1:

Table 4 8. Hypothesis 1

Statement	P-Value	Result
Artificial intelligence has positive impact on passenger buying behavior	0.000 $P < 0.05$	Supported

P-value of H1 is 0.000 which is less than 0.05 that concludes that null hypothesis is not supported. It also indicates that Artificial intelligence has positive impact on passenger buying behavior

Hypothesis 2:**Table 4 9. Hypothesis 2**

Statement	P-Value	Result
Social media has positive impact on passenger buying behavior	0.000 P < 0.05	Supported

P-value of H2 is 0.000 which is less than 0.05 that concludes that null hypothesis is not supported. It also indicates that Social Media has positive impact on passenger buying behavior

Hypothesis 3:**Table 4 10. Hypothesis 3**

Statement	P-Value	Result
Brand loyalty moderates the relationship between social media and passenger buying behavior.	0.000 P < 0.05	Supported

P-value of H3 is 0.000 which is less than 0.05 that concludes that null hypothesis is not supported. It also indicates that Brand loyalty moderates the relationship between social media and passenger buying behavior.

Hypothesis 4:**Table 4 11. Hypothesis 4**

Statement	P-Value	Result
Brand loyalty moderates the relationship between Artificial Intelligence and passenger buying behavior.	0.000 P < 0.05	Supported

P-value of H4 is 0.000 which is less than 0.05 that concludes that null hypothesis is not supported. It also indicates that Brand loyalty moderates the relationship between Artificial Intelligence and passenger buying behavior.

Hypothesis 5:**Table 4 12. Hypothesis 5**

Statement	P-Value	Result
Integration of artificial intelligence and social media positively influence passenger buying behavior.	0.000 P < 0.05	Supported

P-value of H5 is 0.000 which is less than 0.05 that concludes that null hypothesis is not supported. It also indicates that Integration of artificial intelligence and social media positively influence passenger buying behavior.

Table 4 13. Regression Analysis

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.501 ^a	.251	.247	5.929
2	.549 ^b	.301	.294	5.741
a. Predictors: (Constant), AI total				
b. Predictors: (Constant), AI total, SM total				
c. Dependent Variable: PBB total				

Regression Analysis by Andrew Hayes:

Model 1: It only uses the AI total as the predictor for passengers buying behavior (Total). It explains 25.1% of the variance in PBB total with a standard error of 5.929.

Model 2: This includes both AI Total and social media Total as the predictors. This model explains 30.1% of the variance in the passenger buying behavior (total), improving the fit of model, as

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2333.971	1	2333.971	66.399	.000 ^b
	Residual	6959.784	198	35.150		
	Total	9293.755	199			
2	Regression	2800.885	2	1400.443	42.491	.000 ^c
	Residual	6492.870	197	32.959		
	Total	9293.755	199			
a. Dependent Variable: PBB total						
b. Predictors: (Constant), AI total						
c. Predictors: (Constant), AI total, SM total						

evidenced by the increase in R-Square and the decrease in the standard error to 5.741.

The ANOVA table is a synopsis that depicts the analysis of variance for two regression models determining the dependent variable, PBB total. In the first model, the regression sum of squares is 2333.971, with 1 degree of freedom (df) and the mean square of 2333.971. The F-statistic for this model is 66.399, with a significance level (Sig.) of .000, which means the model is significant. The residual sum of squares is 6959.784 with 198 df and the total sum of squares is 9293.755 with 199 both being considered as df. However, in Model 2, AI total and SM total which is the two other predictors are included. the value of initial regression squares applies to that of the second model that goes up to 2800.885 on 2 df resulting in a square of 1400.443. The F-statistic for this model is 42.491 along with = .000, thus it confirms the significance of the model. The residual sum of squares the residuals reduces up to 6492.870 with 197 df, while the total sum of squares total sum of squares remains the same does not change at 9293.755 with 199 df. As we can observe, the reduction in the residual sum of squares and the rise in the regression sum of squares from Model 1 to Model 2 signifies that the use of SM total as an additional variable in the model improves it.

Table 4 14. Coefficient Table

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	8.994	1.469		6.124	.000
	AI total	.497	.061	.501	8.149	.000
2	(Constant)	6.604	1.558		4.240	.000
	AI total	.328	.074	.330	4.416	.000
	SM total	.203	.054	.282	3.764	.000

a. Dependent Variable: PBB total

This table shows the coefficients obtained from the regression analysis with the observed outcomes (total PBB) as variables. In Model 1, the constant is 8.994 and the variance of intelligence (total AI) is 0.497, which means that for every unit increase in total AI, the observed outcomes will

increase by 0.497 units, which is significant ($t = 8.149$) $p < 0.001$). In Model 2, with the constant 6.604, the total AI decreases to 0.328, which is also significant ($t = 4.416$, $p < 0.001$). Also, the correlation coefficient (total SM) is 0.203 (Beta = 0.282), which is significant ($t = 3.764$, $p < 0.001$). These results show that both AI and social media have a positive impact on brand awareness, highlighting the importance of customer experience in improving product perception.

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Version 4.2 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2022). www.guilford.com/p/hayes3

Model: 1

Y: PBB total

X: SM total

W: BL total

Sample

Size: 200

OUTCOME VARIABLE:

PBB total

Model Summary

R	R-sq.	MSE	F	df1	df2	p
.7487	.5606	20.8361	83.3468	3.0000	196.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	4.4207	3.0461	1.4513	.1483	-1.5867	10.4281
SM total	.0847	.0884	.9584	.3390	-.0896	.2590
BL total	.5087	.1461	3.4812	.0006	.2205	.7969
Int_1	.0021	.0038	.5460	.5857	-.0055	.0096

Product terms key:

Int_1 : SM total x BL total

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	.0007	.2981	1.0000	196.0000	.5857

Focal predict: SM total (X)

Mod var: BL total (W)

Data for visualizing the conditional effect of the focal predictor:

Paste text below into a SPSS syntax window and execute to produce plot.

DATA LIST FREE/

BEGIN DATA.

SM total	BL total	PBB total.
21.0000	15.0000	14.4885
32.0000	15.0000	15.7652
38.8400	15.0000	16.5590
21.0000	23.0000	18.9094
32.0000	23.0000	20.3700
38.8400	23.0000	21.2783
21.0000	30.0000	22.7776
32.0000	30.0000	24.3993
38.8400	30.0000	25.4077

END DATA.

GRAPH/SCATTERPLOT=

SM total WITH PBB total BY BL total.

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:

95.0000

The table shows the results of the regression analysis conducted to examine the effect of social media (SM) and brand loyalty (BL) on passenger purchasing behavior (PBB) with a large sample of 200 people. The total welfare value is 0.7487 and the R-squared value is 0.5606, indicating that approximately 56.06% of the change in customer purchasing behavior can be explained by different estimates. The F statistic is 83.3468 and the p-value is 0.0000, indicating that the model is significant. The constant term in the regression analysis is not significant ($p = 0.1483$), the effect of the relationship on passenger purchasing behavior is also not significant (coefficient = 0.0847, $p = 0.3390$). However, brand loyalty has a significant effect on passenger purchasing behavior (coefficient = 0.5087, $p = 0.0006$), high brand loyalty affects passengers to purchase more. The

interaction term between social media and trust type (Int_1) is not significant (coefficient = .0021, $p = .5857$), indicating that trust type has no significant effect on the relationship between social media and passenger purchases. The change in R-squared caused by the interaction term was insignificant (.0007), supporting the absence of a significant effect. The confidence intervals for the coefficients provide additional information by indicating with 95% confidence that the true effect of these variables falls within the specified range.

----- END MATRIX -----

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Version 4.2 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2022). www.guilford.com/p/hayes3

Model: 2

Y: PBB total

X: AI total

W: BL total

Sample

Size: 200

OUTCOME VARIABLE:

PBB total

Model Summary

R	R-sq	MSE	F	df1	df2	p
.7522	.5658	20.5884	85.1361	3.0000	196.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	3.4039	3.2414	1.0501	.2949	-2.9886	9.7964
AI total	.1621	.1333	1.2163	.2253	-.1007	.4250
BL total	.5367	.1428	3.7580	.0002	.2550	.8183
Int_1	.0015	.0053	.2799	.7799	-.0089	.0119

Product terms key:

Int_1: AI total x BL total

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	.0002	.0783	1.0000	196.0000	.7799

 Focal predict: AI total (X)
 Mod var: BL total (W)

Data for visualizing the conditional effect of the focal predictor:

Paste text below into a SPSS syntax window and execute to produce plot.

DATA LIST FREE/
 BEGIN DATA.

AI total	BL total	PBB total.
16.0000	15.0000	14.4017
23.0000	15.0000	15.6912
29.0000	15.0000	16.7965
16.0000	23.0000	18.8837
23.0000	23.0000	20.2558
29.0000	23.0000	21.4319
16.0000	30.0000	22.8056
23.0000	30.0000	24.2499
29.0000	30.0000	25.4878

END DATA.

GRAPH/SCATTERPLOT=

AI total WITH PBB total BY BL total.

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:

95.0000

The table shows the results of the regression analysis conducted to examine the impact of intelligence (AI) and brand loyalty (BL) on passenger purchasing behavior (PBB) with a sample size of 200. The degree of correlation is 0.7522 and the R-squared value is: 0.5658, which means that 56.58% of the variance in passenger purchasing behavior is explained by the variance of the index. The F statistic is 85.1361 and the p value is 0.0000, indicating that the model is significant. Duration is not significant in the model (p = 0.2949) and AI has no effect on passenger pickups (coefficient = 0.1621, p = 0.2253). However, the type of trust has a significant impact on

passengers' purchasing behavior (coefficient = 0.5367, $p = 0.0002$), indicating that a higher brand equity is associated with people going shopping more. The interaction term between intelligence and brand trust (Int_1) was not significant (coefficient = 0.0015, $p = 0.7799$), indicating that brand trust did not significantly influence the relationship between intelligence and passenger purchase. The change in R-squared resulting from the interaction term was non-significant (.0002), supporting the absence of a significant effect. The confidence intervals for the coefficients provide additional information by indicating with 95% confidence that the true effect of these variables falls within the specified range.

----- END MATRIX -----

CHAPTER 5

DISCUSSION

The views expressed in this study are based on findings and analysis. The survey highlights the impact of artificial intelligence (AI) and social media on passenger purchasing behavior, with product loyalty being a potential influence. While the direct impact of social media on passenger behavior is unclear, it was observed that passengers frequently use social media for travel purposes. Although many travelers are familiar with AI services, research suggests that there is still a need to increase awareness of how AI can be integrated into social media to assist with travel queries and information gathering. The role of social media in influencing consumer behavior is clear.

For example, a study by (Hudson & Thal, 2013c) found that social media influences travelers' decision-making process by providing a platform for peer recommendations and real-time information sharing. This is based on our findings that most travelers use social media for travel. Previous research by (Wirtz et al., 2019) has demonstrated the potential of AI to improve customer service and personalization in the aviation industry, suggesting that AI can increase customer satisfaction and reliability by providing customized services and predictive analytics. Our research examines these findings to suggest that consumer trust has an impact on passenger purchasing behavior and that cognitive factors may play an important role in the development of socially focused interactions. As our research shows, passenger attraction strategies depend on many aspects of product loyalty. While loyal customers tend to stick with their favorite airlines, some say they are willing to switch if they can find a better deal. This finding is consistent with the study of (Han & Hyun, 2015) who demonstrated that commercial trust in the airline industry is a strong predictor of customer satisfaction, but in some cases, competition can affect even the most loyal customers. This includes the use of artificial intelligence to provide personalized travel recommendations, real-time updates, and effective customer service through social media platforms. This combination can attract more passengers by offering them great benefits, thus increasing loyalty and ultimately revenue. The main function and guardian of behavior is brand loyalty. Future research should focus on more research on the direct impact of intelligence on consumer behavior and strategies to combine it with social media to make passengers feel connected and satisfied.

Discussion for Research Questions:

Q1: How does AI impact passenger buy behavior in the aviation industry?

Q2: What role of social media play in influencing the passenger decisions?

Q3: How can airline leverage AI and Social media to improve customers' engagement and sales to make them loyal with brand?

This study investigates the significant impact of cognitive and social skills on passenger purchasing behavior in the Pakistani aviation industry. It shows how today's technology is affecting consumer decisions, especially in terms of brand loyalty. AI-powered tools such as chatbots and personalized recommendations can improve the decision-making process, help passengers choose the best options, and increase overall satisfaction. At the same time, social media platforms play a significant role in influencing consumer choices by engaging with ads, focusing on the power of social media where reviews and recommendations influence buyers. This study clearly shows the difference between the behavior of loyal and dishonest customers; loyal customers tend to stick to famous brands, while dishonest customers are more likely to be influenced by intelligence and social interaction. This highlights the importance of airlines using this technology to help increase self-awareness and improve customer engagement. Research also shows that brand trust should not be overlooked as it is a key factor in understanding purchase. The findings call for airlines to integrate AI and social media into their business, while also highlighting the need for more research in other areas that will impact passenger behavior across history and industry.

Future Research Directions:**Cross-Culture Studies:**

This research has been done in the Pakistan for the Pakistani airlines. This research aims to conduct a comparative study across different countries to understand that how variations in AI implementation and social media usage impact the buying decisions of consumers. As the countries are progressing in field of information technology this could

be help to see that what specific error or mistake or even the improvement can be done to make it better for the understanding of the passengers easily.

Comparative industry study:

As this study is related to the aviation industry and results are supporting the scenario with respect to the aviation industry, the other industries can also get a help for the model for their transportation business to check that either the business requiring the AI services for the customers and how is social media is providing them the benefits so that they could be attracted and choose that one specific airline. This research could help the business of busses in Pakistan i.e. Faisal Movers, Daewoo and others. This research can also be done in the businesses of trains for attraction of more passengers towards the specific express railway company.

Other methods (Passenger Perspective):

This research is done quantitatively and the sampling done was convenience sampling but if we target the focus groups for the deeper understanding of the passengers experience they the qualitative method could also be used. The passengers could be interviewed for this and the data could be collected.

CONCLUSION

The research explores that how the impact of AI and social media on passenger decision making influenced in Pakistan aviation industry with the moderating effect of brand loyalty. The results provide important understandings about how the modern technologies are determining the consumer behavior and the importance of brand loyalty in this growing market. Research indicates that powerful tools of social media platforms are significantly influencing the passenger buying decisions such as stimulating and attractive posts, targeted commercials and social interactions can influence passenger acuties and preferences. Passengers are gradually count on the reviews, feedbacks, endorsements and information on social media, which then effects their purchasing behavior. People are now becoming more and more aware of AI. AI-driven chatbots, recommendations helping in identifying the best available options for the users. People might like the information and suggestions provided by AI can be helpful in streamlining the decision-making process and passenger satisfaction. Brand loyalty is a crucial factor in this study as a moderator.

AI with the collaboration of Social media can help in identifying the important factors that influence loyalty. There is a difference in the behavior of loyal customers and non-loyal customers. AI and social media influence passenger buying behavior of non-loyal customers and loyal customers stick to their brand with established trust.

For aviation industry Pakistan, the suggestions of this study are profound. Airlines should influence the AI and social media technologies to enhance personalized experience, improve customer engagement and strengthen the brand loyalty. Airlines plans for marketing can be better by figuring out how these factors can influence passenger buying behavior.

It is concluded that usage of both AI and social media can be helpful and challenging in Pakistan's airline marketing. These tools have the potential to influence the passenger purchasing behavior but also important to remember the value of brand loyalty cannot be ignored. Future research can be done on other or additional factors that can work as a moderator, can also be done on mediating factors that may impact on passenger behavior in aviation sector. Further investigation can explore the long-term effects of these technologies. The research is done in Pakistan; further research can be done in different countries. This study conducted in aviation industry, in future research can be done on comparative industry.

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Appendices

Appendix A

Questionnaire:

Impact of AI and social media on Passengers buying behavior with the Moderating effect of Brand loyalty; A study in Pakistan airline industry

I am a student at the Institute of Aviation Studies (IAS), University of Management and Technology (UMT), Lahore campus. Enrolled in the degree program of BS Aviation Management (BSAM), we are conducting research on the topic of “Impact of AI and social media on passengers buying behavior with moderating effect of brand loyalty”. We highly appreciate your cooperation if you fill out this survey. Thankyou!

Section 01: Demographics

Gender (Male, Female): _____

Primary Purpose of Travel (Leisure/Vacation, Business, Visiting Friends/Family, Education, Other): _____

Typical Travel Class (Economy, Premium Economy, Business, First):

Country of Residence: _____

Section 02: Research Questionnaire

SA= Strongly Agree

A=Agree

N= Neutral

D= Disagree

SD= Strongly Disagree

Variable 01: Artificial Intelligence	S A	A	N	D	S D
Artificial intelligence is an impactful tool which have a role in impacting the behavior of the passenger through multiply updated algorithms. This will help in finding even more better solutions for the purchasing decisions.					
I am aware that airlines use AI-based strategies to enhance customer experience. (Nguyen et al., 2022b)					
The use of AI in the airline booking process improves my overall experience (Geske et al., 2024a)					
AI-based systems in airlines are efficient in handling my queries and concerns. (Pillai & Sivathanu, 2020)					
AI-based systems improve the mode of communication from airlines (e.g. notifications). (Pillai & Sivathanu, 2020)					
Have you used AI-powered customer service tools (e.g., chatbots) provided by airlines to gather information? (Pillai & Sivathanu, 2020)					
AI recommendations significantly influence my decisions when booking flights.(Xu et al., 2024)					
Have you used AI-driven predictive tools (e.g., fare prediction apps) to determine the best time to purchase airline tickets?(Geske et al., 2024b)					

In your opinion, how effective is AI in resolving passenger concerns such as booking charges?(Werthner, 2003)					
Variable 02: Social media					
Social media have the impacts in the decision making of the passengers' hoe travel often. How social media affects the overall experience in improving the decisions and in bonding the brand loyalty					
I am aware that airlines use social media strategies to engage with customers.(Hudson & Thal, 2013d)					
Social media campaigns by airlines influence my perception of their brand.(Hanna et al., 2011)					
The content shared by airlines on social media platforms is informative (María Munar, 2011)					
I engage with airline brands on social media platforms (like comments) (A. M. Kaplan & Haenlein, 2010)					
The content shared by airlines on social media platforms matches my travel interests and needs (Xiang & Gretzel, 2010).					
Have you ever made a purchasing decision for air travel based on information you obtained from social media (Cox et al., 2009).					
Have you ever participated in discussions or forums on Facebook where air travel experiences or tips are shared (Zeng & Gerritsen, 2014b).					
Do you follow specific airlines or travel related pages on Facebook to stay updated on promotions, deals, or new routes (Leung et al., 2013).					
How frequently do you use YouTube as a source of information regarding air travel options (Jashari & Rrustemi, 2016).					
Have you ever watched travel vlogs or reviews on YouTube before deciding about air travel? (Sokolova & Kefi, 2020)					
Do you believe that your knowledge about air travel has increased as a result of your interactions and engagement with Instagram? (Sharma & Kumar, 2018)					
Have you ever come across advertisements posts related to air travel on LinkedIn? (Duffett, 2017)					
Variable 03: Brand loyalty					
Brand Loyalty gives an impression of the quality service for you in any kind of the service. How do you think that a brand loyalty should be maintain in the airline industry?					
I am more loyal to the airlines who provide customized services on my preferences (McKinsey, 2024)					
Loyalty programs that offer personalized rewards influence my choice of airline. (McKinsey, 2024)					

Airlines that treat me fairly and ethically retain my loyalty. (E. S.-T. Wang et al., 2015)					
Honest and clear communication from airlines impacts my loyalty positively. (E. S.-T. Wang et al., 2015)					
I choose an airline I am loyal to, even if it is not the cheapest option. (E. S.-T. Wang et al., 2015)					
How important is the loyalty program offered by an airline when making your decision to book a flight with them? (Berman, 2006a)					
How strongly do you feel emotionally attached to your preferred airline when compared to other airlines you have flown with? (Herjanto et al., 2021)					
Do you find yourself recommending your preferred airline to friends and family because of the positive emotions you associate with it? (Zeren & Kara, 2020)					
How likely are you to continue flying with your preferred airline because of the benefits and rewards you receive through their loyalty program? (Berman, 2006b)					
How likely are you to remain loyal to a particular airline, even if other options become available? (Zins, 2001)					
Variable 04: Passenger buying behavior					
It refers to the decision making of any of the service from the airline industry. How will you rate the buying behavior for these services (done this effects)?					
Do you believe that having more knowledge about airlines helps you make better-informed decisions when booking flights? (Ødegaard, 2015)					
Do you believe that your emotional responses, such as excitement or trust, play a role in your satisfaction with the airline purchasing experience? (X. Wang et al., 2023)					
Online booking platforms are easier to use compared to offline methods. (Cheng et al., 2018)					
I consider travel reviews before booking a flight. (Zhao et al., 2015)					
Discounts and special offers on social media influence my purchasing decisions. (Bhatti, 2018)					
How important is the comfort and service quality of an airline in your decision-making process? (Jameel et al., 2020)					
Do you think knowing more about airlines' services makes you feel more in control when booking flights? (Meyer-Waarden, 2013)					
Do promotional offers and discounts from airlines impact your booking decisions? (Jani et al., n.d.)					
How much do past experiences with an airline influence your future bookings?(Jameel et al., 2020)					

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“Thank you for completing this questionnaire. Your feedback is valuable in improving the aviation industry’s approach to passenger experience.”