

Research Article

The Personalization-Privacy Paradox in AI-Enabled Airline Services: A Systematic Critical Review of Perceived Value, Algorithmic Trust, Privacy Risk and Passenger Loyalty

Bharat Ankur Dogra^{1*}, Nayhel Sharma² and Jashandeep Singh³

¹GSCM Cluster, School of Business, UPES, Dehradun, Uttarakhand, India

²Chitkara Business School, Chitkara University, Punjab, India

³Chitkara Business School, Chitkara University, Punjab, India

*Corresponding Author
Dr. Bharat Ankur Dogra
(bharatdogra.phd@gmail.com)

Article History

Received: 11.07.2026

Accepted: 19.08.2026

Published: 20.09.2026

DOI: 10.61336/cjmr.1603.95

Abstract: Artificial Intelligence (AI) is changing the services of airlines through a highly personalized customer journey, i.e. travel planning booking pricing, airport operations, managing disruption, customer support, loyalty programs and post-flight communication. Even though personalization may bring about the benefits of higher relevance convenience efficiency, perceived usefulness and better passenger experience, its reliance on personal and behavioural data creates a personalization-privacy paradox. This systematic critical review aims to integrate various research results on the subjects of AI-powered personalization, perceived value, algorithmic trust, privacy risk satisfaction repeats purchase intention and passenger loyalty. The analysis of the review suggests that personalization by itself is not a loyalty driver, its impacts mainly flow through perceived value, satisfaction and engagement on one side and algorithmic or digital trust on the other, whereas privacy risk may limit these positive effects. The study conducted from 128 sample of passengers of Pakistan International Airlines not only supports the theoretical argument with the empirical data at the level specific to the airline industry, but also reveals the relationship between customers satisfaction and AI perceived usefulness ($r = 0.610$; $p < 0.001$), partial mediation role of digital trust and a negative moderating effect of privacy concerns on the (AI benefits, customer loyalty relationship) = -0.717 , $p = 0.033$). Synthesized evidence from these reviews highlights that trustworthy personalization depends heavily on the extent to which one is informed about personal data usage (transparency), the extent to which one can easily make sense of how personal data are processed (explainability), correctness of data processing (accuracy), equitable distribution of the processing outcomes among the stakeholders (fairness), protection of the data against misuse (security), the amount of control one feels over own data (perceived control) and data governance at individual level that reflects one's responsibilities and accountabilities (responsible data governance). The review proposes that when the value created by AI is balanced with the passengers' trust in the AI-generated decisions and their perception of the privacy risks of their data having been used in AI to deliver personalized services. It also highlights research areas that need to be explored like limited industry-specific evidence, use of the same set of survey questions over time designs (cross-sectional), different versions of trust scales, less cross-cultural as well as longitudinal investigations and the exploration of the nonlinear effects of personalization is yet to be a research priority. The review offers an integrated model showing how airlines could be able to combine technology-driven personalization with passenger autonomy privacy trust and relationship outcomes.

Keywords: Artificial Intelligence, Airline Personalization, Personalization-Privacy Paradox, Algorithmic Trust, Passenger Loyalty

Copyright @ 2026: This is an open-access article distributed under the terms of the Creative Commons Attribution license which permits unrestricted use, distribution and reproduction in any medium for non-commercial use (NonCommercial, or CC-BY-NC) provided the original author and source are credited.

INTRODUCTION

The Transformation of Airline Services Through Artificial Intelligence and Hyper-Personalization

The airline industry is in the phase of digital transformation that is changing the face of the air travel experience with new technology tools such as artificial intelligence, machine learning, predictive analytics, decision-making systems, and

data-rich service technologies getting more integrated across each part of the passenger journey. The term 'AI' is misleading since it represents several computerised procedures that can be applied to mimic human abilities such as pattern identification, decision-making, language translation and reacting in real-time situations [1,2]. It is precisely these changes in technology that are revolutionizing traditional industries because of the power of AI to work with huge quantities of customer data and use those for creating personalized customer services. In airlines, it's beyond traditional online check-in systems and more about the creation of hyper-personalized and highly automated passenger experiences that are getting more widespread. One stage at a time, airlines are adopting AI technologies into different aspects the passenger journey. While planning the trips, passengers can get assistance from an AI-based system with route suggestions, flight bookings, customized offer, etc. When they are physically in the location of the airport boarding to their destination, AI-verified entry, security checking procedures, facial scanning systems, automatic translation and self-check-in are some measures to be adopted to make passengers' movement smooth and reduce service hassle [3,4]. Later on, AI-based customer support chatbots recommendation systems and review analyses can help provide immediate communication and customer-service recovery. In literature about tourist services as well, the authors have found that the use of AI-powered chatbots, demand forecasting, the provision of tailor-made recommendations, systems of language translation and introduction of smart technology are ways technology can enhance service delivery and customer experience.

It is a crucial moment now when personalisation of the airlines service is no longer only a marketing tool but an end-to-end customer journey aspect. The airline strategies nowadays involve predictive analytics and machine learning not only for better understanding of customers and anticipating their needs but also for proactive customer-service recovery and ensuring that consistent level of service is maintained on each digital touchpoint. One of the examples given in the South Asian study shows this change: airlines are gradually shifting from their previous service model to a more modern, highly algorithmic and automated one where passenger journey personalisation is one of the main ways to retain the passengers [5,6]. Why is this change so strategic for the airline sector? It's AI's potential to extract meaningful ideas from huge and diverse data sets and to deliver them in passenger-centric terms that makes it special. Present-day technology ecosystems for big data can gather input from various sources such as web pages, cell phones, CRM systems, IoT gadgets, social networks, payment records, tracking devices and databases. By connecting the information coming from different sources, companies like airlines can create behavioural profiles and design recommendation systems that lead to personalisation and data-driven decision-making [7].

The aviation-specific papers uploaded here stress that privacy-related issues in digital ecosystems are a big concern for airlines due to in reality passenger-related data might circulate across different entities like airlines themselves airports governments, payment companies, analytics suppliers, cloud environments and other third-parties besides the main players. Consequently, AI-enabled personalization has two simultaneous characteristics. First, it is a value-creation mechanism, because relevant recommendations, faster transactions, disruption notifications, customised services and automated assistance can reduce search effort and increase convenience. Second, it is a data-dependency mechanism, because the quality and sophistication of personalisation depend upon the collection, processing, inference and retention of passenger information [8,9]. This duality provides the starting point for understanding why AI personalisation in airline services cannot be assessed solely in terms of technological efficiency or customer convenience.

As shown in Table 1, the same passenger data that enable airlines to make services more relevant can simultaneously increase the informational exposure of passengers. This observation is central to the present review because the value of personalisation cannot be separated from the mechanisms through which personal data are acquired and processed.

Table 1. AI-enabled Applications Across the Passenger Journey

Passenger-journey stage	AI-enabled application	Potential passenger value	Data dependency	Principal concern
Pre-travel	Travel planning and intelligent search	Reduced search effort and greater relevance	Search history, preferences, location	Profiling
Booking	Recommendation systems	More relevant flight/service options	Transaction and behavioural data	Data over-collection
Pricing	Predictive/dynamic pricing	Potentially relevant offers	Purchase history and behavioural patterns	Perceived fairness
Airport arrival	AI authentication and facial recognition	Faster passenger processing	Biometric information	Surveillance and privacy
Airport service	Chatbots and virtual assistants	Faster responses and 24/7 assistance	Interaction history	Algorithmic opacity
Disruption management	Predictive service recovery	Early warnings and proactive assistance	Booking and operational data	Unwanted profiling
In-flight experience	Personalised services/content	Greater relevance and comfort	Passenger preferences and usage data	Loss of control
Post-flight	Feedback and predictive CRM	Continuous relationship management	Feedback and historical records	Long-term profiling

From Personalisation to the Personalisation–Privacy Paradox

Although the use of AI in personalisation allows for hyper relevant and convenient services, the literature shows that its benefits are accompanied by a major problem: the consumer may desire such personalisation yet at the same time resist the collection of personal data which enables it. This problem is frequently referred to as the personalization, privacy paradox [10,11]. The problem arises because although the consumer enjoys the benefit the firm gets through the use of personal information, the consumer simultaneously feels that the usage is a form of surveillance, that the consumer's boundary is being intruded, that the collected data may be misused, that data could be re-purposed, or that the consumer is no longer in control. The foundational research work demonstrated that the level of collection of information that can bring better personalisation is determined by the amount of trust that the user places in the firm while, from the next stage of the research, the focus switched to the issue that too much personalisation can create privacy-related worries and the consumer may even start avoiding the service [10-12]. This tug-of-war between benefits and privacy is more pronounced in AI-enabled services as AI systems can take information from consumers and make inferences from their behavioural patterns. The systematic review that is part of this article points out that the personalisation systems can make use of data like geographical positions, browsing records, purchase history, social media usage, past conversation and preferences which have been inferred. The consumer might find the service more user-friendly and efficient because of the data-driven approach yet they might still worry about the sheer quantity, the sensitivity, or the difficulty to understand, of the data involved [13]. As a result, paradox isn't the question of whether privacy matters to a consumer. It is rather the process where the consumer is weighing the benefits vs. risks, controlling the situation, etc. that makes the paradox. Privacy Calculus Theory gives a very good account of this matter: the person weighing what to disclose against privacy costs. The benefits may be for the consumer's convenience, lower research efforts, better recommendations, faster service, discounts, or continuity of service; while costs include, for example, the person being watched, information being misused, person losing control, being unauthorised and discrimination [12,14,15]. Most importantly, the systematic review report uploaded here has shown that these calculations are not fixed nor entirely logical, since consumers often do not have enough of an understanding of how algorithms combine datasets and deduce preferences. The use in context of the airline industry adds to this the contradiction further and the passenger data are not only about ordinary commercial preferences but the data could also be of a very personal nature such as a passenger's identity, the history of flights, payment of the tickets, the location, biometric markers, booking of flights, loyalty-programme information and data on the operations. These data could be shared across different organisations. In one instance, an airline company can be the data controller while another can be a data processor; in another example, a state organisation is in possession of passenger information or even it is another party like a third-party service provider. Distinguishing between personalisation intensity on one hand and personalisation legitimacy on the other becomes very crucial because even when one has a more accurate algorithmic personalisation one would not have to necessarily justify that the collected underlying data have a legitimate reason being perceived. The systematic-review evidence suggests personalisation beyond a certain level might be felt as surveillance, manipulation and loss of autonomy by users. If the company is not transparent at all about how their data privacy practices work then users might feel uncomfortable that their personal data have been exploited more than it is reasonably expected [13,16]. The available airline evidence provides an important empirical illustration.

In a study of 128 Pakistan International Airlines (PIA) passengers, AI perceived usefulness demonstrated a significant positive relationship with customer satisfaction ($r = 0.610$, $p < 0.001$). However, privacy concerns negatively moderated the relationship between AI benefits and loyalty, with the interaction effect reported as $\beta = -0.717$, $p = 0.033$ [5]. This is particularly valuable for the present review because it demonstrates that positive evaluations of AI and negative evaluations of data practices can coexist within the same passenger decision environment.

From the Table 2, the paradox is most clearly viewed as a balancing act where the positive effects of personalisation can also produce privacy risks. Personalization can add value, yet at the same time it is also data infrastructure that is being exploited in creating such privacy risk. So, instead of the airline field trying to understand simply if AI personalisation is positive or harmful, consider ask, when its advantages outweigh its privacy cost. The aviation data ecosystem further explains it well, that privacy risk is not about just being uncomfortable, it could be much more severe. As the report on privacy in aviation, the close integration of the airlines, the airports and the government creates several places where the passengers' data can get disclosed, mostly where there is a resort to using third-party platforms APIs cloud systems or cross-border data transfers. For example, the report on British Airways describes such a breach as the main example in aviation where about 400,000 passengers were affected and the company faced huge penalties from regulators. Even so, it should not be read as the material that all air carriers share the same level of risk. Beyond that, the wider AI ethics discourse backs up the worry by saying that privacy transparency responsibility, human supervision and proper governance should go together with the development of technology. From the review of AI ethics guidelines worldwide referenced in this document, transparency and non-maleficence, justice and fairness, responsibility and privacy were among the repeatedly mentioned principles [17].

Table 2: Evidence of the Personalisation–Privacy Tension

Evidence dimension	Positive side of AI personalisation	Negative/privacy side	Implication for airline services
Relevance	More individually appropriate recommendations	Extensive behavioural profiling	Relevance must be perceived as legitimate
Convenience	Faster search and service	Continuous data collection	Convenience may justify disclosure for some passengers
Service recovery	Problems can be predicted proactively	Requires extensive passenger and operational data	Proactivity may be valued but can appear intrusive
Customer experience	Personalised interactions can improve satisfaction	Excessive personalisation can produce discomfort	Personalisation intensity matters
Trust	Reliable systems can increase confidence	Opaque algorithms can reduce confidence	Explainability becomes strategically important
Data disclosure	Enables higher-quality recommendations	Creates vulnerability to misuse or breaches	Data governance becomes part of service quality
Loyalty	Positive experiences may encourage retention	Privacy concerns can weaken the loyalty effect	Loyalty depends on more than personalisation
Institutional context	Trusted airlines may benefit more from data use	Low institutional trust may amplify privacy concerns	Context and brand reputation matter

Because of this, the paradox between personalisation and privacy goes beyond the marketing or consumer realm; it is also a problem of ethical AI governance.

Research Gap, Review Objectives and Contribution

Yet, the progress of the AI-powered personalization has not only been fast, it also has left an ample research literature behind but most of it still remains broken up among various industries technologies geographical contexts and also different types of behavioural outcomes. A big part of the published works is based on studying personalization itself and other constructs like privacy concern trust satisfaction, engagement, or loyalty either separately or just as isolated factors, without really getting to see the way they influence one another under a single integrated setup [13,16,18]. The systematic review accompanying our research clearly indicates this fragmentation and even argues that the issue of how trust is capable of balancing the positive aspects of AI personalization against the privacy risks and how this struggle results in the different behavioural outcomes has not been thoroughly discussed yet. Another research gap refers to the trust issue. Trust has become so vital nowadays as customers do not get their services solely through airline staff; they also communicate with recommendation systems chatbots automated decision systems, biometric technologies and predictive algorithms. As a result, trust can manifest at the airline/organization, technology, or algorithmic interaction levels all at once [5,19,20]. Based on the literature reviewed in the material transparency explainability, perceived fairness and organisational accountability can affect trust and so also willingness to accept AI-powered personalised services. If I may be allowed to refer a third research gap: the scarcity of airline-specific research relating perceived value, algorithmic/digital trust, privacy risk and passenger loyalty is also the case. Why should South Asian airline be of importance when it comes to AI-based personalisation, then? The fact is that the South Asian case is most of all revealing because it is an empirical study beyond theoretical general settings of digital-marketing; it relates the discussed issues to airline passengers and empirically examines the relationships mentioned. The results show that AI usefulness leads to the positive satisfaction, digital trust partially mediates the impact of AI personalisation on the buyer's intentions and privacy concerns negatively moderate the AI" passenger loyalty relationship [5].

That means, the study offers direct support to the proposal that only AI personalisation cannot explain passenger loyalty. The geographical aspect can't be ignored either. The airline data in hand highlights how little research has been dedicated to South Asian aviation, while North American and European airline industries continue to receive much more attention. A major point made by the paper is that the cultural and institutional environment can influence how customers read the personalization, institutional trust and privacy. As a result, personalization-privacy paradox should not be generalized, i.e. it shouldn't be seen as working like that in different cultures without question. Institutional confidence, privacy norms, digital literacy and technology readiness are quite different things so that the perceived value-risk trade-off may be changed [8,21]. A further research gap is the lack of studies that examine how changes in time and methodological approach affect results. The uploaded material's systematic review notes that the recent trend in research work is dominated by the use of a quantitative survey-based way which is the most commonly used method nowadays but there are very few longitudinal experimental cross-cultural and behavioural types of research. This should not be ignored as privacy and trust will probably evolve when passengers get familiar with AI systems. For instance, a recommendation initially seen as helpful could become a problem when the frequency of personalisation increases or when recommendations start to become overly accurate in an unexpected way. On the contrary, frequent and good service experience might help build trust over time.

Table 3: Core Constructs and Their Proposed Role in the Review

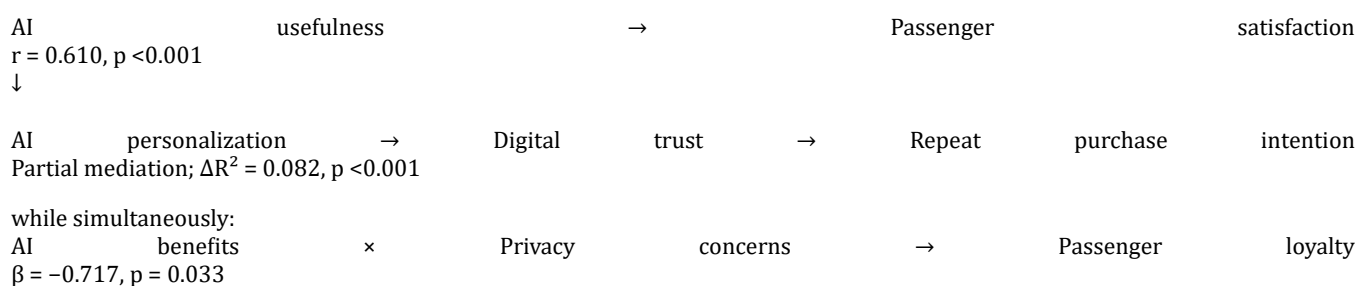
Construct	Conceptual meaning in this review	Positive mechanism	Negative mechanism	Expected relationship with loyalty
AI-enabled personalisation	Algorithmic tailoring of airline services to passenger characteristics, preferences and behaviour	Increases relevance and service responsiveness	May intensify profiling	Primarily positive, but conditional
Perceived value	Passenger assessment of benefits obtained from personalised services	Convenience, usefulness, efficiency and experience	Low value may make data disclosure unjustifiable	Positive
Algorithmic trust	Confidence that AI systems operate competently, fairly and responsibly	Reduces uncertainty and perceived vulnerability	Opacity and unexplained decisions weaken confidence	Positive
Privacy risk	Perceived possibility of intrusion, misuse, exposure or loss of control over personal data	—	Increases resistance and reduces acceptance	Negative
Transparency	Clarity concerning data collection and algorithmic processing	Improves understanding and control	Lack of explanation increases uncertainty	Positive through trust
Perceived control	Passenger's ability to manage data disclosure and privacy settings	Strengthens autonomy	Loss of control increases privacy concern	Positive through trust
Passenger satisfaction	Overall evaluation of the airline experience	Converts technological usefulness into favourable evaluation	Poor implementation can generate dissatisfaction	Positive
Passenger loyalty	Continued preference, repeat purchase and relationship commitment	Sustained value and trust encourage retention	Privacy concerns and distrust may stimulate switching	Final behavioural outcome

This review that means interprets the airline personalization-privacy paradox as a conditional and multidimensional issue rather than just a mere contradiction. Essentially, AI-powered personalisation is supposed to bring in a perceived value by making the offerings more relevant to the passengers, bringing about convenience and higher service efficiency besides giving them a better experience but largely this value is either conditioned by or restricted by the passengers' impressions for the algorithms' Passenger loyalty in return should come about if the advantages of AI services are seen in a positive light and privacy threats are considered legitimate, well-regulated and subject to a responsible oversight mechanism.

The relationships proposed in Table 3 provide the conceptual foundation for the remainder of the review. They also align closely with the emerging empirical evidence from airline research. In the PIA study, for example, AI perceived usefulness was positively associated with customer satisfaction ($r = 0.610$), digital trust provided partial mediation in the relationship between AI personalisation and repeat purchase intention ($\Delta R^2 = 0.082$, $p < 0.001$), while privacy concerns produced a negative interaction effect ($\beta = -0.717$, $p = 0.033$) [5].

Analytical Interpretation of the Available Airline Evidence

The empirical evidence currently available in the uploaded material can be represented as follows:



This pattern is very important in the analytical sense since it actually reveals why a simplistic model of "more AI more loyalty" is not sufficient. On the contrary, the findings rather hint towards a conditional mechanism in which AI introduces value, then trust transforms that value into positive behavioural outcomes and privacy issues may lower loyalty effect. A very important limitation is to keep in mind that these coefficients are from one study only of 128 PIA passengers and because of this cannot be assumed to be universal population parameters for the global airline industry. The strength of this systematic review lies in being airline-specific empirical anchor showing theoretically important mechanism that will further serve to compare with evidence from various broad areas of AI tourism marketing and privacy research. The biggest reason for the writing of this work and its review is to provide a critical evaluation through a systematic review of four related aspects that are:

- How AI-enabled personalization brings about perceived value in different passenger services offered by airlines
- Critically evaluate the role of algorithmic/digital trust in changing technological value into passenger satisfaction, repeat purchase and loyalty to a brand

- Demonstrating the restraining aspect of privacy risk within the personalization, privacy paradox
- Integrating how perceived value, algorithmic trust and perceived privacy risk together determine the level of passenger satisfaction, repeat purchase intention and long-term passenger loyalty

We think that the real value added is to integrate these different aspects in the airline-specific conceptual viewpoint. This paper sees personalisation not as a positive technological innovation in and of itself but as a conditional way of creating value. In such a way the paper shows that personalisation is an effective value-creation mechanism provided that there is a sufficient level of trust transparency privacy protection, perceived control and responsible governance. This idea fits well with the new research work about sustainable AI personalisation which suggests that there will have to be a balance between commercial relevance on hand and consumer autonomy on the other. This can be done with privacy-by-design, data minimisation, transparent consent, explainable recommendations, secure data governance and meaningful human oversight.

Theoretical Foundations of AI-Enabled Personalization in Aviation

Personalization through AI in airline industry services must be based on a theoretical basis that is more substantial than merely the classical concept of technology adoption as being determined by perceived usefulness and ease of use. Airline personalization implies regular gathering processing interpretation and application of passenger data to suggest personalized and tailor-made service experiences and dialogues. In parallel with this is how personalization, acceptance of technology, risks perceived as tied to data use and trust in the airline and their algorithms influence the reaction by the passenger [5,20,21]. The sources cited in this review uniformly reveal that AI-driven personalization can increase relevance convenience decision efficiency, customer experience, as well as perceived service quality yet these benefits are subject to the justification for data collection, openness of algorithmic workings and customers' trust [8,13,22]. Theory behind AI personalization is mainly necessary in the area of air travel given the nature of the customer journey in this sector which consists of multiple and interconnected digital touch points. Search history, booking records, payment details, seat preferences, customer loyalty programme usage, travel frequency, response to disruption events and customer-service calls - all of these can be potentially used to build more complete passenger profiles. While that opens up an avenue for airlines to provide highly customized and unique services, it simultaneously places the passenger at greater risk in regard of privacy and unpredictability of algorithms [23,24]. So, a theoretical account of AI-enabled personalization should cover both perspectives of the relationship: personalization as an enhancement of customer value versus the personalization as a risk that customer perceive.

Personalization as a Value-Creation Mechanism

Personalisation in the theoretical sense may be defined as the method adopted by organizations through which they try to make services more relevant to individual customers. Personalisation before the AI era generally was a matter of predefined customer segments or manually created profiles. Personalisation powered by AI goes another step by employing machine learning, predictive analytics, recommendation systems, natural-language processing and real-time behavioural data in dynamically changing customer interactions [8,21]. The systematic review presented in this paper shows that AI personalization is a connecting ability between data prediction communication and service delivery instead of merely being a promotional technique [21]. In the air transport business, this value-creation mechanism can have the effect in several aspects. An AI could find and suggest flights based on previous preferences, recommend new destinations based on travel patterns, suggest seating or ancillary services, personalize the notification of disruption, or even support an automatic rebooking. On the theoretical level, the main idea is that passengers are better off when the system reduces the energy they have to put in finding and evaluating possible alternatives. As a consequence, personalization will be value creating when it enhances the match between passenger's wants and airlines' supply [8,21,13].

Still, one significant theoretical difference has to be acknowledged and that is between the personalized offers from the airport operator side and the value created on the passenger's side. That a passenger receives something tailor-made through AI does not automatically lead to the value being created. Only when passengers regard their personalized offers/interactions as being useful relevant precise, timely and fit the situation do the value arise. The systematic review in particular concludes that personalization as a tool is not the final source of value; actually, it is the person who consumes the service that decides on its value by interpreting whether it fits their needs and serves the purpose. This delineation is of crucial importance in air services because usually passengers are bombarded with lots of information. For example, a passenger who wishes to book a flight will probably come across the different options for departure times connections fares, baggage conditions seats loyalty benefits and additional products. AI personalization may because of this help alleviate some of the problems passengers face when dealing with this large volume of information, in particular by removing from the consideration the ones not likely to be of interest to the passenger [21], [8]. This, on theoretical grounds, means that personalization can be a source of functional value through the reduction of cognitive effort [21].

Persanalization may also provide a source of value which is experiential in nature. For instance airline services are a prime example of an experiential product as it includes numerous contacts before the flight, during the flight and after the flight. The use of personalized communication may help create more responsive and passenger-centered feelings around these interactions, such that they appear to be tailor-made for the traveler. For example, AI-powered chatbots or other conversational systems can provide instant and relevant feedback and might even change the flow of conversation based on the passenger's situation. In fact, the smart-technology literature that is used as basis for this review also identifies AI-powered chatbots, virtual assistants and smart technologies as potential avenues for enhancing personalization as well as service responsiveness at the same time. [22] But, the work under analysis highlights the need for maintaining the role of humans, mostly since machines may not display empathy in situations that demand deep emotional or complex service involvement [22].

A further layer of value is the economic one. AI could be able to connect travelers with products and services which are more suitable to their preferences in such a way as to decrease the need for a fruitless search and also enhance the value that consumers get from the offerings. But when AI is employed in areas like dynamic pricing or high granularity segmentation the value proposition will change and might even be negative in some cases. Sharma and Lee [23] recognize AI integration and dynamic pricing as two fundamental developments in airline management strategy yet, an airline's most cost-effective fare may not be considered as fair and useful only from a traveler perspective. That is why organizational perspective on value can differ greatly from the customers' viewpoint. Airline managers must be aware at least theoretically that there may be a point where personalization no longer increases value because the benefit derived may not outweigh the cost for autonomy or privacy that people perceive. There is a growing agreement that this relationship between personalization and value is not a direct cause-effect one. A systematic review brings evidence that, in the initial stage, personalization could definitely increase the perceived utility and so relevance level still it can mean a deterioration in performance when it is excessive, intrusive, or threatening to consumer autonomy [21]. That means, the point of this paper isn't that increasing personalization would indefinitely keep on delivering more customer value. Rather, there could be a situational level where a higher level of personification doesn't bring about an increased benefit at least not to can be perceived or that would not lead to a decrease of privacy concerns. Figuratively, the model looks like this: AI personalization greater relevance increases in the level of perceived value more positive reaction Yet, when contextual limits are crossed: Over personalization perceived intrusion growing privacy apprehension diminishing value.

This point of view is extremely crucial considering that this paradox of personalization and privacy is the main topic of the literature review done. An air traveler might be quite pleased with a system that knows their preferred seat, at the same time, that individual will be very anxious and not at peace with oneself if the system apparently has access to more details about their travel patterns than just the seat preference. This way personalization value, besides being based on the content of personalization offered, is also determined through various factors like the level of information that is extracted; the type of usage of the information and whether the customer sees the practice as justifiable [21,24,13].

As illustrated in Table 4, AI personalization generates different kinds of potential value, but each value category is also tied to a limitation to that very value. Functional value comes down to a high level of accuracy in recommendations; convenient value is closely tied with ease of use; economic value partly depends of the perception of fairness; and relational value relies on the proper handling of passenger details.

Table 4: Dimensions of Value Creation Through AI-Enabled Airline Personalization

Value dimension	AI mechanism	Airline application	Potential passenger benefit	Potential limitation
Functional value	Predictive analysis	Flight and itinerary recommendations	Easier decision-making	Incorrect recommendations reduce usefulness
Convenience value	Automated processing	Automated booking and rebooking	Saves time and effort	Excessive automation can reduce control
Information value	Data filtering	Personalized flight options	Reduces information overload	Important alternatives may be filtered out
Experiential value	Contextual personalization	Individualized travel communication	More responsive experience	Can feel intrusive
Economic value	Data-driven matching/pricing	Ancillary offers and dynamic pricing	Better-fitting offers	May generate fairness concerns
Relational value	Continuous learning	Loyalty-programme personalization	Greater continuity	Continuous tracking can create surveillance perceptions
Predictive value	Forecasting passenger needs	Proactive disruption alerts	Reduced uncertainty	Incorrect predictions undermine confidence
Service value	AI-supported interaction	Chatbots and virtual assistants	Faster assistance	Lack of empathy in complex cases
Decision value	Recommendation algorithms	Destination/flight selection	Lower cognitive effort	Algorithmic bias may distort choice
Long-term value	CRM personalization	Retention-oriented communication	Stronger relationship	Requires responsible data governance

Bilal *et al.* through their empirical study provide most of all relevant supports to this point of view. The correlation of the study was between AI perceived usefulness and satisfaction of customers and found by them was that relationship was statistically strong and significant – $r = 0.610$, $p < 0.001$ [5] among a sample of 128 Pakistan International Airlines' passengers. From this, the authors have conceptualised the perceived usefulness as the ability of the AI personalization to lessen the effort and save time of the passengers while enabling them to identify a suitable personalized solution. So, their research demonstrates direct supporting evidence that the functional usefulness in an airline setting will yield a better customer evaluation. Despite this very promising conclusion, the reader needs to take care when considering the limitations of this empirical finding as well. This particular finding has its origin from an airline company and a particular passenger sample and so, the result should not be generalised as the universal measure for the global aviation sector. Rather, it shows that the key point behind personalised value - more usefulness results in better passenger evaluation - is verifiable at least within the confines of an airline business context. From the value perspective, personalisation using AI is aligned with relationship marketing.

By repeating the passenger interaction, the airline can collect additional information that can be the feeders for improvement of next-level interactions. Because of this, through the application of AI airlines can transform past customer contact into factors for shaping future service [21]. Such a continuous change can be the driver of overall satisfaction with the airline rather than just bettering that one specific interaction. The systematic literature review also presents AI personalization as a growing means for customer relationship management [21]. Still, it cannot be forgotten that value creation is contingent on the quality of data. Mishra *et al.* [24]. To be exact investigate the meeting place of AI, data quality, travel optimization and customer experience. AI personalization will be very likely to give undesirable suggestions if, as passenger profile is either incomplete or outdated, or not accurate. This way, we see that high level of sophisticated technology does not always equate a high level of perception of value by the consumer. To put it simply, an individual's experience with a personalized product or service is largely affected by both a correct and timely identification of that individual's needs, as well as the way in which the product/service is delivered.

From there, this paper proposes the theory that AI personalization mainly enhances passenger value by being relevant and useful, convenient and efficient and providing for improved experiences. Of course, all of that depends on the appropriateness of the context, the correct understanding, fairness in the treatment and the acceptance of the passenger. This serves as the starting-point of examining what factors influence the evaluation of passengers and which ones make them adopt AI technologies in the first place.

Theoretical Perspectives on Technology Acceptance, Value and Consumer Behaviour

Davis [20], the writer of the TAM (Technology Acceptance Model), has put forward a theoretical explanation that reveals an understanding of the technology adoption process that will Definitely be among the most popular ones. As TAM key aspects - perceived ease of use (UE) and Perceived Usefulness (PU) - the users will be more likely to be a fan of the technology if they perceive the former to assist them in the tasks' execution and the latter to be accomplished effortlessly [20]. The airline personalization scenario is a good fit for the model as there are many AI-driven services provided online and interacted with through customers like airline websites, mobile apps chatbots recommender systems, etc. and other automated customer support systems that are all digital interfaces which passengers encounter. When talking about the airline industry, perceived usefulness refers to passengers' belief about how well AI implementation is helping them to get things done e.g. one would argue that a passenger has personally experienced the usefulness through automated booking, custom flight proposals, notification of disruptions a head of time, automatic reserving and custom seating selection. On top of digital trust, the intention to repurchase, privacy concerns and customer satisfaction, Bilal *et al.* [5]. [5] also regard PU and PEOU as core ingredients in an airline personalization environment. Their investigation shows an example of an AI personalized service that functions well and is user-friendly in conformity with TAM. The AI perceived usefulness is 0.610 ($r = 0.610$) in correlation to customer satisfaction at a $p < 0.001$ level of significance, which indicates a very strong positive correlation between the two variables [5]. The result could be interpreted such that a passenger who perceives AI services as useful is more likely to rate the services very positively.

If occurring alone, TAM and customer loyalty are abstract ideas. For instance, a flight passenger might happen to choose the carrier because of its service (say, an AI automated chat through the website or a mobile app for a best-bet slot) which might have no continuance of long-term emotional and behavior attachment and loyalty to the carrier. In another way, a traveler benefits an automated rebooking of the ticket during the disruption but might have no long-term loyalty being a frequent flyer of that carrier. That's the reason why although TAM on its one alone is a major part, it still fails to explain the complete change of customer behavior from one-time use of the technology into long-term loyalty through multiple behavioral measures at least for the customers for the service being technology-based. But, it might be this drawback that become so relevant in AI personalized consumer experience as non-exclusive to the conventional technology, the user's negative view of that technology in turn starts the acceptance of the early stage of the AI technology to become successful of the final product due to the factors that largely depend on the service itself. And, it

not only distinctly emphasizes just on the functional performance, the autonomous factors of conventional model of technology acceptance but also raise issues the privacy, transparency of data management, user-centric interests, fairness and confidence that connect with the acceptance of the AI technology. digital trust, something that looks halfway through and privacy issues like 'who controls the data', becomes significant as a mediator, so suggested by Bilal *et al.* [5] and as a moderator, these two factors play the critical roles in the successful adoption of the AI technology. This has also been confirmed as the other researches reckon that the reason behind the increased focus on AI personalization surely is its impact on customer engagement but it is rather on the one about perceived usefulness and perceived ease of use [21]. This will be significant theoretically for it directly goes against the causal presumption:

Personalisation leads to customer purchase/loyalty. On the contrary, the evidence for much longer effect chains through customer behavior were found: Personalization leads to usefulness/relevance leads to perceived value led to satisfaction/engagement leading to behavioural intention once customer trust and privacy concern become stronger/weaker [21,13]. So, the consumer behavior presupposition fills the gaps left by TAM which merely described on technological use. Customer satisfaction with the product/l service provides a measure of the performance of the ultimate outcome of the consumption experience and because of this quantitatively, it is arguably the most important post-consumption indicator. On one hand, engagement can be defined as the extent to which thoughts, feelings and actions within one individual customer consistently repeated over time [21]. Customers' engagement may be varied like interaction with AI apps, information search, submitting feedback, sharing contents, ensuing conversation. Really the link between customer satisfaction and loyalty examined in the airline business is undeniable. Also, Ahmed *et al.* [25], research finds from their research on customer satisfaction, satisfaction management in the airline industry and customer complaint management, explore how customer's satisfaction, loyalty and complaint management accomplished in the airline business. And, Oliver [26], in the theoretical underpinning to understanding loyalty as an ongoing relationship, not just in a single transaction or a multi-item purchase decision. One notion from these two different points of viewpoint may be interpreted on that using AI in the way to customize can make customers loyal to the related company if their comprehensive experience gets merrier all the way long due to such personalized treatment and interaction. So, a hybrid discussion of these theoretical systems should come at here, because one does not simply focus on consumer pattern outcome here. While perceived usefulness and perceived ease of use determine acceptance of technology and lead to more sustained usage of AI enabled systems by airline passengers, the eventual consumer outcome is real value of usage which determines whether or not it is a worthwhile usage that will then lead to satisfaction and engagement.

Table 5 clearly points to technology acceptance as representing only a small portion of the passenger decision process. The road to loyalty through AI use needs multiple psychological evaluations. This is a theoretical reason for why two passengers may be given the same personalized recommendations but react entirely to a different extent. One may find it helpful and trustworthy while the other could see it as too intrusive or redundant. passenger diversity plays a very significant role in this case. Veseli *et al.* [27] looked at the combination of AI-driven personalization and traveler satisfaction trust perceived value and technology readiness as variables. It means that based on their readiness to and willingness to interact with digital tech, passenger reactions will vary. The readiness of technology can affect how a passenger may view AI personalization as an innovative feature that adds value to their life or as a technological hassle that gets on their nerves. A principle of the same sort applies to the underlying data's quality.

Table 5: Relationship Between Technology Acceptance, Perceived Value and Passenger Behaviour

Construct	Theoretical meaning	Airline AI example	Immediate passenger response	Potential behavioural outcome
Perceived usefulness	Belief that technology improves performance	Automated rebooking	"This saves me time"	Greater acceptance
Perceived ease of use	Low effort required to use technology	Simple airline AI interface	Reduced cognitive effort	Continued use
Perceived relevance	Degree of fit between output and needs	Personalized itinerary	Greater diagnosticity	Stronger purchase intention
Perceived value	Overall assessment of benefits received	Personalized travel service	Positive evaluation	Satisfaction
Service quality	Evaluation of service performance	AI-supported customer service	Improved experience	Engagement
Satisfaction	Positive evaluation after interaction	Effective digital service recovery	Confirmation of expectations	Repurchase intention
Engagement	Continued cognitive/emotional interaction	AI assistant and personalized content	Active participation	Continuance and advocacy
Trust	Confidence in airline and technology	Reliable AI recommendation	Reduced uncertainty	Repeat purchase
Privacy concern	Concern over personal information	Passenger profiling	Perceived vulnerability	Resistance
Loyalty	Durable preference for airline	Repeated use of personalized services	Relationship commitment	Repeat purchase and advocacy

As Mishra *et al.* [24], data quality is closely related as well as to customer experience in AI-supported travelers. So, incorrect data can cause a breakdown of the very concept of use that TAM centers its adoption on. This creates a major, theoretical border condition: the perceived usefulness of TAM is dependent upon perceived system performance while perceived system performance is partly dependent on the quality of data and algorithm behind the personalization process as well. The relationship of AI personalization with purchase behavior is also indirect. Through a systematic review, it was found that Gao *et al* [8] reported that the effects of AI personalization on purchase intention could be mediated by customer experience and the perceived service quality. On the other, side Canhoto *et al.* [13] point out to Really personalization in AI relies more on the trust, fairness and transparency of the organization rather than technology. Taking this point into consideration, Plainly personalization is not to be viewed as something that instantly makes the customer act. On the contrary, it changes the customer's evaluation of the service that in turn might lead to a change of the customer's intention.

As theoretical interpretation of a Prasanthi *et al.* [28]'s work which studies AI-backed digital marketing and customer retention in the aviation industry, these findings support an argument that AI's importance is not in enabling individual transactions but in its potential to keep customers over time. The limitations of TAM from the theoretical perspective should be, at the lowest extent, acknowledged. The model has the capability to tell us why people might view a tool as useful or convenient but it fails to shed light on whether passengers think that the airline is entitled to obtain the personal data that it collects to deliver personalized content to them. It may also fail to reveal if the passenger does not only trust that the recommendation is based the data, which it may, but they are also concerned about how the data has been handled and who they have revealed it to. In answering these and similar questions, privacy and trust theories need to be used alongside the TAM setup.

Integrating Privacy Calculus and Trust-Based Perspectives into Airline Research

Privacy Calculus Theory can explain why people are happy to allow personalization while also having privacy concerns. Basically, the idea is that individuals weigh the potential advantages of disclosing personal data on one side and the privacy risks on the other side. An airline passenger, for instance, might see the benefits of getting things done faster (e.g. speedier transactions or quicker processing of requests) as well as getting tailored advice and other relevant recommendations (personalized offers or customized disruption assistance, for instance). Yet, he at the same time might be concerned about the risks of having one's profile created in an overly detailed way, unauthorized access to the data, misuse of data by third-parties, surveillance, or loss of control. So the relationship between data disclosure and privacy-calculus might be presented by the formula below: perceived benefits of data disclosure - perceived privacy risks = willingness to accept personalization

Of course, this does not always result in an actual, conscious computation as such, but rather, passengers are implicitly judging the question: should one make a compromise to help benefits of personalization against the price of the information needed to deliver those benefits? The article of systematic review included in the present research focuses on identifying privacy calculus not only as a concept but rather as a mechanism through which consumers can assess the trade-offs between the benefits of personalization and their privacy risks and points out that, for instance openness a reliable image, familiarity and trust in an official institution and an individual's perceived ability to control things might all influence such an assessment [21]. Privacy Calculus is a very suitable theoretical model to explore the area of personalization in the airline industry because information is being collected plus the unfolding of the customer journey from booking to payment to getting frequent flyer points through various interactions with the company, etc. and is being stored in the customer's record. All this collected data - booking history, favourite flights, method of payments, customer loyalty patterns and online activity and possibly also some kind of biometric information (like passport facial recognition scan etc.), etc.) can form the basis of quite comprehensive customer profiles that airlines can use for various purposes. A scan over the articles of the research work which dealt with privacy in the aviation industry shows that privacy threats linked with the exposure of personal information, processing of biometric data, involvement of third-parties in the operations, handling of personal data across borders and use of the consent processes not explained in detail have been recognized [7].

These factors are most of all noteworthy because the passengers might not be always aware who holds their personal information or how the disclosure of such data to one organization may facilitate access to the very same data through other organizations. For example, passengers might give some data to an airline to book a ticket but later find out that their data was used to give offers to hotels or that such data had been handed over to insurance companies without any further consent of theirs. Culnan and Armstrong [14] lay a foundation of procedural justice through their research paper that is of help in identifying this challenge [14]. One key element that will lead customers to accept data practices is that the data collection and its use must be in line with the rules of fairness and appropriateness. In regard to AI-based personalization, as a result to them, the question one should raise does not simply relate to the legality or the level of technical security of data collections but also to the appropriateness of the purpose and the scale of the use

of data. Dinev and Hart [15] are of a different opinion that also focuses on the assessment of privacy through the identification of the perceived benefits and risks [15]. They are of the idea that the trade-off between the benefits and risks is one of the major factors influencing consumer privacy decisions and that the consumers who express concern for keeping their data private while still accepting some form of personalization might be a perfect example of that. A passenger could be worried about being spied on by an airline and data collection but at the same time provide information, as the personalized rebooking or disruption management is an enormous help for consumers. The idea of trust is a big part to understanding why people might be willing to accept such a risk. Where passengers cannot see directly the workings behind the algorithmic processes, trust comes into play in particular.

In most cases, a passenger has no clue about which data the AI system made use of, which weighting factor the data were assigned, or the assumptions the algorithm was based on, or even if the recommendations were made fairly. Because of this, trust is a major means of overcoming the uncertainties that an AI-mediated relationship can bring. As Morgan and Hunt [19], a very powerful relational base for this argument is the commitment-trust theory. Commitment-trust is the foundation of long-term relationships as it enables mutual confidence and reduces uncertainty. Airlines can apply this principle beyond organizational trust by extending it to the realm of digital and algorithmic trust. As a rule, a passenger not only has to trust the airline as a company, but also has to be reasonably confident in the system through which the airline uses data to create a personalized experience. A review of the literature shows that trust is the major factor behind the connection of personalization with privacy, engagement and purchase behaviour [21]. It maintains that trust can bridge personalization's advantages with its negative aspects of surveillance, data misuse and opacity of algorithms. So, trust should not merely be considered as an added variable to be investigated independently; it can act as the mechanism via which passengers assess if the AI's benefits are Yes trustworthy enough to justify their continued interaction with the technology. Recent research conducted by Bilal *et al.* lends support for an empirical validation of this idea. Their air travel-related research discovered a partial mediation effect of digital trust between the AI-driven offering of personalized experiences and the intention to repurchase of the passengers as quantified by $R^2=0.082$ and $p<.001$ [5]. On top of that, the authors' conceptual illustration clearly shows digital trust as positioned between AI personalization and repurchase intention, whereas privacy concerns are acting to weaken the positive connection [5]. This outcome is worth looking at since it implies that tailoring the experience to consumers alone has no guarantee of customer repurchase.

Rather, the consumer has to come around in his digital confidence enough that personalization becomes a factor in building up the relationship. From a purely theoretical standpoint:

AI personalization perceived usefulness trust repurchase intention instead of the simplified version:

AI personalization repurchase intention it is also this research that gives a clear picture of the role played by the consumer's privacy concerns in the whole context. Privacy concerns were found to negatively moderate the loyalty relationship related to technology, $\beta = -0.717$, $p = 0.033$ [5]. Yet, it has to be noted clearly that it represents the findings from the particular context, not the universal level of airlines' consumer privacy concern coefficient. What is more important at the theoretical side is that it illustrates Really privacy issues can Yes lower the positive effects of AI features.

As Table 6 illustrates, privacy calculus and trust may give complementary accounts rather than alternative accounts of passengers' decision process. Privacy calculus accounts for the benefit/risk calculation and trust accounts for the process by which passengers deal with uncertainty and vulnerability during the calculation. Transparency and explainability are this way essential support wheels.

Table 6: Integration of Privacy Calculus and Trust Perspectives in AI-Enabled Airline Personalization

Theoretical component	Positive mechanism	Risk mechanism	Airline manifestation	Passenger evaluation
Data disclosure	Enables personalization	Creates exposure	Travel history and preferences	Is disclosure worthwhile?
Perceived benefit	Convenience and relevance	—	Personalized recommendations	Greater utility
Privacy risk	—	Misuse or unauthorized access	Passenger profiling	Greater vulnerability
Perceived control	Ability to manage information	Lack of control	Privacy settings	Greater autonomy
Transparency	Explains data practices	Algorithmic opacity	Clear explanation of AI use	Greater predictability
Organizational trust	Confidence in airline	Institutional distrust	Responsible data governance	Reduced uncertainty
Algorithmic trust	Confidence in AI outputs	Fear of errors	Automated rebooking	Greater reliance
Procedural fairness	Appropriate data use	Unexpected secondary use	Data used beyond booking	Perceived legitimacy
Accuracy	Relevant recommendations	Incorrect profiling	Personalized offers	Perceived competence
Security	Protection of information	Breach or exposure	Payment/biometric systems	Perceived safety
Human oversight	Accountability	Excessive automation	Human escalation after AI	Greater reassurance
Trust–privacy interaction	Risk becomes manageable	Risk overwhelms benefits	Personalized service with controls	Determines continuation

The systematic review highlights the need of transparency explainability fairness and appropriate data governance for responsible AI [21]. In addition, the review claims that sustainability of personalization calls for privacy-by-design, data minimization, transparency about consent, explainability of recommendations, transparency of privacy controls, secure data management and responsible human oversight.

Still, transparency must not be seen as enough. Passengers can know how they are treated but still find it excessive, as an inaccurate algorithm can still be seen as too intrusive. As a result, trustworthy personalization must be a convergence of usefulness accuracy transparency fairness privacy and passenger authority. Not to mention, this is also aligned with the responsible-AI literature which advocates transparency fairness accountability, privacy and responsibility to be core principles for designing AI governance [17]. Mostly for aviation, these principles are in particular critical as the personalization efforts of the airlines exist in a service context about multiple customer interactions and sensitive data.

The theoretical integration can therefore be summarized as follows (Figure 1):



Figure 1: Conceptual Framework of AI-Enabled Personalization, Consumer Responses and Digital Trust

The integrated structure from Table 7, illustrates that the different theories play roles at different stages of the customer decision process. TAM is the one that mainly deals with the technology acceptance; the personalization perspective is used to determine how value creation is carried out; consumer-behaviour theory is the driver of satisfaction and engagement; privacy calculus is the yardstick by which data-related risks are measured; and trust-based perspectives explain the driver behind the willingness of passengers to put their faith in the airline and its AI systems.

One reason to go with integration is the support from the empirical findings of our previous study Bilal *et al.* The study simultaneously revealed three very theory-wise distinctive mechanisms: usefulness of AI was connected with passenger ($r = 0.610$); the relationship between AI personalization and repeat purchase intention was partially mediated by digital trust with a $R = 0.082$; and the loyalty pathway for passengers related to AI was negatively moderated by privacy concerns with a $\beta = -0.717$ [5]. In total, these findings reveal that a single, direct-relationship model would give an insufficient explanation for customer behaviour. A further, broader systematic review arrives at a very similar conclusion. It lists perceived usefulness and relevance as mechanisms of value creation, privacy issue, perceived intrusiveness and feeling like losing control as mechanisms of risk generation and trusting as the reconciling between these conflicting judgements [21]. A good theoretical basis for considering not simply as a contradiction but as a conditional decision process personalization-privacy is the result of the present study. Based on all of what I just said theoretical concepts, this section develops a conceptual model suggesting that AI-mediated personalization does not lead to customer loyalty automatically, but through several stages involving changing passengers' perceptions.

Table 7: Integrated Theoretical Foundation for AI-Enabled Airline Personalization

Perspective	Principal construct	Main theoretical question	Positive mechanism	Boundary/risk	Position in overall framework
Technology Acceptance Model	PU and PEOU	Will passengers adopt the technology?	Utility and ease encourage use	Low usefulness/usability	Functional acceptance
Personalization/value theory	Perceived value	Does personalization create meaningful value?	Relevance and convenience	Irrelevance/intrusion	Value creation
Consumer behaviour	Satisfaction	Does the experience meet expectations?	Positive experience	Service failure	Short-term evaluation
Customer engagement	Continued involvement	Will passengers continue interacting?	Relevant and interactive service	Fatigue/resistance	Relational response
Privacy calculus	Benefit–risk evaluation	Is disclosure worthwhile?	Benefits justify disclosure	Privacy risk outweighs benefit	Privacy trade-off
Procedural fairness	Fair information practices	Is data use legitimate?	Appropriate data use	Unexpected secondary use	Legitimacy
Trust theory	Organizational trust	Can the airline be relied upon?	Confidence reduces uncertainty	Institutional distrust	Relationship foundation
Algorithmic trust	AI competence/reliability	Can the passenger rely on AI?	Accuracy and explainability	Errors and opacity	AI acceptance
Responsible AI	Transparency/fairness/accountability	Is AI responsibly governed?	Ethical safeguards	Bias and weak accountability	Governance condition
Relationship marketing	Commitment/loyalty	Will the relationship continue?	Trust and satisfaction	Switching/resistance	Long-term outcome

For instance, a product/service perceived to be more tailored or relevant can be seen as providing convenience and added value and That's why, passenger and engagement can be improved by these perceptions. Conversely, any type of personal data collection used to customize a product/service or to interact with a passenger, will likely raise concerns and create a negative attitude about the extent of invasion. That means, the factors of perceived trust, perceived control fairness disclosure, algorithmic competence, etc. that will dictate how much of a privacy problem a passenger will tolerate or consider it to be unacceptable.

So, the main idea behind the theory would be: AI-based personalization could make a big contribution to the generation of passenger value. Yet, the perceived value is transformed into behavioral change only if the technology is perceived as acceptable, the service is seen as useful and relevant, privacy risks are within the limits that people are willing to accept and there is enough trust in the airline and its algorithms.

I would like to emphasize that this theoretical perspective is quite suitable for the airline industry since in-person contact at airports can often last for more than just a few minutes and personalisation is not an event which can change from passenger to passenger in an instant. So a single passenger can have multiple interactions with and airline over time which enables the airline to better cater to individual preferences, while at the same time the passenger's awareness of the amount of data that the airline is capable of handling and of storing is growing. Personalisation at its best, it means building closer relationships with your customers simply by knowing more and more about their preferences and their needs. Yet, the higher level of personalisation and tailoring can trigger more feelings of being under observation or feeling a loss of privacy.

AI-Driven Personalization Across the Airline Customer Journey

AI Applications in Search, Booking, Pricing and Recommendation Systems: Artificial intelligence revolution has turned the traditional airline customer experience, consisting mainly of standardized transactions, into a much more service-oriented, individually tailored journey. The airline personalization through customer demographics, frequent flyer status and manual preference were just three of the traditional methods used in customer personalization which did not lead to much progress in the matter of customer satisfaction. Personalization based on AI goes one step ahead by using machine learning, predictive analytics, natural language processing and recommendation algorithms to understand big chunks of customers' data and to give them tailored responses very quickly through their mobile phones [4,8,13]. Actually, personalization is more and more a part of the digital channels where passengers find flights, compare different options, make reservations and buy extra products. Besides, the systematic literature review has described this change as a switch from passive messages towards active, predictive customer relationship management, where algorithms learn from the interaction with the customers all the time [8].

AI can assist during the search phase by retrieving past searches, click behaviour, travel history and other preferences to sort out or suggest potential flight options. This can make things much simpler and faster for passengers mostly since they may need to consider multiple factors like destinations schedules pricing and ancillary services. Because of this, the main benefit lies in personalization itself, but rather in saving cognitive work and enhancing availability of choice [3,8]. A systematic literature review shows that customers appreciate personalized recommendations most, mostly if those recommendations address and respond directly to the customers' needs [8]. Besides, the booking phase also gives personalization options. Based on passengers' past and predictive preferences respectively, airlines could propose a seat, bag check meal ticket enhancement, insurance, or other extra services. A personalized suggestion can help passengers by adding convenience and making their decisions easier. At the same time, there are growing concerns over how to demarcate the help that passengers receive from the commercial persuasion to which they may be subjected after recommendation technology becomes too smart. The technology that has been developed to give value may cause the passenger's trust in a service to weaken as well as perceived autonomy is reduced when passengers think that recommendations have been excessively targeted or even manipulative [5,13]. AI really helps in price setting and demand regulation. Advanced forecasting algorithms can interpret the customer behavior changes and the patterns of demand to come with more efficient pricing schemes and promotional initiatives. On one hand, the implementation of this change will bring the company higher profit margins and a better allocation of resources while however, it can bring the consumers' feeling satisfaction as they get more suitable offers.

Still, individualized pricing can sometimes make passengers dissatisfied if they think that the pricing is unfair or, for example, they see themselves getting treated worse than another customer because there is not really a solid reason for that [7,13].

From the figure we see Table 8, AI is capable of creating value through multiple touchpoints during the pre-flight stage of a passenger journey. Yet, interestingly that most applications of this technology require passenger data, because of this personalization at the same time as data collection implies an increase in the airline's responsibility on responsible data management. Airline systems store booking records in their databases but can also retrieve information on customers' loyalty programmes, mobile app usage, payments and other similar data which in turn justify increased attention to governing [7,23]. As a result, the existing body of work points out that to evaluate personalization powered by AI one should not solely focus on how much conversion or revenue increase it brings; passengers' perceptions of relevance fairness transparency and control should also count as equally significant success factors [8,9,13].

Intelligent Personalization During Airport and In-Flight Experiences

The function of AI is not confined only to the point a customer books his flight. On the contrary, through check-in, airport navigation boarding disruption management and in-flight services it is the very heart of personalization that is being extended to the customers. Through chatbots and virtual assistants passengers can get real-time updates, whereas the use of self-service technologies can be limited only to repetitive tasks. So, the smart technologies have a great potential to make a passenger happier by making him more satisfied and at the same time making it more efficient for a service provider [3,4,24]. In the airport alone, AI can give passengers boarding information, gate changes, travel notifications and check-in assistance. Operational data predicted by the systems can help detect potential disruptions in advance and keep the affected passengers informed through relevant data only. This forward-look service recovery shows quite an important change from the traditional way, which meant solving passenger issues after they had occurred, while the new one involves anticipating them when their resolution still is a viable option [5,23]. The research from Bilal *et al.* [5] shows a strong correlation between a passenger's perception of a technology's usefulness and his/her satisfaction with that technology for airlines mainly. In fact, the study showed the relationship as positive and statistically significant ($r = 0.610$, $p < 0.001$), that AI use is very likely to be appreciated when customers do not only consider it innovative, but also believe it helps them achieve their goals more efficiently by eliminating obstacles in the process to reach their goals [5].

Table 8: AI-Enabled Personalization in Airline Search and Booking

Customer activity	AI application	Expected passenger benefit	Possible limitation
Flight search	Intelligent search and ranking	Relevant alternatives and reduced search effort	Behavioural profiling
Flight comparison	Predictive recommendations	Easier comparison of alternatives	Algorithmic bias
Booking	Personalized flight suggestions	Faster decision-making	Lack of transparency
Seat selection	Preference prediction	Greater convenience	Inaccurate prediction
Ancillary services	Individualized recommendations	Relevant additional services	Commercial pressure
Pricing and offers	Predictive analytics	Targeted offers	Perceived unfairness
Loyalty offers	Individualized rewards	Greater perceived value	Extensive data collection

Techs based on biometrics are also an area of significant advancement. With the help of Facial recognition or similar technologies, the passengers will be identified and the airport process will get easier. Even so, unlike regular preference data, biometric data poses more privacy issues. Passenger privacy study identifies biometric processing, passenger movement tracking, booking platforms, loyalty programmes, mobile applications and Wi-Fi as key sources of privacy concerns in the aviation industry [7]. Besides, it stresses that the more players involved the more vulnerable passenger data gets as it becomes easier for inappropriate access, unintended sharing, or improper utilization of passenger information to happen. The growth in automation of passenger services is also a trigger for questions about humans and AIs' sharing the roles. Though AI can manage many repetitive tasks, some of them even very efficiently, not every airline customer interaction is something that happens routinely. Issues like flights being delayed or the aircraft being completely cancelled, missed connections and handling of complaints are emotionally stressful situations that require human empathy and decision-making. The results of the paper "Smart-Technology" study given are in agreement with this argument: AI is mostly considered a human-like assistant by the managers, i.e. the managers who participated in the interview were not considering AI as a replacement for human staff. In the coding process, eight of such managers were identified as representing this view of AI [4].

That's why, an efficient customer personalization at airline level can be realized through pairing automated intelligence with human assistance. While automated solutions may be the way of delivering speed, consistency and predictives, humans are needed for a personal, more empathetic approach which is in particular necessary when a customer feels his/her expectations to be frustrated by the technology [4,9,24].

Post-Flight Personalization, Predictive Engagement and Customer Relationship Management

The final airline passenger touchpoints post-boarding are post-flight communication and relationship management. Passenger interactions after a flight can continue to be monitored by AI for future recommendations to passengers, including personalized loyalty rewards, destination suggestions and targeted communications [8,25,23].

Post-flight AI systems will pick up passenger travel frequency, preferred destination, purchasing patterns and previous interactions patterns. Airlines can then use this information to offer future travel options, loyalty programmes, or other services. This type of customer engagement should be more effective if passengers receive info that is tailored to their situation. From the analysis it was confirmed AI recommendations can a lot reduce search efforts and speed up decision making, while factors like perception of trust and usefulness decide on whether these interactions lead to engagement [8].

On the other side, personalization by itself is not enough to create engagement or customer loyalty. From the literature Obviously relationship is conditional [5]. To start getting the loyalty benefits of customer personalization customers must see it as value-added, credible and trustworthy [5,8,9,13]. It is one of the things how a customer decides to stay with a given company or brand after having first contact and receiving a product or service.

Figured on Table 9, there could be an association of the airline's use of personalized features at almost every stage of a passenger's journey with this passenger. This will result in forming a circle of information which gets continuously improved from one interaction to the next. Still, on one side, the same feature will cause the passenger to feel even more watched when he doesn't know what kind of data they'll collect from him nor in what manner they'll use it [8,7,23]. Because of this, an important implication would be that the extent of personality does not necessarily equate to the quality of personalization. Through the lens of systematic review, nonlinear events of the effects personalization have on a customer is revealed: personalization first enhances perceived relevance and usefulness by which the customer may be attracted but after a while it may lead customers to perceive threat, avoidance and their autonomy concerns due to excessive personalization [8]. In the same way, aviation literature focuses on extensive data ecosystems, which amplify the possible consequences of weak privacy governance [7].

Table 9: AI Personalization Throughout the Airline Customer Journey

Journey stage	Principal AI applications	Value created	Main passenger consideration
Pre-search	Predictive targeting	Relevant information	Data profiling
Search	Intelligent recommendations	Reduced search effort	Recommendation accuracy
Booking	Personalized offers	Convenience	Transparency
Pricing	Predictive analytics	Relevant offers	Fairness
Airport	Chatbots and self-service	Efficiency	Human assistance
Boarding	Biometric identification	Faster processing	Data privacy
In-flight	Personalized services	Experiential value	Service quality
Disruption	Predictive service recovery	Reduced inconvenience	Algorithmic reliability
Post-flight	Targeted communication	Continued engagement	Communication fatigue
Loyalty	Personalized rewards	Repeat-purchase value	Trust and privacy

From the customer-journey standpoint, it turns out there is a prerequisite condition sequence: personalization based on machine learning algorithms could Really result in an increase of relevance and convenience on top of the fact those elements can drive satisfaction and a customer's commitment; once that is done trust acts as a bridge between them which helps the transformation into repeated purchase and loyalty; still, at this point the presence of privacy concerns and lack of freedom together with feeling of being intruded may be the undermining factors for a very long process of building the entire system [5,7-9,13]. That means, it is fair to perceive machine learning personalization as something far more than just technology; rather, this is customer-value creation through which the company will not only get customers satisfied with their offerings, but will retain their loyalty, too and the key here is customers' perception of such a value creation mechanism that is fair credible trustworthy and has proper data handling.

Perceived Value as the Positive Side of AI Personalization

Functional, Experiential and Economic Value: Perceived value is the principal positive mechanism that AI-driven personalization can use as the link between technological competence and genuine customer benefits. For example, airline passengers see the worth in the tailored service offered by the ai if this tailored service makes getting the goods, receiving recommendations and getting the service from them worth their while for money, time, or effort invested etc. The existing body of literature points out that personalization is not a given source of value but it has to be understood by passengers as a source of value that is worth their while e.g. they interpret the service as a way of helping/supporting their travel goals etc [3]. The paper review also suggests that the way in which personalization creates value, at least per customers, is mainly in the areas of the decrease of information load, the increase of decision speed and the enhancement of relevance of alternative options.

Functional value is very decisive in airline services since air travel is the realm of several consecutive, small decisions from the flight choice, the price check, the baggage handling, the seat selection, the extra services purchase, check-in, airport navigation, to even the handling of delays or cancellations [8,9,29]. With its ability to understand and react to the preferences and previous behaviour of the passengers, the AI can shorten this extensive decision-making list and offer the customers the most relevant and best choice options. A passenger who is not aware of an airline offering an alternative route for \$18 and an airport lounge seat for \$9 may be overwhelmed if presented with all the available options one by one. An intelligent system, in contrast, would filter options which are in close accordance with passenger preferences or requirements so that, for example, this passenger may choose from options that are most likely suitable for him or her and that can minimize the amount of thinking involved [8,9,29].

Experiential value goes a step further over functional efficiency. A great many airlines use AI systems, recommendation technologies and tailored communication through various channels to make their services and interaction not only fast but personal. Research on tourism reveals that AI virtual assistants and chatbots, if equipped with adequate personality, knowledge and language processing capabilities are very good at providing personalized assistance and fast response. At the same time, the same smart technologies which power these virtual assistants are also used to enhance customer experience at each stage of the travel journey. Yet, it is quite clear that the only factor cannot produce experiential value. From our point of view, the results provided by a smart-tourism project indicate that in emotionally complicated or socially complicated situations, it is the humans who can be most influential through their empathy, understanding and ability to relate.

Personalization might also create economic value for passengers. For example, when the passenger is helped by a system, he or she can easily find the right type of tickets, extra services, loyalty rewards or other travel options. In fact, the matching between the preferences and the offerings through AI-based systems can allow the customer to take a decision in one go, without the need for searching and comparing each of his or her options.

Table 10: Dimensions of Perceived Value Created Through AI Personalization in Airline Services

Value dimension	AI-enabled mechanism	Passenger benefit	Possible airline outcome	Potential limitation
Functional value	Intelligent search and recommendation	Easier comparison and decision-making	Higher service efficiency	Incorrect recommendations can reduce usefulness
Convenience value	Automated check-in, chatbots and virtual assistants	Less effort and waiting	Improved digital experience	Excessive automation may reduce human support
Experiential value	Personalized communication and travel recommendations	More relevant and engaging interaction	Higher satisfaction	Poor personalization may feel artificial
Economic value	Personalized offers, pricing and ancillary recommendations	Potentially better-matched options	Increased conversion and ancillary revenue	Perceived unfairness can reduce trust
Informational value	Predictive analytics and tailored information	Reduced information overload	Better customer decision support	Excessive information may create fatigue
Relational value	Personalized loyalty communication	Greater recognition of individual preferences	Stronger customer relationship	Excessive targeting can appear intrusive

Still, a customer may see an offer as a helpful one but still take issue with the price being set through an AI that he/she perceives as a machine with no sense of humanity and which he/she cannot trust. Because of this, not only the customer should be made aware of the offer through personalization but he/she should also be convinced that it is just, fair and rightful. The customer must first be presented with an offer and then given an explanation of its rationale so that fairness and a sense of legitimacy are the basis of customer acceptance [5,13].

As shown in Table 10, the positive side of personalization consists of several interconnected forms of value rather than a single benefit. The central implication is that airlines should evaluate AI personalization according to the value experienced by passengers, not simply the sophistication of the underlying algorithm. This is consistent with the review evidence showing that technological precision must first be converted into subjectively recognized relevance and usefulness before it can influence consumer behaviour.

Convenience, Relevance, Efficiency and Perceived Service Quality

Convenience is the immediate source through which personalization of AI creates perceived value. Flights include a whole sequence of stages which are information- dense. A common requirement for the passengers is to keep on tracking and dealing with updates of flight schedules fares baggage, etc. AI systems can take out the burden of passengers by filtering out their information to the passengers in a timely manner. The cited sources state that this lowering of stress level due to information overload is one of the main benefits of personalization [2,3,9].

Relevance plays a big part too. An AI-generated suggestion will only benefit someone if it matches closely with what that person actually needs. Suppose someone regularly travels with carry-ons, suggesting extra baggage would probably be quite helpful. Then again, constantly advertising useless ancillaries can only get on a person's nerves. In a way, relevance is a connecting element of personalization and perceived usefulness. The literature review states quite clearly that the main way that one's perception influences intent to buy is via one's perception of relevance, usefulness and trust rather than only one's perception. Inefficiency in processing a passenger's query or request can be a major point of annoyance; efficiency, that means, is a crucial path to perceived value. It is a well-known fact that AI systems work much faster than manual ones and can easily handle great volumes so they can make recommendations quickly or respond quickly to queries. In this case study, the tourism operators who were surveyed recognized that a significant portion of the value which AI delivers to them is through better productivity in operations and competitor and price analysis while focusing mainly on the enhancement of reservation processes and communication. Although what I just said data has been taken from the hospitality industry, the main principle behind it can be applied to the highly digitalized airline business sector. As far as airline services are concerned, customers perceive quality to be a key thing influencing loyalty. That's why, if personalization enables customers to find their way in an airline service and respond faster to their requests, the level of perceived service quality can definitely be elevated. Based on the systematic review, for example, Gao *et al.* found that AI technology can not only increase a customer's experience level but also service level perception [9]. In general, the research about the tour industry also points to AI's potential to assist customer service through personalized assistance, quick delivery and improved efficiency in operation.

In short, an airline process automation might be done successfully by a machine yet still lead to an unsatisfactory customer experience, in case of system inaccuracies, rigidity, or inability to cope with exceptional cases. So, service quality cannot be equated entirely with efficiency. A tourism research project illustrates this point well: while AI was considered by many participants as a valuable complement, they also saw that humans must ultimately be involved and that the AI systems are not able to be as empathetic as a human. The practical example of an airline offers more direct evidence for the value, satisfaction relationship. Customer satisfaction turned out linked to the level of perceived usefulness of AI. For instance, in the PIA, the coefficient of correlation for customer satisfaction with usefulness of AI was +0.610 ($p > 0.001$; $N = 128$) [5]. It is very important for this paper as this result supports the idea of creating value from an AI system not an abstract idea and shows the possibility of a link between a perceived digital usefulness and a measuring of passengers' satisfaction in airlines.

Table 11: Mechanisms Through Which AI Personalization Generates Passenger Value

Mechanism	How AI personalization operates	Perceived passenger value	Expected behavioural consequence
Relevance	Matches recommendations with passenger preferences	"This information is useful to me"	Greater acceptance
Convenience	Reduces number of manual steps	Lower effort	Continued digital use
Efficiency	Processes information rapidly	Time savings	Higher satisfaction
Decision support	Filters large numbers of alternatives	Lower cognitive burden	Greater confidence
Service responsiveness	Provides rapid personalized assistance	Immediate support	Better service evaluation
Experience customization	Adapts messages and recommendations	Individual recognition	Stronger engagement
Predictive assistance	Anticipates potential needs	Reduced uncertainty	Higher perceived usefulness
Service recovery	Provides targeted responses during disruptions	Reduced inconvenience	Potential retention

The mechanisms summarized in Table 11, indicate that perceived value is a multidimensional process. In particular, relevance and usefulness appear to precede broader outcomes such as satisfaction, engagement and loyalty. The systematic review cautions against assuming that personalization itself directly produces engagement: personalization may first need to be interpreted as useful and trustworthy.

When Personalization Becomes Valuable: Passenger Heterogeneity and Contextual Factors

Another major downside of technology-driven analysis is that it tends to overlook passenger diversity by assuming everyone reacts the same way to customized airline services [27,28,30,31]. On the contrary, personalization is quite subjective and depends heavily on the situation. The same feature that a few passengers deem helpful and time-saving might come across as unwanted intervention to others. This kind of divergence is mostly driven by passenger travel habits. A regular traveller who is used to how airlines operate may see a great value in automation as it speeds up things, is more likely to handle disruptions seamlessly and may deliver some loyalty-related perks as well. Then again, an occasion flyer, who is less familiar with airline operations, may prioritize being guided in their choices, receiving destination-oriented tips and getting things simple through technology. As a result, one particular AI function might provide different levels of usefulness to different passengers. Besides, digital literacy can A lot determine how passengers perceive added value from a system feature. It's likely that the customer who's quite tech-savvy will regard machine-generated suggestions that save time as a great convenience. On the contrary, the passenger with limited knowledge about technology will probably request further clarification or rely more on human support. The current review paper systematically highlights that the degree of a consumer's comfort and experience with both a new AI technology and digital services in personalization plays a part in determining the level of a favorable or even favorable response to personalized experiences.

Their interpretation of personalization could even be affected by their age and the country or cultural context they come from. But, these are not absolute traits, but more or less they can shape privacy or technology preferences. The study proposes research across different cultures since the level of data disclosure might be different as, for instance, the local level of trust in institutions, how strict the norms are on the right to privacy and the level at which the people are digitally literate. Level of personalization is yet another key area of consideration. There's very little support in academic literature for the common belief that personalization will automatically create more value if it increases the quantity of customized content at a given point. A modest level of personalization may increase relevance while a huge amount may generate feelings of being watched or manipulated as well as loss of control. The current systematic review reports that moderate personalization can provoke the strongest positive reactions yet, high level personalization makes people even more prone to avoiding and perceiving threat than usual.

This is one of the reasons why personal data that airlines may collect is often very rich. Passenger's past reservations data, loyalty programme records, travel patterns, mobile-app usage, biometric records and their onboard digital activities together provide a quite a detailed description of an individual customer. The aviation privacy research literature is warning that airlines and airports are handling huge amounts of personal and operating information and third-party analytics can expose the data subject to privacy risks. That's why, the value of personalization when the data is sensitive will be much lower than when the data used for the decision to make personalizations was considered appropriate and proportional by the passenger.

Table 12, highlights how the worth of AI personalisation can only be grasped on the characteristics of the passengers and the services offered. Because of this, the main takeaway is that airlines should target the most appropriate level of personalisation, not the maximum one. The systematic review explicitly claims that the success of personalisation is mainly affected by five factors: data sensitivity, the closeness and intimacy of the product and the service offering; prior customer relationships; customer familiarity/comfort with AI (artificial intelligence); and organizational safeguards.

Table 12: Passenger and Contextual Conditions Affecting the Value of AI Personalization

Contextual factor	Likely effect on perceived value	Explanation
Frequent travel	Potentially increases value	Experienced passengers may prioritize speed and efficiency
Low travel familiarity	Can increase value of guidance	Personalized assistance can simplify complex decisions
High digital literacy	Often facilitates acceptance	Passengers may find automated systems easier to use
Low AI familiarity	May reduce immediate value	Greater explanation or human support may be required
High privacy concern	Can reduce value	Benefits may be outweighed by perceived data risks
Strong organizational trust	Can increase value	Passengers may be more willing to accept personalization
Sensitive data use	Can reduce value	Personalization may appear intrusive
Moderate personalization	Potentially maximizes value	Provides relevance without excessive intrusion
Excessive personalization	Can reduce value	May create surveillance or manipulation concerns
Strong human support	Can enhance value	Human intervention can compensate for AI limitations
Travel disruption	Can increase value of predictive AI	Timely personalized assistance may reduce uncertainty
Cultural/institutional context	Can alter value perceptions	Expectations concerning privacy and technology differ

The results of the Personal Information Algorithm study reinforce this point of view. AI usefulness was positively related to customer satisfaction, but it turns out that privacy concerns negatively influenced the relationship of the AI and loyalty benefits ($= -0.717$, $p = 0.033$, indicating that the positive effect of digital personalization may be limited by people's concern over privacy) [5]. In other words, value created through AI personalization should not be viewed as purely positive construct. It is embedded within a broader personalization, privacy setup, where customers are simultaneously appraising what they are getting from the airline and what they are giving back in exchange. Section 4 overall illustrates that the perceived value is the main benefit of AI-enabling personalization. AI is capable of filtering information overload, increasing relevance of services, providing convenience for the customer, boosting efficiency of services and improving overall quality perception of the service.

Yet, such benefits are not always realized. Personalization brings value solely when clients perceive it as relevant, balanced and understandable. Once personalization hits the level of being too much for a passenger or when there are questionable practices of privacy handling of data, then the same technology that was a source of value can suddenly become perceived risk. This conditionality serves as the ground for these topic about algorithmic trust, which will be crucial to determining whether customers are really agree and follow a personalized service recommended by an AI.

Algorithmic Trust and Passenger Acceptance of AI

The Nature and Dimensions of Trust in Airline Algorithms: The shift towards relying on algorithms instead of human employees has led to trust being the central factor that determines the extent of passengers acceptance of AI-driven personalization. At least six examples have been given of AI tools that might be used in the airline industry, each potentially capable of collecting and processing personal data about passengers to create a decision or recommendation suitable for one individual. Sometimes, trust in a digital or algorithmic system gets split. Trust is the combination of perceptions of competence reliability integrity, fairness transparency security and benevolence [19,21,32].

Rather than understanding how personal information is being used, a patron could regard a business technologically capable but mistrust its AI systems. Like that, an AI model could be delivering good results while still arousing skepticism if clients feel it is changing prices or using data not with their proper permission. So, the overview identifies trust as a way of lowering anxiety: customers willingness to accept risk grows as they feel an organization and its AI systems will carry out work effectively and that benefits customers [9,21]. Apart from the type of service offered such as the amount of personal and transactional information shared at the individual level, this difference holds particular relevance for aviation. Information like the history of bookings, the activity of the member of a loyalty programme, payment details, travel preferences, location-based information and sometimes also biometric data could constitute an passenger profile.

Aviation Big data is the field where data flows of this nature may extend from airlines to airports, analytics providers, payment processors and other data-related third parties. This way, besides trust being based on whether passengers are satisfied with an algorithm output, trust is also dependent on whether passengers beliefs about data usage are that the entire ecosystem of data is safe and well governed [7].

Evidence for Table 13: The sizes presented are based solely on the systematic review's discussion of different categories of trust at the institutional, technological and relational level, incorporating traits like competence honesty ethical behaviour transparency explainability fairness accountability and responsible data management [9,19,21]. The specific relevance of the area in question is justified by the data about passenger data collection, third-party processing and non-transparent consent within airline ecosystems [7].

Table 13: Dimensions of Algorithmic Trust in AI-Enabled Airline Personalization

Dimension of trust	Meaning in the airline context	Passenger evaluation	Potential consequence
Competence	Ability of AI to process passenger information and produce appropriate recommendations	"Does the system understand my needs?"	Greater acceptance
Reliability	Consistency and dependability of AI outputs	"Will it provide dependable information every time?"	Continued use
Accuracy	Degree to which recommendations, predictions or information correspond to actual passenger needs	"Is this recommendation correct?"	Higher confidence
Transparency	Clarity regarding data use and algorithmic decisions	"Why am I seeing this recommendation or price?"	Reduced uncertainty
Fairness	Perception that AI decisions do not unfairly disadvantage passengers	"Am I being treated fairly?"	Greater legitimacy
Security/privacy	Confidence that personal data are protected	"Is my information safe?"	Greater willingness to disclose data
Accountability	Belief that someone is responsible when AI makes an error	"Who will help if the system is wrong?"	Greater institutional confidence
Benevolence	Perception that personalization is intended to benefit the passenger rather than manipulate them	"Is this actually helping me?"	Stronger relational trust

This position is also substantiated by empirical airline findings. The team led by Bilal was able to determine through their survey of 128 Pakistan International Airport passengers that digital trust was a significant feature of the relationship between AI-based personalization and outcomes for customers. In their report they stated the standardised beta coefficient was $= 0.406$, $p < 0.001$ for digital trust and the researchers described the trust as a partial mediator in the personalization, loyalty relationship [5]. This point should be taken seriously since it shows that the benefits of AI do not come from the mere deployment of technology: a person's satisfaction with a digital system and the carrier running behind it plays such a major role in deciding the customer's satisfaction level.

Transparency, Explainability, Accuracy and Perceived Algorithmic Competence

Algorithmic trust is hard to establish because passengers cannot figure out how an AI makes its decisions. In this way, the "black-box" nature of complicated AI systems generates an information gap: whereas the airline and the tech company are aware of the variables that affect an algorithm's conclusion, the passenger only gets to see the result, like a recommendation, a price, a message, or a service outcome. The ethical aspects of trustworthy AI are the focus of responsible AI research and include transparency accountability fairness and privacy as major elements [1,13]. The review of world AI ethics guidelines too found that transparency, justice and fairness, responsibility and privacy were the ones mentioned most often in the different AI-governance documents around the world [17]

Transparency here refers to passengers being allowed to know the information used for making personalized recommendations and their purpose, instead of a disclosure of the technical process in airline personalization a meaningful transparency should consist in communication of what data are used, why they are used, what type of personalization is applied and what the passenger's degree of control is. For instance, if a passenger gets a personalized recommendation for the product or experience he will most likely like and the airline says that it is based on a few different aspects, searching destinations loyalty activity and expressing preferences, then it is a good chance that the passenger won't find the recommendation creepy.

The systematic review singled out transparency as one among the four key drivers leading to trust together with explainability, subjective fairness and responsibility of the organization. In particular, it highlights that consumers tend to be more open to sharing information if companies clearly explain their data policies and privacy functions like for example, data anonymization transparency so operates on both technical and human levels: on one hand, it enables passengers to comprehend what the system is but it demonstrates that the airline is ready to be held accountable for its work with AI [19,21]. Accuracy is through another essential element.

Personalization is useless if the algorithm keeps producing irrelevant suggestions. Perhaps an airline recognizes that the customer flies overseas frequently yet still present them with inappropriate connections, packages, or even travel products, this way creating wrong impressions. If such things keep happening, algorithmic competence could be greatly doubted. The aviation big-data literature also points out data quality and integrity are fundamental as inaccurate or inconsistent information can damage reliability of analytics across the interdependent systems of an airline and an airport the correlation between the precision of algorithmic outputs and trust is a give and take relationship; accurate personalization enhances trust in the system while higher trust motivates people to disclose information and interact more [7]. But, when confidence is too much, trust becomes uncontrolled and a person accepts an AI recommendation without critically analyzing it. So, the systematic review suggests a type of trust that can be called "appropriately calibrated trust": that is a trust which reflects the level of competence, accountability and ethical checks of the system [9].

In other words, the passengers' trust needs to be in line with their knowledge of the system's reliability responsibility fairness and ethics of handling data. In the case where a passenger gets recommendations by the AI that he is able to understand and he is satisfied with, that increases his confidence in the airline; whereas then again, a passenger who is not convinced that the recommendation is trustworthy may stop disclosing his information which, in turn, decreases personalization and thereby trust. Yet, if passengers get too comfortable with AI recommendations and stop challenging them, it can result in a state of overtrust. That's why, per the systematic review that there is a need for what they label as "appropriately calibrated trust", a trust that matches the reality of a system's capabilities and ethical checks.

The Table 14 summarizes results from the systematic review related to transparency explainability fairness, accountability and responsible data management [9,19,21]; responsible-AI principles from the SSRN source and the world-wide AI ethics literature [1,17] and aviation evidence dealing with data quality privacy third-party processing and human accountability [7].

Owing to the PIA study one particular airline-specific case example has been highlighted. A mere 44% of the interviewed passengers were interested in sharing personal data with PIA. Based on the results, the researchers advised that the airline needs to create a passenger-facing data dashboard highlighting the types of data the airline is holding, reasons why they are collected and ways how the passengers can manage their data [5]. This result shows that a trusting relationship is not granted simply because the passengers make use of an airline's digital tools. It may well be that through their digital engagement the passengers are getting a different kind of access but at the same time, they can be very limited in the amount of personal information they agree to reveal.

Table 14: Trust-Building Mechanisms for AI-Enabled Airline Personalization

Trust-building mechanism	What the airline should demonstrate	Expected passenger response	Evidence base
Transparent data practices	What information is collected and why	Reduced uncertainty	Systematic review
Explainable recommendations	Understandable reason for personalized output	Greater perceived legitimacy	AI-trust literature
Accurate recommendations	Consistent relevance to passenger needs	Higher perceived competence	AI personalization literature
Fair treatment	Absence of unjustified discrimination or disadvantage	Greater confidence	Responsible-AI literature
Privacy control	Ability to manage data-sharing preferences	Greater sense of autonomy	Privacy/trust literature
Accountability	Human or institutional responsibility for AI decisions	Greater confidence in recovery	Responsible-AI/aviation evidence
Secure data management	Protection against unauthorized access and misuse	Greater willingness to engage	Aviation privacy literature
Human oversight	Availability of human intervention when AI fails	Reduced perceived vulnerability	Smart-tourism/AI literature

The lesson drawn from this is that just having smart algorithms is not going to work. Even a super intelligent and very accurate AI system might end up being distrusted, if it is deemed by passengers as being obscure, unequal or invasive. However, it is quite likely that a carrier deploying only basic artificial learning programs will be able to build a greater degree of confidence, provided it makes clear why and how data will be used - gives passengers control and human element in the mix etc are kept in check.

Trust as a Mediating Mechanism Between AI Personalization and Passenger Loyalty

Trust is a key thing when it comes to passenger loyalty. While AI can provide immediate convenience to users, it doesn't automatically lead to the kind of engagement that keeps customers returning and referring others. The passengers' evaluation of personalized experience is key - they have to see it as reliable, beneficial and safe. Trust so is the psychological means that enable technical AI advantages to lead to human relationships [8,19,21]. The systematic review highlights this mediated mechanism of the process. It was acknowledged in the review that AI personalization can increase service quality and customer experience, yet trust and perceived usefulness are factors that will define whether these customer-related benefits will actually lead to behavioral responses from them. The research papers reviewed showed that trust is what links AI-powered personalization to customer engagement, whereas privacy concerns can break this link by making people doubt algorithm recommendations [8].

Our evidence from the airline field is mainly convincing because Bilal *et al.* tested directly the effect of this mechanism with a sample of passengers. In their study of N = 128 PIA passengers, digital trust was only a partial mediator = 0.406, $p < 0.001$, they said. That means, the authors concluded that, before digital trust is considered as a tool for AI to create customer loyalty, it should be first considered as a necessary prerequisite for it [5]. It shows by concrete evidence that trust in AI personalization should be put in the middle not only between AI personalization and loyalty but also between AI personalization and loyalty if we do not wish to see it as an underlying variable that is independent only.

The whole mechanism can be illustrated schematically as:

AI-powered personalization perceived usefulness/relevance algorithmic trust satisfaction/engagement repeat purchase and passenger loyalty.

But, the entire process is not a direct line. A passenger's privacy concerns can be the factor which will disrupt or at least weaken the positive path. This point was also shown by PIA, where privacy concerns much moderated the relationship of AI personalization and passenger loyalty = -0.717, $p = 0.033$ (5) [5]. This point is a crucial part of the issue of personalization and privacy where a paradox exists as the data-based personalization that leads to the highest degree of passenger value, could be at the same time perceived as ineffective, when passengers are viewing the use of data as too invasive.

Evidence for Table 15, The first four rows of data refer to a Bilal *et al.* study on passengers' usage of digital services at PIA. These data so should be considered as results from that particular study rather than as generalisations about all airline customers. The other data rows provide a consolidation of the findings of a systematic review for trust personalisation user participation and openness and justice [8,19,21]. This also indicates that trust is an ongoing process and not merely a one-time experience. Trust develops in stages through repeated encounters. Bilal *et al.* state that by starting with simple digital services that carry minimal risk, airlines can gain customers' trust and only gradually can the more complex and data-heavy aspects of personalisation be offered once customers are comfortable with the new digital system through their positive experience [5].

Naturally, there will be an opportunity for airlines to gain trust through digital services and at the same time to deliver the highest possible level of personalisation which is a big selling point. Yet, a passenger might find an overly personalized suggestion quite intrusive and be very reluctant to share personal data if the reason for doing so is not clear. This implies management wise that airlines should not focus too heavily on the customer's relationship's initial phases for maximizing personalization level. They can earn trust from the consumer via accurate suggestions,

explanations that are open and clear, private area control options that are visible, digital service recovery that is dependable and also help from a human that is always there when required. The survey by PIA is in this sense a real-life example: 68% of the respondents were prepared to tolerate small delays for better digital service. At the same time the survey recommended that disruptions and their solutions should be communicated in transparent and personalized manner, offering automated alternatives [5].

Generally, the findings identify algorithmic trust as a means that connects the power of technology to the acceptability of passengers. Personalisation is the potential for giving more value, but it is the level of trust that decides whether a passenger is willing to use such a personalized service. When a passenger feels the algorithm is accurate open fair, secure and accountable, he / she should be a satisfied and loyal customer. On the contrary, if the same passenger is not getting all of those, then the very same personalized service may become a source of suspicion, surveillance and resistance to him/her. This dual role puts algorithmic trust high in the list of factors influencing why a change from human-based interaction to personalization via AI technology leads to such a varied level of customer satisfaction and engagement across different contexts and customers [5,8,9,17,21]. That means, trust should not merely be recognized as a digital transformation byproduct, but it has got an essential intermediary role in the transformation process from a perceived AI usefulness to the generation of sustained passage loyalty, while privacy concerns work as an important boundary factor that can disrupt this mechanism. This theoretical structure is the basis to the next section where more directly the dark - negative side - consequences of data - intensive personalization are addressed.

Table 15: Empirical Evidence Supporting the Trust-Based Pathway from AI Personalization to Passenger Outcomes

Relationship/mechanism	Evidence	Statistical evidence	Interpretation
AI/digital convenience → satisfaction	PIA passenger study	$r = 0.610, p < 0.001$	Digital usefulness is associated with stronger satisfaction
Digital trust → loyalty-related outcome	PIA passenger study	$\beta = 0.406, p < 0.001$	Trust contributes significantly to longer-term customer outcomes
Trust as mediator	PIA passenger study	Partial mediation reported	Personalization effects operate partly through trust
Privacy concerns → personalization-loyalty relationship	PIA passenger study	$\beta = -0.717, p = 0.033$	Privacy concerns weaken the positive relationship
AI personalization → engagement	Systematic review evidence	Mediated rather than uniformly direct	Trust/usefulness help explain behavioural acceptance
Transparency/fairness → trust	Systematic review	Consistent conceptual/empirical support	Ethical governance strengthens acceptance

Table 16: Passenger Data Collection, AI Profiling and Privacy-Intrusion Risks in Airline Services

Passenger-data source	Information collected	Personalization application	Privacy-intrusion risk	Evidence
Online booking	Identity, itinerary, contact details, preferences	Personalized flight and ancillary recommendations	Secondary use of booking information	Booking data are identified as an important aviation data source, while purchase history and preferences are used in AI personalization [21], [7].
Frequent-flyer programmes	Travel history, loyalty status, preferences	Customized rewards and offers	Long-term behavioural profiling	Aviation evidence identifies loyalty programmes among major passenger-data collection points [7].
Mobile applications	Location, searches, browsing and usage behaviour	Real-time recommendations and assistance	Continuous tracking and profiling	Location, browsing behaviour and digital activity can support personalization, while extensive collection can create privacy concerns [21].
Biometric boarding	Facial/biometric identifiers	Automated identification and seamless boarding	Exposure of highly sensitive information	Aviation evidence identifies biometric boarding as a passenger-data touchpoint and highlights associated privacy concerns [7].
In-flight digital services	Wi-Fi usage, entertainment choices, service interactions	Personalized entertainment and service assistance	Behavioural monitoring	In-flight services and Wi-Fi usage are identified as aviation data sources [7].
Third-party analytics	Passenger profiles and transaction/behavioural information	Segmentation and predictive personalization	Unauthorized access or secondary processing	Aviation evidence highlights processing by third-party analytics and marketing organizations as a privacy challenge [7].
Cross-platform integration	Combined information from different systems	More accurate passenger predictions	Loss of contextual privacy and transparency	Interconnected aviation systems create additional data-sharing nodes and vulnerabilities [7].
Predictive profiling	Inferred preferences and behavioural patterns	Anticipation of future passenger needs	Surveillance and manipulation perceptions	The systematic review associates excessive personalization with perceptions of surveillance, manipulation and loss of control [21].

Privacy Risk and the Dark Side of Data-Driven Personalization

With the help of AI systems, passenger personalization has reached an extent where detailed customer data collection and processing are the main drivers. Airlines can, for instance, extract a profile of customer expectations by combining past bookings, loyalty programmes, browsing history, app engagement location biometric identifiers and customer service preferences. Although this can mean a better fit and higher satisfaction from a customer's side and also improve service delivery, it inevitably gives rise to problems related to monitoring, unsanctioned data handling and exploitation identification privacy breaches and lack of control [1,7,13,21]. For instance, a personalized and targeted approach to passengers via AI may at the same time cause them to feel insecure and invaded. As a result, personalization versus privacy dilemma appears to be one of the key issues within the field of AI-based airline service: on one side, customer data is the source of value-added and personalized experiences while, then again, it can be a reason of concern for customers when they are being watched [13,21].

Passenger Data Collection, Profiling and Privacy Intrusion

The worry on privacy rises when data coming in from various customer interaction points are combined. While passengers are able to accept in reality certain information, such as contact details, or date of birth is essential when booking a ticket, they may not comprehend entirely how their information is then used with other types of behavioural data for profiling or predictive personalization [7,21].

These types of data mining could be a reason for passengers to feel that the airline has a far deeper knowledge of their habits than it was ever intended by them to disclose.

From Table 16, it is clear that passenger data for AI-enhanced airline products is harvested across various channels, as every new source tends to provide a new avenue for customer service personalization as well as a possible data privacy breach [7,21].

The evidence suggests that privacy intrusion is therefore not produced by one isolated technology but by the cumulative integration of passenger information. While individual data points may appear relatively harmless, their combination can generate detailed behavioural profiles that passengers may not expect or understand [1,7,21].

Perceived Privacy Risk, Data Vulnerability and Loss of Control

The privacy risk is a passenger's personal view that the gathering and treatment of her or his data might have some unfavorable results. These unfavorable effects may include illegal access abuse spying, undesirable profiling, sharing the information with third parties, being treated unfairly and losing one's ability to control the later use of the data [7,21].

One key difference is that even if there is no risk objectively (e.g. no cyberattack has happened), a passenger can still perceive him or herself as a potential victim. This is mainly due to the passenger's lack of understanding of how algorithms work, combining information, deriving preferences, predicting future behavior [21]. The systematic review highlights that consumers frequently lack knowledge about combining and inference of data by the algorithm and because of this privacy decisions are partly based on trust, past experiences, social norms and perceived control.

Table 17: Dimensions of Perceived Privacy Risk in AI-Enabled Airline Personalization

Dimension	Meaning in airline context	Passenger vulnerability	Possible response	Evidence
Data-security risk	Personal information may be exposed through cyberattacks or weak systems	Identity and financial information may be compromised	Reduced disclosure	Aviation analysis identifies unauthorized access, misuse and breaches as major risks within interconnected data systems [7].
Unauthorized-use risk	Information is used beyond its original purpose	Passenger loses confidence in data-use boundaries	Selective disclosure or resistance	Opaque aviation consent may permit processing or sharing that passengers do not fully understand [7].
Surveillance risk	Passenger activities are continuously tracked and analysed	Feeling of being monitored	Reduced acceptance	Excessive personalization can create perceptions of surveillance and intrusion [21].
Algorithmic-inference risk	AI predicts preferences or behaviour beyond explicit information	Passenger cannot determine what is inferred	Distrust or demand for explanation	Consumers may have limited knowledge of how AI combines data and predicts behaviour [21].
Third-party risk	External organizations process passenger data	Reduced control over data access	Lower confidence	Aviation outsourcing can involve passport, travel-history, payment and biometric information [7].
Control risk	Passenger has limited ability to modify or withdraw data use	Reduced autonomy	Privacy-protective behaviour	Meaningful control and accessible privacy mechanisms are identified as important for reducing vulnerability [21].
Transparency risk	Passenger does not understand what happens to the data	Information asymmetry	Suspicion and uncertainty	Aviation evidence identifies broad, unclear and ambiguous consent as a major challenge [7].
Profiling risk	Multiple datasets generate detailed passenger profiles	Feeling of being excessively analysed	Resistance	Excessive personalization may generate psychological contract violation and purchase resistance [21].

As presented in the Table 17, the perceived privacy risk surpasses traditional concerns about data breach and also includes such psychological aspects as surveillance, algorithmic inference, limited control and the uncertainty of sharing data with other parties [7,21].

The fact that information can be further processed without explicit permission is a big issue because passengers might not be aware or consent to this, only to allow collection. It really complicates the matter if data is being shared among airlines airports government systems and technology companies from external sources [7].

So, perceived privacy risk needs to be regarded as not just one dimension, but also as a combination of vulnerability, uncertainty and loss of control, rather than only a cybersecurity or technical issue [1,7,21].

The Personalization–Privacy Trade-Off: Privacy Concerns Versus Perceived Benefits

The personalization, privacy paradox appears when the passenger simultaneously likes and dislikes one thing. He or she likes personalized services but is concerned about Really providing them takes some data handling practices. Personalization helps customers make the most of search efforts; it also raises the degree of recommendation relevance and convenience, besides being continuous across the different service encounters. The problem is data-intensive processes that can be interpreted by people as an act of surveillance, manipulation of privacy, sharing without authorization, or even losing one's autonomy [13,21].

Per the systematic review of articles, the interpretation of a privacy calculation is supported, where consumers do a comparison of the benefits that include relevance convenience discounts, saving search time and service continuity, with the costs which are perceived as surveillance misuse unauthorized sharing, discrimination and loss of control [21]. As illustrated in Table 18, the favorable aspect of airline personalization is balanced with the privacy issue that the passenger has to face. Because of this, the passenger's acceptance of personalization depends on the degree of weighing perceived benefit with those risks [7,13,21].

It has been observed that passengers are not necessarily against data collection in general. But resistance is more likely when data collection is seen as disproportional, a surprise, hidden or otherwise unrelated to the provision or enhancement of the immediate service [21].

One major insight revealed is that privacy fears do not always lead to withdrawal or disengagement from the service. Based on the systematic review, Teepapal *et al.* discovered that while personalization was a driver for the increase in privacy concern, privacy concern could never be a determining factor in the reduction of passenger engagement because the model did not show it to be statistically significant. So passengers might recognize and accept the privacy risks and still choose to use the AI-powered service because of the perceived usefulness or trust which still remain quite enough [21].

In Table 19, personalization influence on passengers' acceptance depends on factors like transparency proportionality a sense of control helpfulness trust, novelty and responsible data governance, instead of merely the amount of personalize provided [1,7,21].

Table 18: Personalization Benefits Versus Privacy Costs in Airline Services

Personalization benefit	Corresponding privacy cost	Passenger evaluation	Potential outcome	Evidence
Relevant flight recommendations	Collection and analysis of travel history	Whether the recommendation appears useful and expected	Acceptance or resistance	AI personalization improves relevance and perceived value but may generate resistance when collection is invasive [21].
Personalized ancillary offers	Commercial profiling	Whether targeting appears fair and appropriate	Engagement or resistance	Privacy, transparency and responsible data use influence responses to AI personalization [21].
Faster digital services	Greater passenger-data collection	Whether data collection appears proportionate	Conditional acceptance	Sustainable personalization requires data proportionality and responsible use [21].
Location-based assistance	Location tracking	Whether tracking is understood and controllable	Convenience or surveillance perception	Location and digital activity are used for personalization, while extensive collection can create privacy discomfort [21].
Customized loyalty rewards	Long-term behavioural profiling	Whether the exchange is perceived as fair	Engagement when trust is high	Trust, perceived value and privacy repeatedly emerge as central constructs in AI-personalization research [21].
Biometric convenience	Collection of sensitive biometric identifiers	Whether security and purpose are sufficiently clear	Convenience or heightened vulnerability	Aviation evidence identifies biometric information as sensitive passenger data [7].
Predictive disruption assistance	Continuous passenger analytics	Whether prediction appears helpful or intrusive	Acceptance or resistance	Predictive personalization can increase convenience but may also strengthen perceptions of surveillance [21].
Personalized communication	Cross-channel behavioural tracking	Whether passengers can control communications	Engagement or avoidance	Transparency and perceived control can reduce negative privacy effects [21].

Table 19: Conditions Determining Whether AI Personalization Produces Value or Privacy Resistance

Condition	Lower privacy resistance	Higher privacy resistance	Evidence
Transparency	Clear explanation of data collection and use	Opaque or ambiguous information	Transparency and privacy assurance support trust and purchase intention [21].
Data proportionality	Data clearly related to the service	Excessive or unrelated collection	Sustainable personalization requires proportionality and responsible data use [21].
Passenger control	Accessible privacy and preference controls	Limited ability to modify or withdraw data use	Meaningful control can reduce perceived vulnerability [21].
Perceived usefulness	Clear convenience and relevance	Weak benefits compared with perceived risks	Privacy calculus involves comparison of perceived benefits and privacy costs [21].
Trust	Airline and AI system perceived as competent and responsible	Doubts about motives and data practices	Trust is positioned as the central mechanism reconciling personalization and privacy [21].
Expectedness	Personalization matches passenger expectations	Personalization appears unexpectedly precise	Unexpected or disproportionate personalization can create psychological contract violation [21].
Third-party involvement	External processing is disclosed	Passenger is unaware of external processing	Third-party processing is a major aviation privacy challenge [7].
Responsible governance	Data minimization, security, privacy-by-design and accountability	Weak safeguards and unclear responsibility	Aviation privacy evidence supports minimization, anonymization, encryption and purpose limitation [7].

In general, the studies show that one major consequence of an AI system is a loss of privacy through an excessive amount of data collection, not just a loss of anonymity. It can happen when the passengers, for example, data gathering, machine learning algorithms or any follow-up data exploitation seems beyond what's legitimately expected [1,7,21]. That's why, privacy can actually be a part of the value that customers get from a company. The systematic review suggests that to prevent excessive data collection, obtain informed consent in a very transparent way, make sure there's clarity in the reasoning behind recommendations and that all controls and safeguards are easily available and understandable by the customers and against harmful or biased results will lead to a better situation for the customers where privacy becomes a part of their customer value rather than just compliance cost [21].

From Personalization to Passenger Loyalty: The Mediating and Moderating Mechanisms

The link between the use of AI for customized services and customer loyalty is not that one leads directly to the other. The personalization of services can result in an increase in perceived usefulness, convenience and relevance, but these benefits need to be first transformed into psychological favorable evaluations like satisfaction, value perceived and trust before they can be effective. Meanwhile, privacy issues can cause the transformation of these positive evaluations into repeat purchases and loyalty to be reduced [2,33]. The result of the systematic review, that means, is the suggestion that AI personalization should not be seen only as a one-dimensional technology-based feature but rather as interdependence between processes like usefulness and relevance generating value, trust making a way for acceptance, engagement linking behavioral intention with evaluation; and privacy issues being one of the factors that limit loyalty outcomes [21]. Airline sector gives the best empirical evidence to that effect.

Per Bilal *et al.* results, using data of a relatively small sample of 128 passengers of PIA, that there was a strong positive correlation between AI perceived usefulness and customer satisfaction ($r = 0.610$, $p < 0.001$). Also, digital trust was found to partially mediate the connection between the level of AI personalization and the intention for repeat purchase whereas privacy concerns were revealed as something important which weakly moderated the effect of AI benefits on customer loyalty ($= -0.717$, $p = 0.033$) [5]. These results not only confirm a theory but also provide a strong foundation for the conceptualisation of loyal customers because of an interplay of various mechanisms instead of merely the presence of customized/ personal service as a product element that is provided [5].

AI Personalization and Satisfaction as Antecedents of Loyalty

Customer happiness is one of the key ways AI-enabled personalization contributes to passenger loyalty

Since airline trips involve so many choices and conversations, this type of support provided to passengers from their booking to seat selection, being informed about disruptions and customer-service interactions, is very much the reduction in friction that passengers experience at all stages of their journey. In a study, passenger satisfaction is a good indicator of perceived usefulness of AI ($r = 0.610$, $p < 0.001$).

Air personalization with AI can help create passenger satisfaction by various ways, which can be both functional and experiential mechanisms and so satisfaction only turns into loyalty when the experience it delivers becomes reliable and of high worth repeatedly [5,21,26].

The evidence therefore suggests that satisfaction is an important intermediate outcome, rather than the final consequence of AI personalization. Personalization creates opportunities for satisfaction by improving usefulness and reducing friction, but sustained loyalty requires passengers to repeatedly perceive value and reliability in the relationship [5, 21,26] (Table 20).

Table 20: AI Personalization, Passenger Satisfaction and Loyalty Formation

AI personalization mechanism	Immediate passenger benefit	Satisfaction effect	Potential loyalty outcome	Evidence
Personalized flight recommendations	Greater relevance and reduced search effort	Passenger perceives decision-making as easier	Greater likelihood of returning	AI personalization can reduce information overload and improve relevance [21].
Personalized seat/service recommendations	Better alignment with passenger preferences	Improved perceived service fit	Increased satisfaction and relationship value	PIA study identifies seat selection and other digital functions as useful AI-enabled services [5].
Automated disruption alerts	Timely information during irregular operations	Reduced uncertainty and inconvenience	Greater willingness to continue relationship	PIA study proposes proactive, personalized disruption communication as a trust-building mechanism [5].
Digital service recovery	Faster alternative arrangements	Improved recovery experience	Retention despite operational failures	PIA evidence suggests digital convenience can partly compensate for poor physical operations [5].
Personalized loyalty offers	Relevant rewards and promotions	Increased perceived value	Repeat purchase and relationship continuity	AI personalization can strengthen engagement and purchase-related outcomes when perceived as useful and trustworthy [21].
Conversational AI/customer assistance	Continuous and responsive interaction	Greater convenience and responsiveness	Continued use and engagement	AI conversational agents can increase interactivity and maintain continuous customer dialogue [21].
Overall digital usefulness	Reduced effort and improved efficiency	Higher satisfaction	Stronger loyalty potential	PIA: AI perceived usefulness and satisfaction, $r = 0.610$, $p < 0.001$ [5].

Table 21: Mediating and Moderating Mechanisms Linking AI Personalization with Passenger Loyalty

Mechanism	Role in the personalization–loyalty relationship	Expected effect	Empirical/theoretical evidence
Perceived value	Converts technical personalization into personally meaningful benefits	Positive	Personalization creates value when passengers perceive relevance, usefulness and reduced decision effort [21].
Customer satisfaction	Evaluates the quality of the resulting passenger experience	Positive	PIA: AI perceived usefulness significantly correlated with satisfaction, $r = 0.610$, $p < 0.001$ [5].
Digital trust	Provides confidence in the AI system and airline	Positive mediation	PIA: digital trust partially mediated AI personalization and repeat purchase intention [5].
Privacy risk	Weakens the conversion of AI benefits into loyalty	Negative moderation	PIA: privacy concerns negatively moderated AI benefits $\rightarrow$ loyalty, $\beta = -0.717$, $p = 0.033$ [5].
Perceived usefulness	Determines whether personalization is interpreted as practically valuable	Positive	TAM-based explanation and PIA evidence support usefulness as a key determinant of satisfaction [5].
Engagement	Connects favourable evaluations with continued interaction	Positive pathway	Review evidence indicates personalization may influence engagement through usefulness and trust rather than through a simple direct effect [21].
Perceived intrusiveness	Converts personalization from value-producing to risk-producing	Negative	Excessive personalization can create surveillance, manipulation and loss-of-control perceptions [21].
Transparency and control	Reduces uncertainty and privacy vulnerability	Positive enabling condition	Transparent consent, explainability and accessible controls are identified as mechanisms supporting sustainable personalization [21].

The Roles of Perceived Value, Trust and Privacy Risk in Loyalty Formation

Perceived value, the feeling of trust and the perception of privacy risk really help as mechanisms through which AI personalization affects passenger loyalty. It is, in short, value that makes passengers like personalization, trust that makes them take the risk and perceived privacy risk that might turn off a positive response to personalization. The review highlights in reality perceived value is made up of two mechanisms namely perceived usefulness and perceived relevance, whereas risk is caused by five different mechanisms, namely privacy concern, perceived intrusiveness, loss of control, etc. In consumer relationships, trust is something that comes in between these two sets to allow a customer to find a compromise and balance the two sides [21]. The data taken from a single airline company supports this explanation. Bilal *et al.* demonstrated digital trust as a partial mediator of the relationship between AI personalization and repeat customer intention. The influence of AI personalization was smaller when trust was added to the model, which implies that only personalization is a factor in repeat-purchase decision-making [5]. On the contrary, privacy concerns create another mechanism altogether. In the same Privacy Impact Assessment (PIA) study, privacy concerns were a significant moderator of the relationship of AI benefits with customer loyalty ($= -0.717$, $p = 0.033$) [5]. This is worth mentioning that it was a moderating effect rather than a case where privacy concern independently leading to disloyalty was demonstrated, which is quite different from the first. From this point, a passenger may continue to use an airline even in the face of his or her concerns with it, as long as the perceived usefulness and the level of trust remain high.

As shown in Table 21, the concepts of perceived value, trust and privacy risk are factors, which lead to passenger loyalty via different yet interacting routes from AI personalization [5,21].

AI Personalization Perceived Value/Usefulness Satisfaction and Trust Engagement and Repurchase/ Loyalty while at the same time:

Privacy Risk/Intrusiveness Undermines the positive chain effect reduced potential for loyalty.

This conceptual model corroborates the findings of a systematic review that the impact of personalization through AI technology has conditional rather than uniformly positive effects and that the incorporation of trust and privacy as elements of consumer behavior explanations is necessary [21].

The PIA research presents mainly strong empirical evidence for this as all three relationships were tested in a single airline scenario: the perception of product usefulness as a source of satisfaction, the digital trust being the mediator of repeat-purchase intention with partial effect and the privacy concern having, as the negative moderating element, the effect of loyalty [5]. Yet, those parameter estimates should only be seen as findings from PIA airline passengers in the study of about 128 individuals and cannot be taken as worldwide airline industry standards.

Moderating Effects of Digital Literacy, Age, Culture, Travel Frequency and AI Familiarity

Effect of ai personalization at one customer loyalty level is highly unlikely to affect another customer in the same way. Different personality features and situations can alter customers to think how beneficial they find the service is, how they comprehend recommendations made by machines, privacy issues they perceive and trusting relationships they develop. The main focus of the review is to highlight that in subsequent studies the researches should place more emphasis on digital literacy age culture, institutional trust, privacy norms and how familiar the subjects are with an ai. Digital literacy could be the determining factor in whether passengers comprehend the ai service offered and realize the consequences of the disclosure of personal data. Passengers quite knowledgeable about digital systems might see the use of ai services as effortless and may be better off deciphering the personalization mechanisms. On the other flank, a higher level of understanding may, for some customers, cause increased awareness of the risk of being monitored and profiled. Because of this, digital literateness can't always be taken for granted to alleviate worries about privacy. Age could be an influencing factor, with passengers, but the dependence should not be considered just as an older-vs-younger one. Many features like acquaintance with the technology, perceived use, assurance that digital services is safe as well as expectation for privacy may be what results a wide variety of responses to personalized advertising across the age groups [21]. We may say institutional trust and culture affect airline services mainly because flying connects various places and is a worldwide business. That means, customers may deal with an airline that is registered in a country with varying privacy regulations, norms and the image of institutions. So, on top of Really it is an issue that is quite culture specific, the systematic review points out disclosure, trust in an institution and how the corporate responsibility is expected [21]. The frequency with which a person is traveling might also contribute to the extent of the passenger's benefit he or she is receiving from personalization services. Frequent travelers who interact with an airline's digital services many times are most likely to enjoy the advantages of stored preferences, loyalty points and personal assistance of a kind. Meanwhile, more familiar a customer is with a particular service, the more he or she may expect that the service is accurate and dependable. An unpleasant effect on a regular customer may be brought about by, for example, mistakes or personalization that the customer could have never imagined.

Familiarity with ai can mean different responses. On one hand, getting to know about an automation will surely be the factor to increase the level of comfort while using the services without the risk of the customers' expectations of their human interaction being disturbed. On the contrary, an experience can easily sensitize a more advanced users about being overwhelmed with too much information or personalization, about data collection or algorithmic manipulation. The review that means is suggesting studying the factors of personalization intensity and consumer familiarity as the interplay rather than taking technological knowledge to be the only reason for acceptance [21].

From Table 22, we can see that passenger characteristics and situations surrounding it can change how the relationships between ai personalization, perceived usefulness trust privacy risk and loyalty are interpreted.

A major point here is the moderating viewpoint which calls into question the notion that all the passengers will have the same kind of loyalty reaction to a personalized AI feature. It implies that airlines' decisions should not only rely on the AI strategy but they should also ask themselves these questions:

- Who is the passenger
- What pieces of information are used for personalization [21]
- Why has the choice been made to deliver a personally tailored feature
- What is it that is being done with travel? (Cite reference 21)

Table 22: Potential Moderating Factors in AI Personalization and Passenger Loyalty

Moderator	Possible influence on personalization	Possible influence on privacy perception	Expected effect on loyalty pathway	Evidence
Digital literacy	May increase ability to use AI-enabled services	May increase understanding of both benefits and risks	Can strengthen or weaken acceptance depending on interpretation	Review identifies digital literacy as an important area for further research [21].
Age	Differences in technology familiarity may affect usefulness perceptions	Privacy expectations and confidence may differ	May produce heterogeneous loyalty responses	Review recommends attention to older and digitally less-experienced users [21].
Culture	Influences expectations of personalized service	Privacy norms and disclosure practices differ	Can change trust and loyalty mechanisms	Cross-cultural differences in institutional trust and privacy norms are highlighted in the review [21].
Travel frequency	Frequent passengers can benefit from stored preferences and continuity	Repeated data collection may increase sensitivity to profiling	May strengthen value but raise expectations	Airline personalization becomes increasingly relevant across repeated customer interactions [5,21].
AI familiarity	Familiar users may perceive greater ease and usefulness	Familiarity may either reduce uncertainty or increase awareness of risks	Can strengthen or weaken trust	Review identifies AI familiarity and personalization intensity as relevant contextual factors [21].
Privacy sensitivity	May reduce willingness to accept highly personalized services	Increases perceived vulnerability	Weakens personalization → loyalty pathway	PIA evidence demonstrates significant negative moderation by privacy concerns, $\beta = -0.717$, $p = 0.033$ [5].
Institutional trust	Increases willingness to rely on airline systems	Reduces uncertainty about organizational motives	Strengthens trust-mediated loyalty	PIA study emphasizes institutional confidence as a prerequisite for effective digital loyalty strategies [5].
Service context	High-involvement or disruption situations may increase usefulness of AI	Sensitive contexts may increase privacy concerns	Changes the balance between value and risk	Review finds personalization effects vary across industries, touchpoints and levels of involvement [21].

PIA's study however sheds great light on this issue of context. Results show that even with operational flaws, passengers were still willing to accept digital services and the loyalty advantage of such AI features altogether was actually not compromised until privacy became more of a problem. The study so points out that to earn digital trust, first one needs to create a series of stable and low risk digital services and then airlines would not hesitate to go to the more invasive style of personalization [5].

A Critical Synthesis of the Existing Literature

The academic works in AI-enabled personalization, customer's perceived value, algorithmic trust aspects, concerns about privacy risk and passenger loyalty have all shown that artificial intelligence and its impact on customer behaviour is not just a one-way street. AI-based product personalisation might mean increased relevance, enhanced user friendliness, perceived benefit and improved service quality. But these positive attributes do not necessarily guarantee a higher-level customer engagement, repeat purchase or loyalty. Rather results of customer interactions will be governed by mechanisms like customers' perceived value of the product or service, their level of satisfaction and their level of trust in the company, while their level of privacy concerns (i.e. fear of personal information getting leaked and used without their consent) or feeling that they being too much followed (i.e. being monitored too much) would reduce these effects [21,32,33].

These results seem to be supported by findings in the airline context too. In an airline-based study, Bilal *et al.* reported that a customer's perception that the AI used is handy and is of benefit to them was highly correlated with them being satisfied with the service ($r = 0.610$, $p < 0.001$), a customer's level of trusting the company was the partial reason why customers who felt the AI was personalizing their experience were more likely to buy from the same company again and In reality privacy concerns will have an adverse effect on the customer's level of loyalty is highlighted in the negative value of $= -0.717$ and $p = 0.033$ of these two factors [5].

Converging Findings

Where the Literature Demonstrates Consistency: Different studies showed that there has generally been an extremely consistent agreement in the whole literature. One way AI personalizes a consumer's experience can lead the evaluation in the positive direction is by making the interaction relevant, helpful and efficient [33]. AI can cut off the excess flood of information, streamline the decision-making and tailor recommendations by customer's taste and behaviour data. Still, the literature overall seems to be in line as to the fact personalization alone is not a sure way to generate engagement or loyalty of the customers. People and passengers rather evaluate whether the personalization

is worth their trouble believable correct, accurate and trustworthy. Teepapal *et al.* as an instance, found that AI personalization did not contribute greatly on engagement, while perceived usefulness and trust led to engagement [33].

Besides that, trust is an important factor that is always a central mechanism. Before a consumer is willing to accept personalized recommendations or to provide additional information, it is a requirement of the consumer's belief in the competence, reliability and accountability of AI systems and the companies that put them into action [32]. Trust thereby links technological abilities with behavioural outcomes instead of just functioning as an independent attitudinal variable [32].

Next, privacy worries are regularly brought forward through the whole literature as the greatest resistance. For AI personalization privacy transparency, accountability and responsible data management have been recognized by the literature as core ethical concerns [21]. Overly personalization often can give rise to feelings of having being spied on, pushed to do something and a sense of having lost control. In general, in particular if the data collection seems to be in excess or comes as a surprise, these feelings can be produced [21, 33]. A very strong agreement among the studies has been the one that the relationship of AI personalization and consumer behaviour is dependent on values, satisfaction and trust as mediators, while the constraint is the privacy factor [5, 32,33]. As Table 23 reveals.

Overall, the convergence suggests that the most defensible interpretation is not that AI personalization causes loyalty, but that personalization creates conditions under which loyalty may develop. The conversion of technological capability into customer loyalty depends on how passengers evaluate the resulting experience [33], [32], [5].

Contradictory Evidence and Boundary Conditions

In fact, even though the results of all studies so far seem to be the same, there are still some very important contradictions in the literature and perhaps one of the most significant is whether personalization is directly linked to consumer behaviors. Some researchers have pointed out that an increase of AI personalization is related with higher consumer engagement, a stronger purchase intention and greater product satisfaction, while others argue that personalization is an indirect factor that works through other variables, e.g. perceived usefulness, trust [31,33]. In fact, the systematic review finds that this contradiction is what personalization is mainly concerned with: a product or service is more personalized then the users are more likely to find such personalization helpful, the users trust the product or service, etc. [they may] have a positive consumer attitude and behavior toward such product or service only after they believe personally that the product/personalization is helpful and trustworthy etc. [33]. A second contradiction relates to privacy. Privacy concern is normally regarded as a major obstacle, so there is a great assumption that a person will cease the use of AI-driven services because of privacy concern. Teepalap *et al.* on the contrary, demonstrated that the personalization has raised the concern of privacy but to a larger extent privacy concern did not lead to withdrawal. Because of this, they show that consumers are fully aware and still can trust and rely on personalization, which makes use of their private information so much that they do not care about privacy [21].

A third condition of the boundary is the intensity of the personalization. Greater personalization might not necessarily be better personalization. The system review presents the result that an increase in personalization might mean greater customer favorable behaviors only up to a point, beyond which it might start working as a factor for consumer's fear avoidance etc. and might decrease consumer satisfaction trust etc. [33] Last but not least, another boundary condition is institutional context. The PIA study is a good illustration. The paper states that technological development in the form of digital technology cannot be disentangled from the existing level of institutional trust. Based on the paper, if institutions are not seen as trustworthy at the background level, it may hinder even the most innovative AI personalization, no matter how beneficial the digital aspect is [5].

Table 23: Converging Findings in the AI Personalization–Privacy–Loyalty Literature

Consistent finding	Explanation	Implication for airline research	Evidence
AI personalization can increase relevance	Algorithms match recommendations with preferences and previous behaviour	Personalized flight, seat and ancillary recommendations can improve passenger experience	AI personalization improves relevance and perceived value [33].
Perceived usefulness is important	Technology creates value when passengers perceive practical benefits	Useful digital services can improve satisfaction	PIA: AI perceived usefulness → satisfaction, $r = 0.610$, $p < 0.001$ [5].
Personalization is not sufficient by itself	Behaviour depends on psychological evaluation	Airlines should not assume personalization automatically creates loyalty	Teepapal <i>et al.</i> found no significant direct personalization → engagement effect [33].
Trust is a central mechanism	Trust reduces uncertainty and supports reliance on AI	Digital trust can convert personalization into repeat-purchase intention	PIA found partial mediation through digital trust [5].
Privacy creates a countervailing effect	Data collection can generate surveillance and vulnerability perceptions	Privacy risk can weaken the loyalty benefit of personalization	PIA: privacy moderation $\beta = -0.717$, $p = 0.033$ [5].
Transparency and control matter	Consumers require understandable information and meaningful control	Privacy governance should be incorporated into customer-experience design	Review recommends transparent consent, privacy controls and explainability [21].

Table 24, gives a summary of the different perspectives on how these contradictory findings can be used to interpret personalization through the lenses of the AI effectiveness. It also demonstrates in reality AI personalization effectiveness is subject to a number of factors or conditions like trust, privacy concern sensitivity, intensity of personalization, transparency and the institutional context [5,21,33].

These contradictions may not reflect failures in the literature. The main message here is that AI personalization happens through various contingent mechanisms. For example, the kind of industry, service context, data sensitivity, consumer characteristics, company's reputation and measurement methods vary and these factors might actually change the relationships under study [21,33]. This idea is mainly significant for airline researchers as air travel has a high-involvement customer service component involving sensitive personal information, financial transactions and repeated interactions. Because of this, results based on low-involvement e-commerce contexts shouldn't be directly applied to airline passengers [33].

Underexplored Relationships, Methodological Limitations and Theoretical Gaps

In spite of in reality the field has seen an enormous expansion, a few very critical issues remain to be addressed. One among them is the splitting up of constructs. It is quite common in the literature that scholars investigate the individual dimensions, like personalization privacy trust, engagement or purchase intention, without testing their interrelationships within one comprehensive model [21]. This division limits one's understanding of the question of whether personalized features of the system affect the passenger independently or, to the contrary, these effects come through the mediators of perceived value, satisfaction and trust. Mention of another gap of limited direct empirical evidence specific to airlines will come after this paragraph. The lion's share of the literature cited here pertains to digital marketing, e-commerce and general consumer settings [21]. While the PIA study offers direct evidence on airlines, its sample size is very small consisting of only 128 passengers so it is quite clear that the passengers' data cannot be generalized to the whole global airline passenger population [5]. It is but clear from this study alone that airline passengers do form trust through these AI systems. Even so, there is still a great need for airline-wide validation. The third issue identified is that the literature almost exclusively depends on cross-sectional and self-reported measures. The limitation with this setup is that a single data collection point and self-administration cannot really trace trust and privacy-related changes over time as the passenger interacts with AI through multiple channels, experiences algorithmic mistakes or privacy breaches. As such, the review points out the use of longitudinal studies experiments qualitative methods and analysis using real passenger's choices and actions [21]. The fourth gap in the literature that the authors point out is that the level of conceptual clarification in trust is low. Passenger can, in different degrees and for different reasons of course, trust their airline, the brand, AI system recommendation platform or safeguards offered by an institution. When one assumes different types of trust to be one same factor, it can result in not being able to see what causes the passengers to have faith in the AI [32].

Table 24: Contradictory Findings and Boundary Conditions in Existing Literature

Issue	Positive evidence	Contradictory/qualifying evidence	Boundary condition	Evidence
Personalization → engagement	Personalization can increase usefulness and trust	Direct effect may be insignificant	Trust and perceived usefulness	Teepapal <i>et al.</i> reported no significant direct personalization → engagement effect [33].
Personalization → purchase	Relevance and usefulness can increase purchase intention	Tailoring alone does not guarantee purchase	Credibility and perceived relevance	Review identifies relevance, usefulness and trust as mechanisms influencing purchase intention [33].
Privacy concern → disengagement	Privacy can create resistance	Consumers may continue using services despite concerns	Perceived usefulness and trust	Privacy concern did not significantly reduce engagement in one reviewed study [21].
More personalization → better outcomes	Greater personalization can initially increase relevance	Excessive personalization can create threat and avoidance	Personalization intensity	Review reports an inverted-U relationship [33].
AI capability → loyalty	Digital usefulness can increase satisfaction	Technology alone cannot overcome institutional distrust	Institutional trust	PIA evidence identifies trust as a prerequisite for effective digital loyalty [5].
Privacy concern → loyalty	High privacy concern can weaken AI's loyalty effect	Privacy concern may not independently reduce loyalty	Moderating rather than direct effect	PIA found significant negative moderation but no significant direct privacy effect on loyalty [5].
Transparency → acceptance	Transparency can strengthen trust	Formal disclosure alone may be insufficient	Understandability and control	Review emphasizes contextual, understandable and actionable transparency [21].

The fifth problem identified through the study is that most airlines still do not take into account nonlinear relationships and personalization boundaries. The passengers are positively affected mainly by a moderate level of customisation and that the extreme level of personalisation makes them feel uneasy with the system, feel that their privacy is violated and they would try to avoid it entirely [33]. The airline researchers are that means advised not to take personalization for granted but rather they should check through experiments if a particular level of personalization is best and not that the higher it is the better the overall outcome will be. Passenger heterogeneity is not being given adequate consideration by the literature at present which is the sixth issue mentioned here. The different levels of digital literacy ages cultures, travel frequencies, familiarity with AI and institutional trust can alter the perception of the passenger with relation to the service they are getting [21]. The authors of this review explicitly demand so cross-cultural and longitudinal research that will reveal all these variations.

Based on Table 25, the main research gaps are integrated modeling, airline-specific empirical evidence, long-term study, conceptual clarity, nonlinear relationships and passenger characteristics differences [5,21].

Critical synthesis leads us to the conclusion of a more in-depth understanding of AI-enabled airlines' personalization at the concept level only. The studies available do not back the claim that personalization directly translates to loyalty. Rather, the evidence favors a sequential and conditional model where AI-based customization can offer both functional and hedonic value, satisfaction is affected by perceived usefulness and relevance, trust is the driver of acceptance and the maintenance of a relationship and privacy issues either limit or restrict how the benefits are transformed into loyalty [5,32,33]. PIA data act as a very good example of the mentioned theoretical model in practice: AI perceived usefulness influenced satisfaction, digital trust partially explained the relationship between personalization and repurchase intentions and privacy concerns played a negative moderating role in the relationship of personalization and loyalty [5]. In fact, the major idea of the theory behind the review is the need to view AI personalization not as a technology of inherent benefits or inherently intrusive ones but a technology whose outcomes depend on interplay of technological benefit, perceived value, algorithmic trust, privacy-related risks and individual passenger traits. This unified approach gives better grounds for explaining why the same AI capability might result in loyalty for one passenger or a situation but could be rejected by another [21].

Towards an Integrated Conceptual Framework for AI-Enabled Airline Services

The synthesis of the ideas in the previous sections suggests that thinking of passenger loyalty as merely a technological result of personalization by AI is wrong. What really happens is that a chain of value evaluation, trust building, privacy-risk assessment satisfaction engagement and relationship continuation result in the behaviour of AI-enabled personalization. Personalization through the literature can create relevance, convenience and service efficiency, but these gains depend on how the passenger evaluates the process of collecting, processing and usage of the underlying data. Mechanisms like perceived value and algorithmic trust are seen as positives by the literature, while privacy risk is recognized as a limiting factor that can prevent benefits from AI-generated solutions being translated successfully to loyalty. This explanation is quite fitting to airline service because people come in contact with AI many times during search reservation pricing, services at the airport, dealing with a flight delay, customer service, loyalty programme and communication after flight. The model because of this departs from a technology perspective to put the passenger's psychological evaluation at the heart of the service relationships enabled by AI.

Table 25: Major Research Gaps and Methodological Limitations

Research gap	Limitation in existing literature	Required research direction	Evidence
Fragmented constructs	Personalization, privacy, trust and loyalty are often examined separately	Test an integrated framework	Review explicitly identifies fragmented relationships among these constructs [21].
Limited airline-specific evidence	Much research originates outside aviation	Conduct multi-airline passenger studies	PIA study provides airline-specific evidence but uses N = 128 passengers [5].
Cross-sectional designs	Limited ability to establish temporal change	Use longitudinal and panel designs	Review calls for longitudinal research on changing privacy and trust perceptions [21].
Self-reported outcomes	Intentions may not equal actual repeat purchase	Combine surveys with behavioural data	Review recommends behavioural-data research [21].
Undifferentiated trust	Trust in airline, AI and recommendation may be conflated	Develop multidimensional trust models	Review identifies different targets of trust [32].
Limited nonlinear analysis	Personalization is often assumed to have linear benefits	Test threshold and inverted-U effects	Review identifies possible nonlinear personalization responses [33].
Limited cross-cultural research	Privacy and institutional trust may differ across cultures	Conduct comparative international studies	Review identifies cross-cultural differences as an important research need [21].
Limited passenger heterogeneity analysis	Average effects may conceal subgroup differences	Examine age, literacy, AI familiarity and travel frequency	Review recommends examining vulnerable and digitally diverse consumer groups [21].
Insufficient study of privacy-control mechanisms	Privacy is often treated as a risk rather than a design variable	Test dashboards, consent mechanisms and control features	Review recommends privacy controls, transparent consent and explainable recommendations [21].
Limited post-incident research	Little evidence on trust repair following privacy breaches or AI errors	Examine trust before and after incidents	Review recommends longitudinal research on trust repair following algorithmic errors and privacy breaches [32].

Linking Personalization, Perceived Value, Algorithmic Trust and Privacy Risk

Artificial intelligence-powered personalization starts with the airline's capability to turn passenger data into personalized service outputs at each touchpoint. These personalized outputs might take the form of suggestions offers proactive communications, personalized ways of handling customer complaints and other types of interactions. Yet, personalization itself is not the same as delivering value. Value is what passengers get if their perception is that the personalized experience was relevant helpful convenient, accurate and supportive of their immediate needs for travel. Per the research conducted, this is only the beginning. The technology's accuracy must be acknowledged and experienced subjectively by the passengers before its capabilities affect behavioral decisions. So the first part of the system would be:

AI-enabled personalization perceived value Absent of the passenger's actual perception, there is no value. Because of this, value can be defined as the evaluation - whether positive or negative by passengers - that results from the use of the service - which is referred to in the literature as both functional and experiential value. The functional value refers to cases where passengers feel the AI reduces their search effort, improves decision efficiency, or informs them timely. Experiential value, on the other, is created in customers who feel that interactions are smoother, more responsive and individually relevant. There may also be an economic component if personalized recommendations identify good fares, ancillary services, or alternatives. It should also be noted still that these dimensions are all dependent on the passenger's situation. For instance, a highly detailed recommendation could Yes be useful during some unexpected event, but it may also be redundant during a normal transaction. The second relationship in the model is about algorithmic trust. Despite personalization creating value quickly, passengers have to be assured that both the system and the company behind it will not make the mistakes of the past and that they will not behave irresponsibly. As a result, trust will result in perceived technological advantages that transform the desire to engage with the airline. The review points out transparency explainability fairness and organizational accountability are trust-forming factors that play important roles in AI-managed interactions. The third relationship is a privacy risk.

For one thing, personalization needs the passengers to reveal their preferences; however, the collection of such information may be perceived as a form of surveillance, a potential manipulation, a use of information that is not legally valid or an indication of a loss of control on the part of the passenger. That means, the data infrastructure that supports personalization will also create a decrease in the acceptance of personalization as a means of customer service. It is in that way that we can talk about a paradox between the benefits of personalization and the risks that it brings. So, the conceptual representation of our model of airline passengers' loyalty and satisfaction with AI technology will be like this:

AI Personalization Perceived Value Algorithmic Trust Satisfaction/Engagement Passenger Loyalty with Privacy Risk weakening/moderating the positive pathway and with transparency fairness explainability and control functioning as conditions that can reduce risk perception and enhance trust.

Table 26: Integrated Conceptual Relationships Among AI Personalization, Perceived Value, Algorithmic Trust, Privacy Risk and Passenger Loyalty

Framework component	Core mechanism	Expected passenger response	Role in the proposed framework	Evidence from reviewed sources
AI-enabled personalization	Uses passenger information and algorithmic prediction to tailor interactions and services	Greater relevance and individualized service	Primary technological antecedent	Gao <i>et al.</i> [8], Mariani <i>et al.</i> [9], Bilal <i>et al.</i> [5]
Perceived value	Passenger evaluates whether personalization improves usefulness, convenience, efficiency or experience	Positive evaluation of AI service	Positive mediating mechanism	Gao <i>et al.</i> [8], Teepapal <i>et al.</i> [33], Bilal <i>et al.</i> [5]
Algorithmic trust	Confidence that AI is accurate, reliable, transparent and responsibly governed	Reduced uncertainty and greater willingness to interact	Central psychological mechanism	Mariani <i>et al.</i> [9], Saura <i>et al.</i> (2024); Teepapal <i>et al.</i> [33]
Privacy risk	Perceived threat arising from data collection, profiling, surveillance or loss of control	Resistance, caution or reduced disclosure	Negative moderator/constraint	Aguirre <i>et al.</i> [10], Canhoto <i>et al.</i> [13], Cai <i>et al.</i>
Transparency and explainability	Clarifies why and how data and algorithms are used	Greater understanding and perceived legitimacy	Trust-enhancing condition	Mariani <i>et al.</i> [9], Saura <i>et al.</i> (2024)
Passenger control	Allows consumers to determine data-sharing preferences and exercise privacy choices	Greater autonomy and reduced vulnerability	Protective mechanism against privacy risk	Canhoto <i>et al.</i> [13], Bilal <i>et al.</i> [5]
Satisfaction and engagement	Positive evaluations translate into interaction and relationship responses	Continued interaction and stronger relationship	Intermediate behavioural mechanism	Teepapal <i>et al.</i> [33], Ribeiro <i>et al.</i> Gao <i>et al.</i> [8]
Passenger loyalty	Repeated favourable evaluations produce continuance, repeat purchase and advocacy	Retention and long-term relationship	Final outcome	Bilal <i>et al.</i> [5], Oliver [26]

According to Table 26, the structure presented here personalizes services as a beginning factor not as the sole determinant of customer loyalty. Its benefits are contingent on the passengers' perception of it as such and trust is the element that ultimately decides whether or not such perceived advantages could be transformed into sustained engagement. Privacy threats have the capacity to interfere at several stages and that means, they may not only lower the level of confidence but also increase resistance and limit willingness of disclosing information. This viewpoint aligns with what is described in the integrated system of the systematic review that explicitly states personalization is about generating relevance and usefulness, trust is about facilitating engagement and privacy issues are about being able to stop the series at any point. We have airline industry-specific evidence that is the most supportive here. Bilal *et al.* established a significant positive link between customers' perceived usefulness of AI and their satisfaction, they pointed out how digital trust can partially mediate and a significant negative moderation of the privacy concerns has been discovered through their analysis results ($\beta = -0.717$, $p = 0.033$). From these research findings, we may now draw the conclusion which justifies placing trust as a mediator variable and the privacy concerns as a moderator variable rather than about the three factors as separate predictors.

Proposed Mechanisms Explaining Passenger Loyalty Formation

This approach proposes how passenger loyalty to the airline results from a series of psychological and behavioural changes that happen on the passenger side. At the very beginning, AI personalized content impacts the passenger's assessment of the service. If the recommendation or the interaction is relevant and useful, a perception of increased value of the service arises. If the passenger views the AI system as reliable and the airline as responsible in handling information simultaneously, then it results in algorithmic trust. The trust this way reduces uncertainty and promotes continued interaction of the passenger, which may in turn support feelings of satisfaction, repeat purchases and loyalty. Value creation is so the first mechanism proposed by the study. AI personalization saves mental effort and so, reduces information-processing costs due to filtering of alternatives and providing recommendations in line with the passengers' preferences. This can be quite helpful in airline booking scenarios where the customer is supposed to go through an extremely long list to choose fares schedules baggage allowance seats add-on services/products and different travel modes (direct vs. multi-stop etc). As the existing studies, personalization adds value to the customers' satisfaction if it really supports their goal rather than merely delivering a lot of automated interaction. The second proposed mechanism relates to the formation of a trust. The passenger first has to interpret the outputs of the AI system to be reliable and the airline to be able and responsible enough so that further interaction can be justified. The trust of the consumer could grow through accurate recommendations and good service recovery, then again, it could be broken very fast in cases of unexpected data inferences, discriminatory outcomes, or privacy incidents. The systematic review has pointed out four distinct types of trust: trust in the firm, trust in the AI system, trust in the recommendation and trust in the regulatory environment.

Lastly, the third mechanism relates to relationship continuation and engagement between the customer and the firm through continued engagement. It is very important to emphasize here that just merely getting an AI personalized service by the passenger does not necessarily engage them or even keep them in the loop of the customer airline relation for a long time (relationship continuation) as a consequence. Teepapal *et al.* for example, did not find a significant effect of AI personalization on customer engagement, whereas trust and perceived usefulness were both strong positive predictors of customer engagement. Meaning customers have first to realize the value of personalized service and its trustworthiness to respond relation-wise. The last proposed mechanism, as the researcher, is loyalty development. Engagement can evolve into continuous use, repeat purchase, customer advocacy, etc. that result in deeper customer, airline relationships. It's also important to note that, while loyalty can be equated with short-term commitment, loyalty in a longer-term perspective must be separated from immediate customer actions or reactions. A very aggressive personalization strategy may really bring in more clicks, sales and the like, but on the downside, it can bring lower customer autonomy, weakening customer trust. That's why, the researchers call it very important to look at loyalty satisfaction repeat purchase, customer complaints, customer avoidance behavior and also willingness to share new information as outcome indicators.

According to Table 27, formation of loyalty is a sequential rather than direct process entirely and it should be perceived through its stages. Technological personalization is introduced as a driver, but loyalty is the outcome of passenger's own perception of the value and trust provided. Privacy risk can manifest itself in several stages, not just only at the moment of initial data disclosure. PIA results offer a substantial empirical grounding for this sequential mechanism. If AI personalization is the independent variable, digital trust is the mediating variable in the partial relationship with the dependent variable repeat-purchase intention, per the research conducted by the authors. Then again, privacy concerns were shown to negatively moderate AI benefits and loyalty. Based on these results, the researchers argue that solely functional digital utility is unable to make up for trust deficits in the institutional environment, which is another way of saying that privacy issues, rather than being a passive factor, actively limit the

loyalty benefits of AI. The model further develops a notion of calibrated-trust. This means that it is not a good idea, for instance, to get people (passengers in this case) to believe blindly in every single AI decision. Overtrust or even excessive trust may itself be harmful because it may make people depend on persuasive or human-like AI beyond its real capabilities. Because of this, a trust system which is just the right amount of trust for the demonstrated system's accuracy, accountability and ethical safeguards should be the goal of sustainable airline personalization.

Research Propositions and Directions for Future Empirical Testing

Prior to presenting the empirical propositions we have based our setup on, we have combined our model with the findings from the previous sections and highlighted areas of consistency and those of discrepancy. These statements are based on the results and discussions of the paper and are not to be considered as already-validated theories, which can be used as the basis for further empirical investigation. The first proposition concerns AI-enabled personalization and the perceived value.

Personalization through AI 1. The level to which passengers feel that their needs are satisfied by the airline services would increase with an enhancement caused by AI personalization mostly about how relevant, convenient and efficient their personal interactions can become as well as the degree of service usefulness to them. A strong case is made that personalization serves as information filter and lowers the effort cost of searching by enhancing relevance of service interaction. This proposition also points out that personalization might have a positive effect on passenger perceived value which would, of course, have its limits and would probably not be linear on personalization levels beyond a certain range because excessive personalization will probably backfire, that is, it is probably going to cause more harm than perceived value if it goes past passenger comfort level. Predicted value and the algorithmic trust

In case of high degree of passenger satisfaction with their AI-enhanced experience, that could bring an increase in the number of airline passengers who trust the use of such technologies for customer service purposes. The logical argumentation behind this statement comes from Really whenever the passengers receive the help (which is in line to their needs and expectations), they are also providing evidence that the system performing the task has competenced and can be counted on. In addition, if a passenger gets multiple times the correct recommendations or assistance from the algorithm, this would make passenger very much confident with it. Same thing, the PIA survey defines digital trust as being created gradually with positive digital experiences. Passenger loyalty and algorithmic trust the algorithmic trust will result in higher levels of passengers' satisfaction, passengers' engagement and passengers' willingness to repurchase the airline's products and That's why a stronger relationship with the passenger.

Arguably the trust as identified from the PIA study is partially responsible for explaining the link between the use of artificial intelligence for personalization and customer retention or loyalty, respectively. Yet, it helps to mention Truth is other aspects of trust could also have played a role. Privacy risk as a negative moderator:

Table 27: Proposed Mechanisms Through Which AI Personalization May Generate Passenger Loyalty

Stage	Mechanism	Passenger psychological process	Expected outcome	Potential disruption	Supporting evidence
1	Data-enabled personalization	Passenger receives individualized information or service	Greater perceived relevance	Excessive or irrelevant personalization	Gao <i>et al.</i> [8], Canhoto <i>et al.</i> [13]
2	Perceived value formation	Passenger evaluates usefulness, convenience and efficiency	Positive service evaluation	Low relevance or poor accuracy	Gao <i>et al.</i> [8], Teepapal <i>et al.</i> [33]
3	Trust formation	Passenger evaluates competence, reliability, transparency and fairness	Greater confidence in AI and airline	Opaque algorithms or irresponsible data use	Mariani <i>et al.</i> [9], Saura <i>et al.</i> (2024)
4	Engagement	Passenger interacts more actively with personalized airline services	Continued interaction	Privacy concern, distrust or perceived manipulation	Teepapal <i>et al.</i> [33], Ribeiro <i>et al.</i>
5	Satisfaction	Passenger evaluates accumulated service experience	Positive relationship evaluation	Repeated service failures or poor AI performance	Bilal <i>et al.</i> [5]
6	Repeat purchase	Passenger develops intention to continue using the airline	Continuance/repeat purchase	Privacy concerns and reduced trust	Bilal <i>et al.</i> [5]
7	Loyalty	Repeated positive evaluations develop into relationship commitment	Retention, advocacy and customer lifetime value	Privacy breach, manipulation or trust failure	Bilal <i>et al.</i> [5], Oliver [26]
Cross-cutting constraint	Privacy risk	Passenger evaluates potential costs of disclosure	Can reduce acceptance and disclosure	Surveillance, loss of control, excessive data collection	Aguirre <i>et al.</i> [10], Cai <i>et al.</i> Canhoto <i>et al.</i> [13]

Proposition 4

The passenger's perception of privacy risk will act as a negative moderator which will lead to a reduction in the effect of AI-enabled personalization on the willingness of a passenger to travel again with an airline in the future. So for example, the positive impact caused by personalization will decrease progressively alongside the rising level of privacy risk. The concept of the personalization-privacy paradox being so embedded in the overall airline system could not have been more clearly reflected in proposition P4. The PIA survey results have shown an important negative moderation effect that was statistically significant ($= -0.717$, $p = 0.033$) and was in line with our proposition P4. Proposition 5: P5: if the airline is able to manage the privacy risks in conjunction to the personalization activities, there could be a positive effect of AI-enabled personalization on passenger loyalty even amidst the presence of high privacy risk.

In the scenario of a highly negative personalization-privacy paradox (i.e. P4 is very strong), managing privacy could be an excellent way to not only restore but also strengthen the relationship between personalization and passenger loyalty.

Proposition 5

Trust as a mediator P5. The relationship between AI-powered personalization and passenger loyalty is mediated by the formation of trust in algorithms.

Personalization, the proposition argues, isn't always what it takes to get the customer excited or make them loyal. Instead, it has to be something else the passenger is thinking, something about their experience being valuable, reliable and trustworthy.

Proposition 6

Sequential mediation P6. Personalization through AI affects passenger loyalty by a sequence that involves perceived value, algorithmic trust, satisfaction and/or engagement.

This proposition goes beyond existing literature as it integrates mechanisms that have been separately investigated and is consistent with findings reported in the literature that a series of sequential mediators, e.g. perceived product relevance, trust and customer engagement should be involved in the link between personalization and repurchase.

Proposition 7

Transparency and passenger control P7. Transparency, the ability to provide an explanation and having one's privacy respected will build up algorithmic trust and reduce the negative impact of privacy concern on the personalization to loyalty journey.

Based on the theory, customers are more willing to disclose their data when a company clearly states its data practices and allows the customer to manage their privacy settings.

Proposition 8

Nonlinear personalization effect P8. Looks like the level of personalization and passenger loyalty is not a straightforward proportional relationship. With moderate personalized offers a customer might be happier and more loyal than with too intrusive ones. The reason that the proposition draws the attention of researchers is that the existing studies point to a U-inverting pattern: at the beginning, more personalization could boost utility but afterward it could be perceived as a threat and result in a decision to avoid it.

Table 28: Proposed Hypotheses/Propositions and Empirical Testing Strategy

Proposition	Proposed relationship	Suggested empirical test	Key variables	Evidence basis
P1	Personalization → perceived value	Regression/SEM	Personalization; perceived value	Gao <i>et al.</i> [8], Teepapal <i>et al.</i> [33]
P2	Perceived value → algorithmic trust	SEM/path analysis	Perceived value; algorithmic trust	Ribeiro <i>et al.</i> Bilal <i>et al.</i> [5]
P3	Algorithmic trust → loyalty	Regression/SEM	Algorithmic trust; satisfaction; loyalty	Teepapal <i>et al.</i> [33], Bilal <i>et al.</i> [5]
P4	Privacy risk negatively moderates personalization → loyalty	Moderated regression	Personalization × privacy risk	Bilal <i>et al.</i> [5]
P5	Trust mediates personalization → loyalty	Mediation/bootstrapping	Personalization; trust; loyalty	Teepapal <i>et al.</i> [33], Bilal <i>et al.</i> [5]
P6	Personalization → value → trust → engagement/loyalty	Sequential mediation	Value; trust; engagement; loyalty	Systematic review synthesis
P7	Transparency/control strengthen trust and reduce privacy effects	Moderated mediation	Transparency; control; privacy; trust	Canhoto <i>et al.</i> [13], Mariani <i>et al.</i> [9]
P8	Personalization intensity → loyalty is nonlinear	Polynomial regression/experimental design	Personalization intensity; privacy; loyalty	Sun <i>et al.</i> [30], Hardcastle <i>et al.</i> [31]

As Table 28, demonstrates, the structure we suggest can be tested in a practical way through such means as mediation moderation moderated-mediation and nonlinear modeling instead of just focusing our study on direct-effect regression. This is a crucial point because the available research is pretty clear that, if the psychological mechanisms are not taken into consideration, the association of personalization and consumer behavior can seem rather weak or even inconsistent. Future studies in this field will do well to go beyond self-reported behavior whenever there is a chance. Behavioral markers like actual booking behaviour, repeat-flight records, loyalty-programme interaction, opt-in/opt-out choices, acceptance of recommendations and sharing of personal data may provide more robust evidence at the behavioral level. The systematic review more exactly asks for a larger amount of real behavioral data and longitudinal studies. Another important line of inquiry will be cross-cultural airline studies. The PIA study was conducted for a developing country where privacy concerns had a significant moderating effect on the AI, loyalty relationship. Though, the researchers warn against an automatic generalization of the finding to a different market. Comparative studies across different airline markets might help establish whether trust in systems and regulators (institutions), expected regulatory behavior (expectations of regulators). A different cultural orientation and level of digital exposure could influence how strong the proposed relationships will really turn out to be. The use of large-scale or generative AI and the possibility of using the AI to make decisions on a human's behalf has opened the door to a new research area. In the future, airline systems could stop recommending services and instead actively find compare bargain and maybe even pay for passengers on their behalf. This would raise a whole new series of issues related to transparency of AI systems, human control and accountability (AI accountability), the creator of the algorithms ("author of the algorithm"), inappropriate persuasive tactics and excessive reliance, or overtrust, in AI.

CONCLUSION

This detailed critical review clearly shows that the personalization of airline service with AI is a matter of how a service is perceived; personalization is not necessarily good or intrusive in itself. The way such personalization affects the way in which passengers behave is determined by their ability in valuing different aspects of a personalized service that includes, but is not limited to reliability legitimacy value etc. Personalization in general has been seen to deliver both functional and experiential value by decreasing the effort of searching, enhancing relevance and offering service recovery that is proactive. But, such positive points are only going to be beneficial for the passengers themselves, that is, the passengers who recognize the use, accuracy of such services and their rightfulness. Value that passengers perceive is because of this what links their experience of personalization with their level of satisfaction. Algorithmic trust and digital trust are the means through which one can associate AI capability with relationship outcomes. Before AI personalization can foster engagement and relationship continuum, the level of the passenger's trust in AI shall need to be at a level that the AI system seems to be competent reliable fair transparent secure and ethically-governed. PIA's 128 passengers' airline-specific evidence reinforce this understanding: the satisfaction level was Really positively correlated with the level of perceived usefulness of AI ($r = 0.610$, $p < 0.001$), digital trust partially explained the association between personalization and repeat purchase and privacy concerns acted as a negative regulator of AI benefits-loyalty linkage ($= -0.717$, $p = 0.033$). Although the findings refer to the given case, they work as groundwork for the setup that is proposed.

Digital technologies do not just bring the notion of surveillance and loss of control; they do have the risk for privacy loss as well. It is worth considering the factors that help a passenger to understand whether their privacy is being violated and those factors include level of data sensitivity, the clarity (transparency) of information, the perception of control, the expectation, the level of trust in institutions, etc. As I said, extreme or unexpected personalization could result in a feeling akin to being spied upon, vulnerability and the reduction of individual's capability. On the contrary, limited personalized treatment that is still meaningful and relevant can further enhance the delivery of services value. Considering that, airlines should design their privacy strategies with the use of data minimization, transparency in obtaining consent, explainable recommendations, privacy controls, secure data governance fairness accountability and human oversight among others. It is the responsibility of the system to build and maintain trust through demonstrated competence rather than being blind trust in its capabilities. The article recommends conducting future research with the help of models integrated models which verify sequences and relationships between personalization, perceived value trust satisfaction engagement privacy risk. Longitudinal as well as experimental research designs, data from actual passengers' Behaviour together with cross-cultural and multi-airline studies are mainly relevant, besides studies focusing mainly on passengers and examining cultural, passenger and differences between various groups and passengers, or passenger groups. In fact, this critique has mainly highlighted issues of fragmented constructs, shortage of studies based exclusively on airlines, cross-sectional designs, insufficient data from behavioural studies and an unsatisfactory degree of exploring cultural and passenger differences as most important limitations of the current research.

To sum up, loyalty that is enduring can, most probably, be achieved only if the airline finds the common ground in personalization and privacy, the human ability of understanding and deciding versus the technological helpfulness and finally, efficient algorithms and fair and responsible governance of service. The testing through very different airline and passenger situations will be vital.

REFERENCES

1. von Struensee, S. *Artificial Intelligence and Corporate Social Responsibility*. Global Research Initiative, 2021, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3873097.
2. Huang, M.H. and R.T. Rust. "Artificial intelligence in service." *Journal of Service Research*, vol. 21, no. 2, 2018, pp. 155–172. <https://doi.org/10.1177/1094670517752459>.
3. Başer, M.Y. and A. Olcay. "Artificial intelligence (AI) Technology in smart tourism." *Gaziantep University Journal of Social Sciences*, vol. 21, no. 3, 2022, pp. 1795–1817. <https://doi.org/10.21547/jss.1084783>.
4. Samala, N. et al. "Impact of AI and robotics in the tourism sector: A critical insight." *Journal of Tourism Futures*, vol. 8, no. 1, 2022, pp. 73–87. <https://doi.org/10.1108/JTF-07-2019-0065>.
5. Bilal, M. et al. "The Impact of sustainability-driven and artificial intelligence-based personalisation on customer loyalty at south Asia-based airlines." *Discover Sustainability*, 2026. <https://doi.org/10.1007/s43621-026-04263-w>.
6. Wensveen, J.G. *Air Transportation: A Management Perspective*. 8th ed., Routledge, 2018.
7. Siddiqui, M.R. "Big data and great privacy challenges in the digital era: A comprehensive study." *Innovative Journal of Applied Sciences*, vol. 2, no. 6, 2025, pp. 42. <https://doi.org/10.70844/ijas.2025.2.42>.
8. Gao, Y. and H. Liu. "Artificial intelligence-enabled personalization in interactive marketing: A customer journey perspective." *Journal of Research in Interactive Marketing*, vol. 17, no. 5, 2023, pp. 663–680. <https://doi.org/10.1108/JRIM-01-2022-0023>.
9. Mariani, M.M. et al. "AI in marketing, consumer research and psychology: A systematic literature review and research agenda." *Psychology & Marketing*, vol. 39, 2022, pp. 755–776. <https://doi.org/10.1002/mar.21619>.
10. Aguirre, E. et al. "Unraveling the personalization paradox: The effect of information collection and trust-building strategies on online advertisement effectiveness." *Journal of Retailing*, vol. 91, no. 1, 2015, pp. 34–49. <https://doi.org/10.1016/j.jretai.2014.09.005>.
11. Aguirre, E. et al. "The personalization-privacy paradox: implications for new media." *Journal of Consumer Marketing*, vol. 33, no. 2, 2016, pp. 98–110. <https://doi.org/10.1108/JCM-06-2015-1458>.
12. Ameen, N. et al. "The personalisation-privacy paradox: consumer interaction with smart technologies and shopping mall loyalty." *Computers in Human Behavior*, vol. 126, 2022, p. 106976. <https://doi.org/10.1016/j.chb.2021.106976>.
13. Canhoto, A.I. et al. "Snakes and ladders: Unpacking the Personalisation-privacy paradox in the context of ai-enabled personalisation in the physical retail environment." *Information Systems Frontiers*, vol. 26, 2024, pp. 1005–1024. <https://doi.org/10.1007/s10796-023-10369-7>.
14. Culnan, M.J. and P.K. Armstrong. "Information privacy concerns, procedural fairness and impersonal trust: An empirical investigation." *Organization Science*, vol. 10, no. 1, 1999, pp. 104–115. <https://doi.org/10.1287/orsc.10.1.104>.
15. Dinev, T. and P. Hart. "An extended privacy calculus model for e-commerce transactions." *Information Systems Research*, vol. 17, no. 1, 2006, pp. 61–80. <https://doi.org/10.1287/isre.1060.0080>.
16. Saura, J.R. et al. "Is AI-based digital marketing ethical? Assessing a new data privacy paradox." *Journal of Innovation & Knowledge*, vol. 9, no. 4, 2024, pp. 100597. <https://doi.org/10.1016/j.jik.2024.100597>.
17. Jobin, A. et al. "The Global Landscape of AI Ethics Guidelines." *Nature Machine Intelligence*, vol. 1, no. 9, 2019, pp. 389–399. <https://doi.org/10.1038/s42256-019-0088-2>.
18. Riandhi, A.N. et al. "AI and consumer behavior: trends, technologies and future directions from a scopus-based systematic review." *Cogent Business & Management*, vol. 12, no. 1, 2025, pp. 2544984. <https://doi.org/10.1080/23311975.2025.2544984>.
19. Morgan, R.M. and S.D. Hunt. "The commitment-trust theory of relationship marketing." *Journal of Marketing*, vol. 58, no. 3, 1994, pp. 20–38. <https://doi.org/10.1177/002224299405800302>.
20. Davis, F.D. "Perceived usefulness, perceived ease of use and user acceptance of information technology." *MIS Quarterly*, vol. 13, no. 3, 1989, pp. 319–340. <https://doi.org/10.2307/249008>.
21. Suryati, L. and L. Parulian. "AI-driven personalization, privacy, trust, engagement and purchase behaviour: A systematic literature review." *Golden Ratio Data Summaries*, vol. 6, no. 3, 2026. <https://doi.org/10.52970/grdis.v6i3.2517>.
22. Özbey, H. et al. "The role of AI, smart technologies on sustainable development: Current issues on robots and self-service technology in regenerative tourism." *The Role of AI, Smart Technologies on Sustainable Development: Current*

Issues on Robots and Self-Service Technology in Regenerative Tourism, edited by E. Almokdad and K. Mouloudj, IGI Global, 2026, chap. 2. <https://doi.org/10.4018/979-8-3373-7240-2.ch002>.

23. Sharma, P. and K. Lee. "AI integration and dynamic pricing in strategic airline management." *Journal of Air Transport Management*, vol. 105, 2024, pp. 102–115.
24. Mishra, V. et al. "Optimising travel through AI: The intersection of data quality and customer experience." *2025 International Conference on Artificial Intelligence and Data Engineering (AIDE)*, IEEE, 2025, pp. 509–513.
25. Ahmed, R.R. et al. "Customer satisfaction & loyalty and organizational complaint handling: Economic aspects of business operation of airline industry." *Engineering Economics*, vol. 31, no. 1, 2020, pp. 114–125. <https://doi.org/10.5755/j01.ee.31.1.8290>.
26. Oliver, R.L. "Whence consumer loyalty?" *Journal of Marketing*, vol. 63, no. 4_suppl, 1999, pp. 33–44. <https://doi.org/10.1177/00222429990634s105>.
27. Veseli, A. et al. "AI-driven personalization and traveler satisfaction: The role of trust and perceived value and technology readiness." *Tourism and Hospitality*, vol. 7, no. 4, 2026, pp. 100. <https://doi.org/10.3390/tourhosp7040100>.
28. Prasanthi, N. et al. "Impact of AI-backed digital marketing on customer retention in the aviation sector." *Journal of Retailing and Consumer Services*, vol. 78, 2024, pp. 103–118.
29. Abrokwhah-Larbi, K. and Y. Awuku-Larbi. "The impact of artificial intelligence in marketing on the performance of business organizations: Evidence from SMES in an emerging economy." *Journal of Enterprise and Emerging Economies*, vol. 16, no. 4, 2024, pp. 1090–1117. <https://doi.org/10.1108/JEEE-07-2022-0207>.
30. Sun, H. et al. "The inverted u-shaped effect of personalization on consumer attitudes in ai-generated ads: Striking the right balance between utility and threat." *Journal of Advertising Research*, vol. 65, no. 2, 2025, pp. 237–258. <https://doi.org/10.1080/00218499.2025.2462405>.
31. Hardcastle, K. et al. "Understanding customer responses to AI-driven personalized journeys: impacts on the customer experience." *Journal of Advertising*, vol. 54, no. 2, 2025, pp. 176–195. <https://doi.org/10.1080/00913367.2025.2460985>.
32. Huang, M.H. and R.T. Rust. "A strategic framework for artificial intelligence in marketing." *Journal of the Academy of Marketing Science*, vol. 49, 2021, pp. 30–50. <https://doi.org/10.1007/s11747-020-00749-9>.
33. Teepapal, T. "AI-driven personalization: Unraveling consumer perceptions in social media engagement." *Computers in Human Behavior*, vol. 165, 2025, pp. 108549. <https://doi.org/10.1016/j.chb.2024.108549>.