IBN HALDUN UNIVERSITY
SCHOOL OF GRADUATE STUDIES
DEPARTMENT OF AIR TRANSPORT MANAGEMENT

MASTER'S THESIS

ANALYSIS OF CONSUMER DECISION-MAKING ON THE USE OF DIFFERENT AIRLINE TICKETING CHANNELS

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ISTANBUL, 2025

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by
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A thesis submitted to the School of Graduate Studies in partial fulfillment of the requirements for the degree of Masters of Science Air Transport Management

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ACADEMIC HONESTY ATTESTATION

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

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ÖZ

FARKLI HAVAYOLU BİLETLEME KANALLARININ KULLANIMINA YÖNELİK TÜKETİCİ KARAR VERME SÜRECİNİN ANALİZİ

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Ağustos 2025, 59 Sayfa

Havayolu endüstrisi, modern teknolojik çağ kadar köklü bir geçmişe sahiptir. Ticari hava taşımacılığı 1914 yılında başlamış olmakla birlikte, rezervasyon teknolojileri ancak 1960'lı yıllarda American Airlines tarafından geliştirilen Sabre adlı Global Distribution System (GDS) ile kullanılmaya başlanmıştır. Zamanla, çevrim içi seyahat acenteleri (OTA'lar), internet booking engine (IBE) ve mobil uygulamalar gibi birçok yeni biletleme yöntemi geliştirilmiştir. Bu tez, anket yöntemiyle farklı demografik grupların uçuş rezervasyonu tercihlerini ve bu tercihlerin arkasında yatan nedenleri incelemeyi amaçlamaktadır. Elde edilen veriler, birden fazla hipotez çerçevesinde IBM SPSS gibi analiz araçları kullanılarak değerlendirilecek; tüketicilerin karar verme süreçlerine etki eden en anlamlı faktörler belirlenmeye çalışılacaktır. Bu doğrultuda, çalışmada havayolu şirketlerine, geleneksel acente tabanlı rezervasyon yöntemleri yerine çevrim içi kanalların kullanımını teşvik etmeye yönelik öneriler sunulacaktır. Araştırma bulguları, algılanan fayda, sosyal risk ve ödeme esnekliğinin, tüketicilerin çevrim içi uçak bileti satın alma niyetlerini etkileyen en güçlü faktörler olduğunu göstermektedir. Özellikle, çevrim içi rezervasyonun yararlı, verimli ve zaman tasarrufu sağlayıcı olarak algılanması, tüketicilerin bu platformları tercih etme eğilimini önemli ölçüde artırmaktadır.

Anahtar Kelimeler: Algılanan Risk; Algılanan Fayda; Online Biletleme; İnternet Booking Engine; Tüketici Davranışı; Teknoloji Kabul Modeli.

ABSTRACT

ANALYSIS OF CONSUMER DECISION-MAKING ON THE USE OF DIFFERENT AIRLINE TICKETING CHANNELS

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The airline industry is as old as the new age of technology. Commercial travel began as early as 1914, American Airlines in the 1960s with the advent of Sabre, a global distribution system (GDS). Over the years, numerous new methods of ticket sales have been introduced, including OTAs, IBEs, and mobile apps. This thesis will investigate, through a survey, how different demographics choose to book their flights and the reasons behind their decisions. This thesis will use multiple hypotheses to interpret the survey results and identify the most significant factors influencing consumers' decisions, using analysis tools such as IBM SPSS. Based on this analysis, the thesis will provide recommendations to airlines on how to encourage consumers to use their online channels instead of traditional booking methods through agencies. This thesis confirms that perceived usefulness, social risk, and payment flexibility are the top influential factors affecting consumers' decisions to purchase airline tickets online. Specifically, the perception that online booking is helpful, efficient, and timesaving significantly increases consumers' intent to use such platforms.

Keywords: Consumer Behavior; Internet Booking Engine; Online Ticketing; Perceived Risk; Perceived Usefulness; Technology Acceptance Model.

DEDICATION

This work is dedicated to my professor, manager, and mentor, Çağrı Çamlıca, who believed in me and took me straight out of university to pursue a career in the aviation industry, specifically in the aviation technology sector.

Thank you!

ACKNOWLEDGEMENT

I want to thank my valuable advisor, Prof. Dr. Ali Osman Kuşakcı, who guided me in this research and helped me overcome my difficulties with his knowledge and experience.

I extend my endless love and respect to my family, who were always there for me at every stage of my thesis.

Tarek HAMMOUD
İSTANBUL, 2025

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LIST OF SYMBOLS AND ABBREVIATIONS

API	Application Programming Interface
ATO	Airport Ticket Sales Office
CC	Credit Card
CTO	City Ticket Sales Office
CRS	Computer Reservation Systems
DC	Debit Card
GDS	Global Distribution Systems
GUI	Graphical User Interface
IBE	Internet Booking Engine
NDC	New Distribution Capabilities
OTA	Online Travel Agency
POS	Point of Sale
PSP	Payment Service Provider
PSS	Passenger Service System
REQ	Request
RES	Response
SABRE	Semi-Automatic Business Research Environment
TAM	Technology Acceptance Model
TRA	Theory of Reasoned Action
UI	User Interface
UX	User Experience
XML	Extensible Markup Language

CHAPTER I

INTRODUCTION

American Airlines was the first to test automated reservation systems in the 1900s. It was called the Electromechanical Reservoir. The Electromechanical Reservoir had many issues since it did not work in real-time in 1952. To streamline the airline ticket booking process, American Airlines introduced a new system that could store up to 1,000 flights. Semi-Automatic Business Research Environment (Sabre) was later released in 1964. Sabre was designed to make the ticket booking process real-time, more efficient, and productive compared to the old manual and offline method. Sabre was able to update seat inventory, print tickets, and create reservations (Davis P., 2016). Sabre is currently part of the GDS (Global Distribution System), and more sophisticated systems have been developed, such as Amadeus Altea Suite which is a collaboration between Lufthansa, Air France, Iberia, and SAS. The Amadeus Altea Suite was developed after the European market grew concerned about American computer reservation systems (CRS) dominating the industry. The European market decided to make their own GDS, which became the best CRS system in the world to this day. Moreover, Amadeus felt threatened when Navitaire was released, as it was a more modern system; therefore, they decided to acquire it in 2015 (Roberts, 2013).

With the rapid advancement of technology, every airline today uses one of the leading computer reservation systems (CRS), such as Amadeus—which serves airlines like Qatar Airways (Boon, 2022) or SABRE used by carriers like Volaris. Some airlines even operate their own proprietary CRS systems.

Many airlines are choosing to leave the GDS/CRS platforms and instead use their own systems. This shift is driven by rising GDS fees, with the global aviation industry spending around $7 billion annually on GDS services. When those systems were originally developed, the internet was not as advanced as it is today, and people did not have widespread or easy access to it. As a result, they had to rely on travel agencies

to book their tickets. With technological progress and rising GDS/CRS fees, airlines began reaching customers directly through their own websites and mobile apps. Consequently, airlines increasingly view investment in their own digital platforms as a strategic priority. By enhancing their websites and mobile apps, they can offer personalized services, gather valuable customer data, and strengthen their brand loyalty. Additionally, direct channels enable airlines to implement dynamic pricing strategies more effectively and respond more quickly to market changes. In contrast, relying on outdated CRS and GDS systems limits their flexibility and innovation potential, putting them at a disadvantage compared to competitors who embrace modern technology. Therefore, shifting to direct sales channels is not only a cost-saving measure but also a crucial step for airlines to remain competitive and meet evolving passenger expectations.

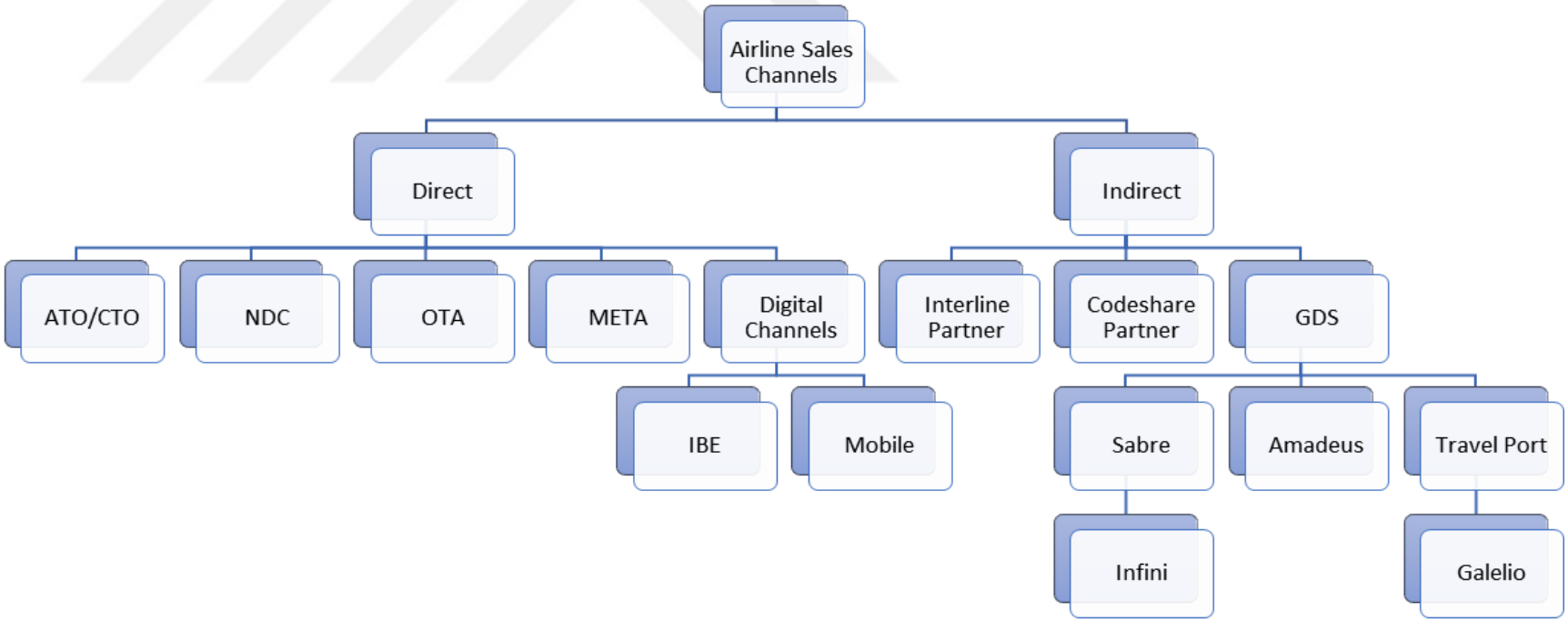


Figure 1.1. Airline Sales Channels

In the airline industry, ticket sales occur through both direct and indirect channels, as shown in Figure 1.1.

1.1. Direct Sales Channels

The airline industry has adopted several direct sales channels. Some are listed and explained below.

ATO/CTO: These are the airport and city ticket offices where passengers can visit and purchase tickets directly from the airline's offices.

NDC: NDC (New Distribution Capability) is a travel industry-supported program (NDC Program) launched by IATA for the development and market adoption of a new, XML-based data transmission standard (NDC Standard) (IATA, 2025).

OTA: online travel agencies, OTAs aggregate content, offer convenience, and empower travelers with the ability to compare prices and book products (OAG, 2025).

META: A metasearch engine aggregates information from various websites to assist consumers in comparing airline ticket prices and presents this information on a single webpage (Elphick, 2024).

- **Digital Channels**

IBE: Aviation websites, known as Internet Booking Engines (IBEs), operate using Application Programming Interfaces (APIs) that communicate through XML code. This XML code consists of a series of requests and responses that link the websites to the Central Reservation System (CRS) or Global Distribution System (GDS). The API then translates this data into a graphical user interface (GUI), making the booking process simple and user-friendly for passengers.

Mobile Apps: Mobile apps follow the same logic as IBE; they work based on APIs represented on a GUI to simplify the booking process for passengers on their mobile phones.

1.2. Indirect Channels

The airline industry has adopted several indirect sales channels. Some are listed and explained below.

GDS: Global Distribution Systems (GDS) constitute interconnected networks that enable seamless transactions between Online Travel Agencies (OTAs), traditional travel agencies, and airlines, facilitating real-time access to flight availability and ticket reservations. In response to evolving technological demands, airlines are increasingly adopting advanced and more user-centric Central Reservation Systems (CRS), such as Crane by Hitit. Additionally, many airlines are developing proprietary agency websites featuring intuitive graphical user interfaces (GUIs) to streamline and enhance the booking experience.

Interline: An interline agreement is an agreement between two carriers. Within this agreement, airlines agree to share itineraries to connect passengers between two or more points, allowing passengers to avoid the hassle of re-checking in or collecting their baggage between segments. In an interline agreement every airline flies under their own two letter code for their segments, for example airline XY and YZ flying an interline agreement for a two leg flight from points A to C, Airline XY will fly the first leg A to B under their own XY code and airline YZ will fly the second leg from B to C under their own YZ code (Flight BI, 2025).

Code Share: Code share is an agreement between two or more carriers. In this agreement, one of the carriers is designated as the operating carrier, the carrier that operates the segment under its code. The others are the marketing carriers that sell tickets for this flight on their websites (Flight BI, 2025).

Even travel agency offices and airline offices use different online ticketing systems to make their bookings.

1.3. Problem Statement

What are the factors that affect the consumers behavior and their choice of buying their tickets from a direct or indirect channel? Is purchasing tickets online perceived as risky? What types of risks can the consumers face during online shopping? How can those risks be mitigated to provide the consumers a safe and happy online shopping experience?

1.4. Research Objectives and Questions

This thesis will examine why some passengers prefer booking through indirect channels in certain regions, compared to using direct channels, and it will also compare why other passengers in other regions prefer to book through direct channels, rather than indirect channels. The thesis will achieve this result by examining demographics in various regions and utilizing consumer behavior models to comprehend consumer decision-making processes.

1.5. Scope and Limitations

The scope of this thesis encompasses the demographics of various regions, including Africa, the Middle East, North America, and Europe. It will examine the consumer behavior of the selected demographics using a survey designed based on the Technology Acceptance Model (TAM). The survey will also include questions about respondents' preferred shopping and payment methods to analyze whether the availability of multiple payment options influences consumer behavior.

The limitations of this thesis include the lack of accurate data from airlines regarding consumer behavior, passenger preferences for sales channels, and the percentage of sales attributed to each channel. Additionally, this study must account for user bias, the complexity of decision-making, and human factors that influence consumer choices.

1.6. Structure of the Thesis

Following the introduction, Chapter 2 will present the literature review, exploring various models related to consumer behavior and decision-making in both online and traditional shopping contexts. The focus will be on the Technology Acceptance Model (TAM) and the key factors that influence it, including perceived usefulness and perceived ease of use. Additionally, the chapter will examine different types of risk factors affecting consumers, such as privacy risk, performance risk, social risk, time loss risk, and psychological risk.

They will be combined into a single factor, the risk index. It will also touch on the different demographics and different payment methods theory.

Based on these theories, a survey will be created and distributed to different regions to collect data specific to each geographical region. It will use multiple hypotheses that will interpret the survey results and pick the most significant factors that contribute to the consumers' decision using analysis tools such as IBM SPSS, accordingly, in this thesis recommendations will be made to the airlines on how to push the consumers to use their online channels rather than the old methods of booking through an agency.

Finally, the conclusion will summarize the findings and recommendations.

CHAPTER II

LITERATURE REVIEW

2.1. Technology Acceptance Model

In the age of technology, understanding consumer acceptance of technology is crucial. Information systems is a vast topic that encompasses various uses and applications across different industries and aspects of life. TAM, introduced by Fred Favis in 1958, is illustrated in Figure 2.1 (Bannister, 2023).

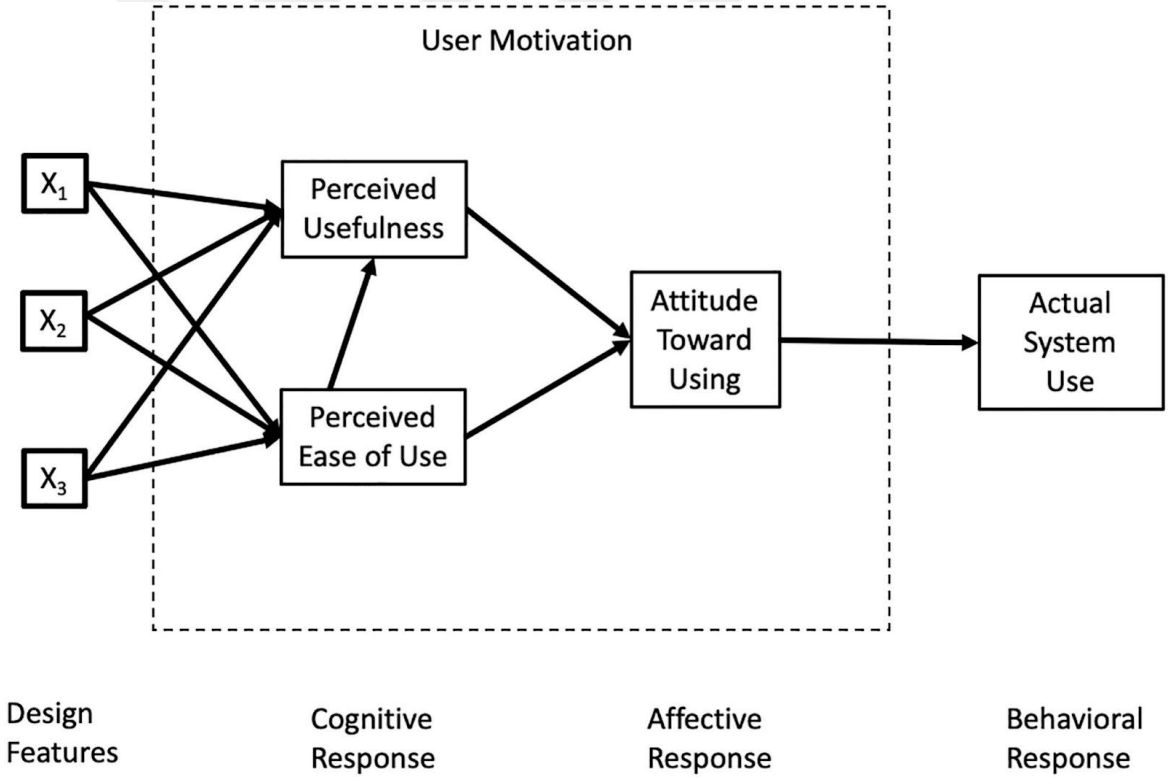


Figure 2.1. Technology Acceptance Model
Reference: Bannister, 2023

TAM is a behavioral and psychological model that aims to explain the user's motivation for using a specific system. TAM argues that if the psychological barrier

between man and machine is lifted and it is understood why a user would use a particular system, it would be easier to model and program better systems (Bannister, 2023).

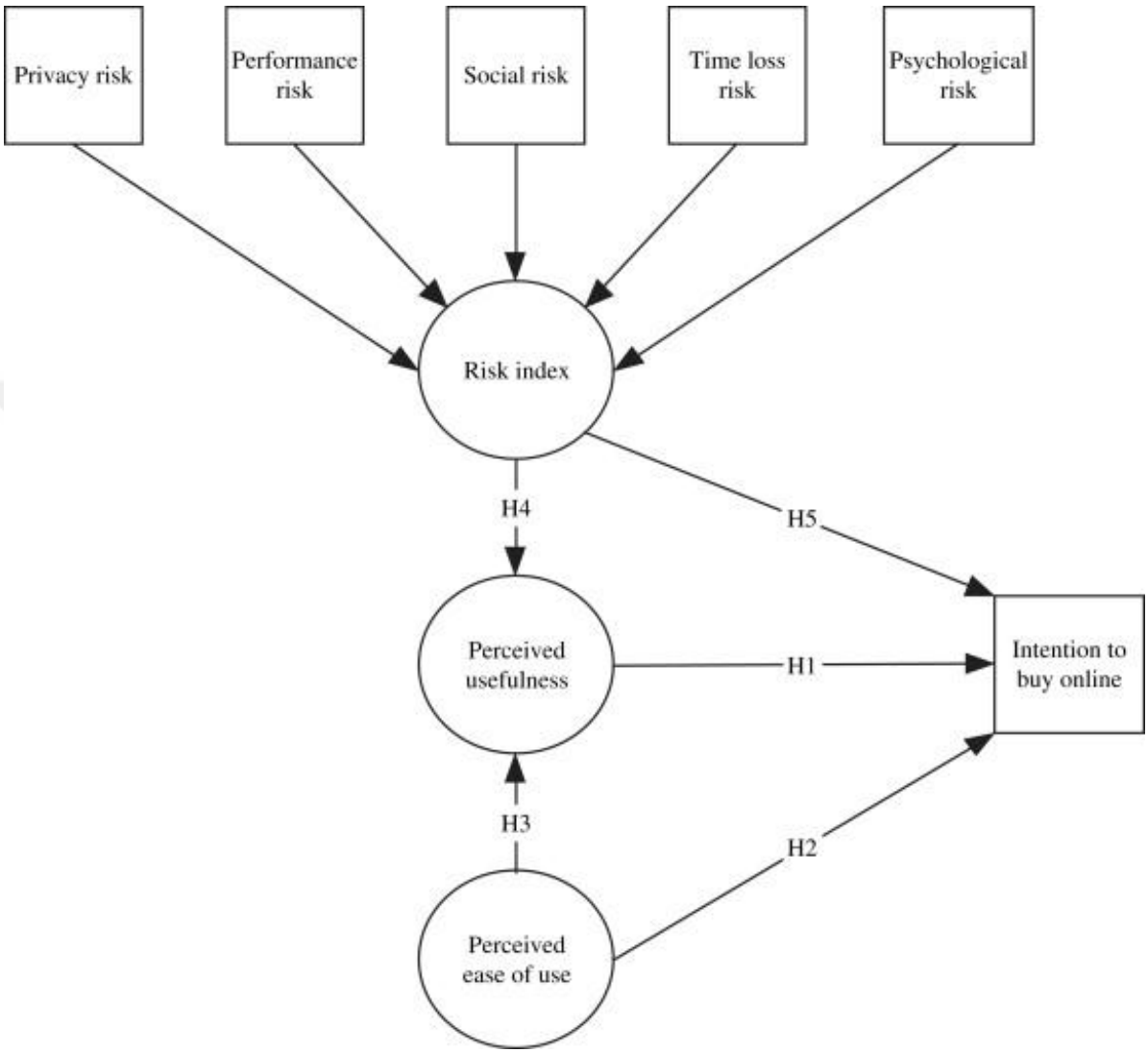


Figure 2.2. Intention to Buy Online Airline Tickets
Reference: Ruiz-Mafé, Sanz-Blas, & Aldás-M, 2009

TAM uses three main criteria:

2.2. Perceived Usefulness/Perceived Ease of Use and Attitude Towards Using

Previous social psychology theories applied to information technology systems include the Theory of Reasoned Action (TRA) developed by Ajzen (1975). Ajzen (1975) also demonstrated that entrepreneurial creativity directly influences customers'

perceptions of usefulness and ease of use when adopting e-market technologies. For example, in the context of e-tax services, Kusumo Putro (2024) found that entrepreneurial creativity impacts these perceptions. However, their findings also revealed some variation: even if products were not particularly creative, customers still perceived them as useful if the product simplified their tasks.

Davis (1989) defined system usefulness as the extent to which consumers believe that using the system enhances their productivity or simplifies daily tasks. He also proposed that ease of use leads to perceived usefulness; when consumers find a system easier to use, they perceive it as more useful, which increases their acceptance and perceived benefits. Subsequent research has supported this relationship (Ruiz-Mafé, Sanz-Blas, & Aldás-Manzano, 2009).

2.3.Risk Index (Perceived Risk)

Risk cannot be defined. Depending on different situations and perspectives, risk is perceived differently. Furthermore, researchers' different personal values and backgrounds seem to influence their definitions of risk (Trimpop, 1994). According to (Vlek & Stallen, 1980), there are different definitions of risk, most commonly, the probability of loss, the size of credible loss, the expected loss, the variance of the probability distribution over the probability of all possible consequences, and the semi-variance of the expected value and variance of the distribution of consequences.

Examining consumer behavior, making a choice or decision about a specific product or purchase always involves some risk, which affects their decision-making process. In air travel, making a decision is perceived to be riskier than traditional shopping decisions, taking into consideration airline sales channels, airline reputation, and airline safety (Pizam & Mansfield, 1999). Assessment of risk is constructive in Nature, related to utility theory. Uncertainty and value of money under risk are subjective to an individual as per the utility theory, the tendency for a system failure to occur that applies to the whole population remains a question of statistical calculation of risk, for example if out of 100 tickets sold five tickets would face issues with payment or delivery is a 5% chance, would that be perceived as risk for the customer is subjective to the customers perspective. (Slovic, 1987).

Bauer (1960) introduced the concept of perceived risk and argued that “consumer behavior involves risk in the sense that any action of a consumer will produce consequences which he cannot anticipate with anything approaching certainty, and some of which at least are likely to be unpleasant.”

Since 1960, following Bauer's statement, various studies have demonstrated challenges in defining perceived risk (Vlek & Stallen, 1980).

Vlek and Stallen (1980) proposed six main definitions of risk: the probability of loss, the size of credible loss, the expected loss, the variance of the probability distribution over all possible consequences, a linear function of the expected value, and the variance of the distribution of consequences. These definitions show that the meaning of risk changes depending on the scenario and perspective. Perceived risk helps explain how financial risk, as the primary factor, influences decision-making in online purchasing. Researchers most frequently measure financial risk because it is the most tangible and observable. This approach models perceived risk exclusively based on negative expectations and consequences. Peter and Ryan (1976) concluded that consumers perceive risk based on their judgments about the likelihood of adverse outcomes and the severity of those outcomes.

This thesis will utilize the following risk concepts, adopted from Ruiz-Mafe (2009): privacy risk, performance risk, social risk, time loss risk and psychological risk.

2.3.1. Privacy Risk

The National Institute of Standards and Technology (NIST) defines privacy risk as “the likelihood that individuals will experience problems resulting from data processing, and the impact should they occur.” This definition highlights the risk that users face when organizations collect and use their data without consent (National Institute of Standards and Technology, 2025).

Zhang, Tan, Xu, and Tan (2011) defined privacy risk as the “potential loss of control over personal information when the information is accessed without permission.” Customers highly value the privacy of their personal information, and they worry that

websites might misuse, steal, or even sell their data through cyberattacks. This concern represents a risk that many customers are unwilling to accept.

2.3.2. Performance Risk

According to Bauer (1960), "Performance risk is a type of risk that can occur during the execution of a project. It is the risk that the project will not meet its objectives or deliverables due to inadequate performance by one or more members of the project team. This type of risk can be caused by a variety of factors, including lack of experience, poor communication, inadequate resources, and inadequate training." (Bauer, 1960).

2.3.3. Social Psychological Risk

There are various definitions of social risk, which depend on the specific domain.
In the social domain, "the social risks represent the probability of some threats and uncertainties which have arisen as a result of modernizing the society, which imply irreversible damage for all forms of life" (Beck, 1992).

Moreover, Hruska and Foldynova defined it as "Social risks represent key factors for economic and social cohesion, which contribute to increasing the local community's quality of life" (Hruska-Tvrdy & Foldynova, 2011).

Social risk can also be linked to psychological risk. According to Jacob & Leon (1972), psychosocial risk (psychological and social risk) is a risk that is linked to each other as they affect the customer's self-image perception from their perspective and how people perceive them.

On the other hand, psychological risk refers to the mental pressure and feelings of frustration and disappointment that may arise when a customer does not receive the expected product (Mitchell, 1992).

2.3.4. Time Loss Risk

Mitchell (1992) defined time loss risk as “the risk that the consumer will waste time, lose convenience, or waste effort in getting a service redone”. According to Hassan, time loss risk not only includes the risk of shopping online or purchasing products online, but also the likelihood of wasting time when requesting a refund or return of the product, as well as the risk of website slowness or issues with the website server. Categorizing into three categories:

First, there are issues with the technical aspects of the website, its complexity, and accessibility (Hassan, Kunz, Pearson, & Mohammed, 2006).

Second, according to Forsythe et al. (2006), the process of signing up for a website and the account verification process entail extra effort and time loss to complete the process (Forsythe, Liu, Shannon, & Gardner, 2006).

Third, the time lost waiting for the product to be confirmed or delivered, as in the case of airline tickets, is the risk of not receiving the confirmation for their tickets (Afshan, Sharif, Waseem, & Farooghi, 2018).

2.4.Demographics

Individual decision-making processes are always unique; no two people make decisions similarly. We inherit our decision-making tendencies and learn various behavioral tendencies, some of which we can control and some of which are subconscious, resulting in a uniqueness in every individual's decision-making process.

Consumer behavior and decision-making are influenced by both internal and external factors, one of which is demographics. Variables such as age, gender, and region shape how individuals perceive products and influence their purchasing and consumption behaviors (Niosi, 2021).

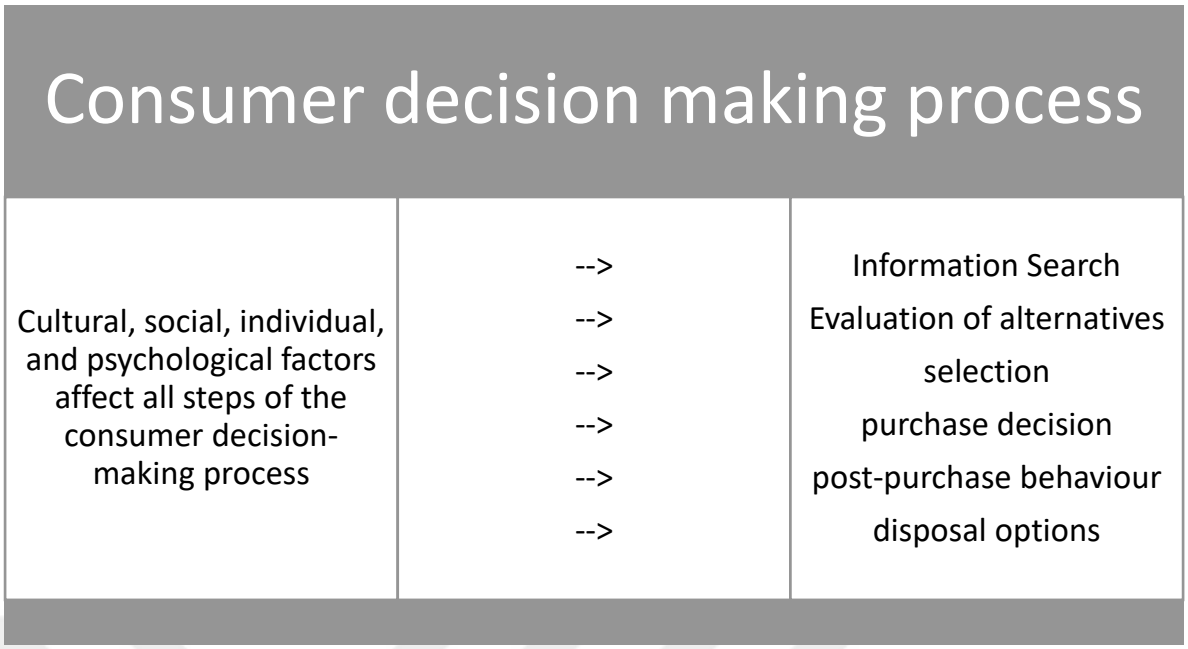


Figure 2.3. Consumer Decision-Making Process
Reference: Niosi, 2021

2.4.1. Age

One of the key demographic factors that influences customer decision-making is age. According to Slabá (2020), age creates a significant difference in how different customers and consumers make their shopping choices.

2.4.2. Gender

Males and females have different product expectations and prefer to shop differently, according to Mitchell and Walsh (Lakshmi, Niharika, & Lahari, 2017).

2.5.Global Demand for Online Shopping

The rapid growth of internet consumers worldwide over the past decade has impacted the demand for online shopping, resulting in an economic boom in e-commerce that makes the globe function as a single market, facilitating the trade of goods and services, evolving from classic technologies to mechanisms such as electronic fund transfers and fully equipped online trading systems. The emergence of various cloud platforms, such as Amazon, eBay, and PayPal, has fostered the development of user-

friendly marketplaces that cater to the specific needs of different market sectors. This shift in the market towards online trading promotes time-efficient operations while reducing geographical limitations through digital commerce. The research highlights a notable increase in global Internet users between 2011 and 2020, rising from 2.27 billion to over 5.05 billion, representing a 32% increase, with a range of 7% to 65% of the global population. The rapid growth of internet access, along with affordable cloud-based smartphones and wireless networks, has made it easy for consumers to browse a wide range of products and services within seconds.

Furthermore, the omnichannel strategies employed by marketers, integrating social media and e-commerce as a unified medium, enhance digital engagement and spending worldwide. Shankaraiah states, "Regionally, Asia dominates internet usage, accounting for 53. 4% of global users as of March 2021, followed by Europe (14. 3%) and Africa (11. 5%), with North America contributing only 6.7%. This distribution has mirrored the rise of global e-commerce markets. In 2019, China led with $193 trillion in e-commerce sales, followed by the United States ($586.92 billion), the United Kingdom ($141.93 billion), Japan ($115.40 billion), and South Korea ($103.48 billion). The rapid growth in emerging markets, particularly India and Russia, indicates a continued upward trend in global digital purchasing behavior." Nevertheless, due to significant exposure to consumer reviews and opinions, factors such as brand image, customer service, security, and privacy during online shopping greatly influence consumer behavior while simultaneously acting as barriers for some businesses that lack user- friendly interfaces, security, and cyber safety, which challenge various regions to adapt to the fast- paced growth. Therefore, Shankaraiah (2022) concludes that e-commerce is no longer a choice but a necessary channel for connecting consumers and businesses, particularly in the post-pandemic er

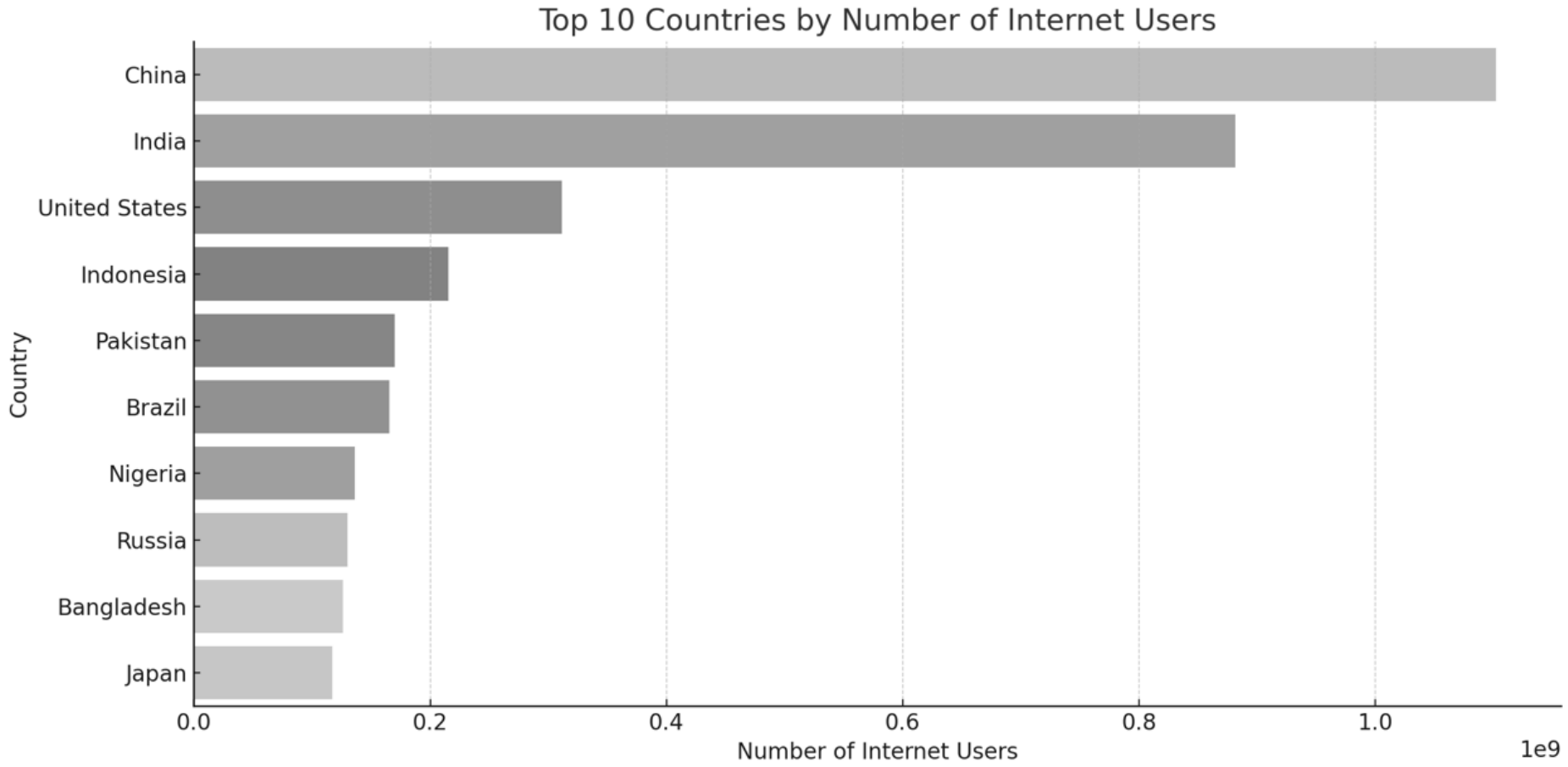


Figure 2.4. Top 10 Countries by Number of Internet Users

Reference: World Population review, 2025

2.5.1. Countries with the Most Internet Users

Figure 2.4 presents data collected from over 212 countries and highlights the top ten countries with the highest number of internet users. China leads the list, with 1.10 billion people online and a penetration rate of 77.3%. India follows with 881 million users and a 62.6% penetration. The United States has 311 million internet users, accounting for a high penetration rate of 92.4%. Indonesia reports 215 million users (78.8%), while Pakistan has 170 million (70.8%). Brazil is close behind with 165 million users (77.1%), and Nigeria records 136 million (63.8%). Russia has 129.8 million internet users, achieving an 89.5% penetration rate. Bangladesh follows with 126 million users (75.9%), and Japan rounds out the top ten with 117 million users and the highest penetration rate of 94.2%.

The ratio of Internet users to the total country population does not accurately represent the penetration rate because several factors influence the number, including the country's infrastructure development, socio-economic status, and political factors.

We can take the following countries as examples of developing and developed countries with low populations yet a very high percentage of Internet usage, thanks to their high accessibility. High internet usage is associated with high GDP per capita, enhanced digital policy security, and government investment in the country's digital infrastructure. Therefore, we can consider these countries to have reached the peak of digital services and e-commerce, along with widespread introduction and market penetration of tech products.

Countries such as Finland, Norway, Australia, South Korea, and Saudi Arabia show a different trend, as they maintain exceptionally high internet penetration rates despite having smaller populations. Finland leads with a penetration rate of 97.7%, followed closely by Australia at 97.6%, Saudi Arabia at 96.9%, South Korea at 95.4%, and Norway at 94.8%. These figures highlight widespread digital access and connectivity across these nations.

Among the top countries, population-wise, are some emerging nations with a strong base and established presence, but a low Internet penetration rate, primarily due to low literacy levels and the affordability of technology in rural areas of those countries.

Countries such as India, Pakistan, Nigeria, and Bangladesh offer significant potential for digital expansion. In India, despite a 62.6% internet penetration rate, over 400 million people remain offline out of a population exceeding 1.4 billion. Similarly, Pakistan, with a penetration rate of 70.8%, still shows considerable room for growth and development. Nigeria, Africa's most populous nation, has a 63.8% internet penetration rate, indicating substantial potential for digital advancement. In Bangladesh, where internet usage stands at 75.9%, digital adoption is rising rapidly due to increased mobile access, although infrastructure challenges persist. These nations are key areas for global growth in e-commerce, fintech, e-learning, and social media, especially if investments in digital infrastructure and inclusive access continue.

Some large countries with substantial populations still experience low internet penetration rates. Ethiopia stands at 30.3%, DR Congo at just 7.3%, Sudan at 27.4%, Afghanistan at 10.1%, and Uganda at 22.2%. Political conflicts and instability, poor infrastructure, limited investment, high electricity costs or unreliability, and low technological literacy contribute to these low levels of connectivity. As a result, these regions face a significant digital divide that hinders economic participation and restricts access to opportunities in education, healthcare, and civic engagement (World Population Review, 2025).

Based on geographic trends, we can observe the following: Asia leads the world in both the number of internet users and overall distribution, with countries like China, India, Indonesia, and Pakistan occupying top positions. Europe shows consistently high internet penetration rates, as the United Kingdom (96.6%), Germany (93.3%), and France (92.2%) demonstrate strong digital maturity. In contrast, Africa is undergoing rapid digital transformation but still struggles with significant connectivity challenges. For instance, Nigeria records over 136 million internet users, while countries such as Eritrea (1.8%), Burundi (4.8%), and Chad (5.6%) highlight a stark digital divide. In Latin America, countries like Brazil (77.1%), Mexico (75.1%), and

Argentina (88.4%) maintain strong internet user bases, primarily driven by widespread mobile device usage (World Population Review, 2025).

2.6.Countries with the Highest Demand for Online Shopping

As a result of globalization and the reduction of global barriers, which were once significant concerns for businesses worldwide, the exponential growth of online shopping has significantly altered consumer behavior regarding various products and services.

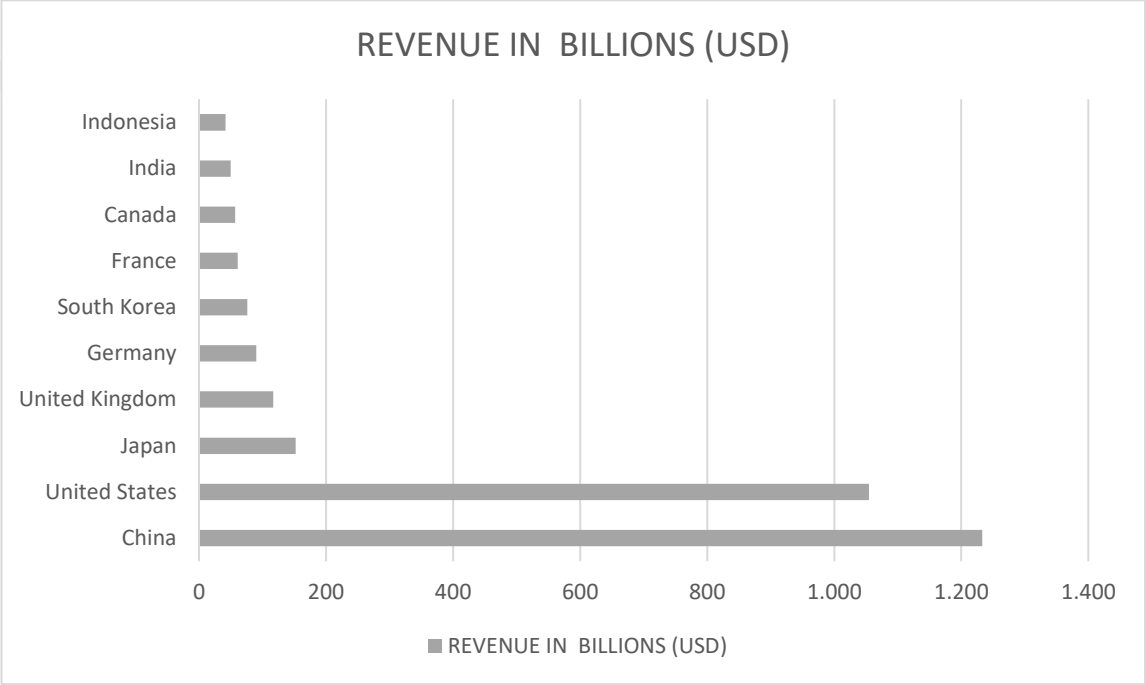


Figure 2.5. Top 10 Countries in Terms of E-Commerce Revenue
Reference: Panozzo, 2024

Geographics and demographics have led to noticeable increases in online transactions, reflecting shifting consumer expectations. According to WiziShop's 2024 analysis of buying trends in the UK, US, Korea, China, and Germany—among the top ten countries for e-commerce consumption—the United Kingdom led globally in 2024, with over 80% of the population actively purchasing goods online. Increase in online shopping illustrates a high level of digital literacy, ease of accessibility, and substantial digital transactions, revealing a preference for fast delivery and user-friendly exchange policies. Consequently, consumer loyalty has increased based on the digital services

provided, creating an optimal environment in the UK for implementing omnichannel strategies and succeeding in online shopping. Following the UK, the US ranks second in the world in digital online penetration, boasting the most significant market revenue after China, where consumers exhibit diverse preferences and a high value for digital service subscriptions and memberships. Amazon is one of the platforms reinforcing customer expectations for fast delivery, minimal or free shipping charges, and user-friendly pages tailored to their preferences and habits, facilitating online shopping that meets their expectations anytime, anywhere.

On the other hand, South Korea has a significant global penetration of smartphones, which has increased the frequency of online shopping through mobile apps. The increase in the number of smartphones forces companies to enhance cybersecurity to protect users while creating various payment integrations that improve logistics infrastructure and set a significant benchmark for the best e-commerce experience globally.

Chinese consumers actively adopt new technologies and digital shopping experiences early. They leverage AI-powered products and services to enhance e-commerce and integrate these tools with other platforms for a seamless experience. Based on these findings, Panozzo (2024) concludes that businesses must build strong consumer trust, loyalty, and cultural alignment, and promote privacy awareness and digital literacy to ensure online shopping succeeds and dominates in any market or region.

In summary, countries with the highest demand for online shopping are not necessarily the most populous. Instead, these countries develop advanced digital ecosystems, cultivate high consumer trust, and embrace cultures that value convenience-based commerce. By understanding these dynamics, businesses can tailor their strategies to meet the evolving expectations of digital-first consumers worldwide.

2.6.1. Marketing's Impact on Airline Ticket Purchase Decisions

The constantly evolving and highly competitive aviation industry shapes consumer behavior and decision-making in airline ticketing, leading to significant market fluctuations that impact aviation companies. Esti Liana (2024) synthesizes multiple

strategies from international journals in a qualitative meta-study spanning the past decade, providing an in-depth analysis of airlines' marketing tools, pricing tactics, and innovations that influence consumer behavior and help identify customer personas.

The research focuses on the importance of analyzing online booking and the predictive analytics undertaken for the strategic marketing timing, where airlines work on aligning their promotions and capacity allocation to anticipate the demand spikes based on seasonal, geographical, or demographical factors that make them utilize the resources most optimally, influencing consumers' purchase behavior.

Like any other market or industry aviation industry also works on creating brand image and brand awareness to have a stronger loyalty towards their organization or business and create the urge for consumers to follow and focus on the type of promotions and service quality that they serve like flexible bundles and different guarantees on different types of bookings to enhance the value and reduce the booking decision process. Brand image is one of the key factors that helps an organization maintain its position in the market in the long run, even during a crisis, due to high customer loyalty and attaining sustainability through public trust, which influences consumers' attitudes.

Online booking makes data collection easier and more diverse across various mediums and channels. Airlines can analyze this customer data to develop consumer behavior models for both descriptive and predictive analysis. Using AI-based tools, airlines tailor their websites and smartphone apps to match individual consumer preferences by offering targeted discounts, bundles, and relevant suggestions based on search history and booking patterns. This approach, similar to the Technology Acceptance Model, helps align the company's vision with its marketing campaigns and strategies, effectively catering to consumer preferences and positively influencing purchase decisions.

Airlines promote flight bookings by offering bundled packages that include additional services such as extra baggage, seat upgrades, and seat selection. These packages create new marketing opportunities and influence consumer behavior. Airlines use these bundles to enhance customers perceived value and provide diverse options

tailored to different economic statuses and preferences, which affects their buying psychology. Holmes points out that by offering such facilities, airlines increase customer satisfaction and strengthen their value proposition, thereby boosting the likelihood of repeat purchases.

Local consumers largely influence domestic travel within large countries. They shape the success of marketing campaigns through word of mouth, reduce perceived risk, and play a key role in purchasing decisions.

During a crisis like the COVID-19 pandemic, some airlines adapted early by communicating health protocols, applying flexible booking policies, and offering a safe environment for travelers to rebuild their trust and positively influence their attitudes towards purchasing.

Accompanying the digital surge around the globe and the introduction of several technologies, the airline industry has leveraged this economic shift by introducing various mobile platforms, pricing engines, and integrated E-ticketing systems to enhance the perceived value for consumers. This technological interface becomes part of the marketing promise, offering instant booking, personalized UX, and 24/7 support, which fosters consumer trust and reduces friction in purchasing decisions.

This research highlights the key factors that affect marketing and identifies strategies fundamental to achieving market success in the aviation industry. These strategies focus on creating perceived value, building consumer trust and safety, personalizing and customizing preferences to align with customer needs, providing social validation through positive feedback, and simplifying transactions to facilitate purchase decisions.

2.7. Payment Methods and Their Effect on Online Shopping

Payment methods directly influence customer experience, conversion rates, and the overall success of an online business. Offering a variety of online payment options is essential for competing effectively in the digital marketplace. By providing multiple payment methods, companies can accommodate diverse customer preferences and

demographics, simplify the shopping process, and improve security, resulting in higher sales and greater customer satisfaction (APEXX, 2024).

2.7.1. Importance of Multiple Payment Methods

Online shops that offer multiple payment options benefit both the business and the customer. By catering to a broader range of payment preferences shaped by security concerns and access to credit or debit cards, these shops appeal to a broader demographic. Multiple payment options enhance the customer experience by making the checkout process seamless and convenient, with options such as paying in installments or booking now and paying later. This flexibility makes online shopping more affordable and enjoyable, encouraging more purchases.

For businesses, offering various payment methods increases sales revenue by attracting customers who may hesitate to pay large upfront payments. It also builds customer loyalty, as positive shopping experiences encourage repeat purchases and word-of-mouth recommendations. Additionally, providing multiple payment options improves brand perception by demonstrating that the company values its customers beyond just profits.

From a risk management perspective, having diverse payment channels allows businesses to select secure options with lower fees for customers. It also provides backup alternatives if one payment method becomes unavailable, ensuring continuous sales and smooth online operations (Access PaySuite, 2024).

2.7.2. Online Payment Methods

For the Aviation industry to keep up with the evolution of the global market, given the diversified mediums of purchase and payment methods, it needs to implement and adapt quickly to online digital technologies and technicalities by integrating different payment methods into its systems.

2.7.3. Different Online Payment Methods

- **Book on Hold**

Interswitch, an online payment service provider, offers various payment methods for online shopping. One of their main products for airlines is Quickteller, which allows passengers to make payments securely through their platform instead of using credit cards directly on the internet. After passengers select their tickets and reach the payment page, they choose Quickteller as their payment method. The system then provides them with a Passenger Name Record (PNR) payment code and a link that redirects them to the Quickteller platform to complete the payment. Quickteller exemplifies the Book on Hold (BOH) option, giving passengers more time to finalize their purchases (Interswitch, 2025).

- **Payment Gateway**

Payment Service Providers (PSPs) such as Paystack, Flutterwave, and MyFatoorah offer a range of payment solutions, including Apple Pay, bank transfers, point-of-sale payments, and online payment gateways. Airlines in Africa primarily use these services to provide secure online payment gateways for their passengers. After selecting their tickets, passengers are redirected to the payment gateway—such as Paystack—where they can complete their booking securely using a credit card or digital wallets like Apple Pay or Google Pay.

However, a key drawback of using payment gateways in Africa is the transaction fee applied to credit card payments, typically charged as a percentage of the total amount. This model represents a common approach to online payments in the region (Paystack, 2025; Flutterwave, 2025; MyFatoorah, 2025).

- **Payment by Instalments**

“I Want to Pay Small Small” is a payment solution provided by Kalabash to online retailers and airlines. It allows customers to pay for airline tickets in installments rather than paying the full amount upfront. For each booking, Kalabash charges a percentage-based fee. This solution benefits passengers who either lack the funds to pay in full or

prefer to spread the cost over time. It serves as an example of installment-based payment options in the travel industry (Kalabash, 2025).

- **Bank Transfer**

A bank that allows customers to make payments using the bank transfer method. After completing the ticketing process, customers are provided with a booking code and a bank account number to which they are asked to transfer the money. They include the booking code for the bank to link the money transfer to the payment; once confirmed, the booking is complete. This service is highly in demand in Africa and the Middle East due to the limited availability of credit cards. For Example, Al Baraka Bank in the Middle East and Fidelity Bank in Africa provide this service. This is an example of payment by bank transfer.

- **Payment at Point of Sale**

Fawry is a payment method that offers the customer to make their payment in cash at sale points like super markets or shops after creating their booking on the airlines website, the customer would create their booking and select Fawry as their payment method, then they are provided with a PNR and a payment reference code, the customer can pay for their ticket to complete their booking at the nearest payment point that could be a market or a shop. This is an example of payment at a POS (Fawry, 2025).

- **Mobile Money**

It is a payment service that utilizes mobile carrier credit to facilitate payments by sending a confirmation message via SMS. The customer will receive an SMS message that prompts them to send the message "CONFIRM". The price of the ticket will be credited from the customer's mobile carrier credit to complete the payment. For example, Vodacom's M-PESA service. This is an example of a payment made via SMS (VodaPhone, 2025).

- **Payment with E-Wallet**

E-wallets such as WeChat Pay, PayPal, Apple Pay, and Samsung Pay serve as popular online payment methods, also widely adopted by airlines. After completing the booking process, customers are redirected to a secure payment page, where they can finalize their transactions directly through their mobile e-wallets.

2.8. Research Model

This thesis investigates the various factors that influence consumer decisions when purchasing tickets online and why consumers prefer one medium over another. The proposed research model includes five independent variables and one dependent variable.

The model predicts that while perceived usefulness positively affects purchase intention, the four risk factors, general risk, privacy risk, time risk, and social risk, have a negative impact on purchase intention.

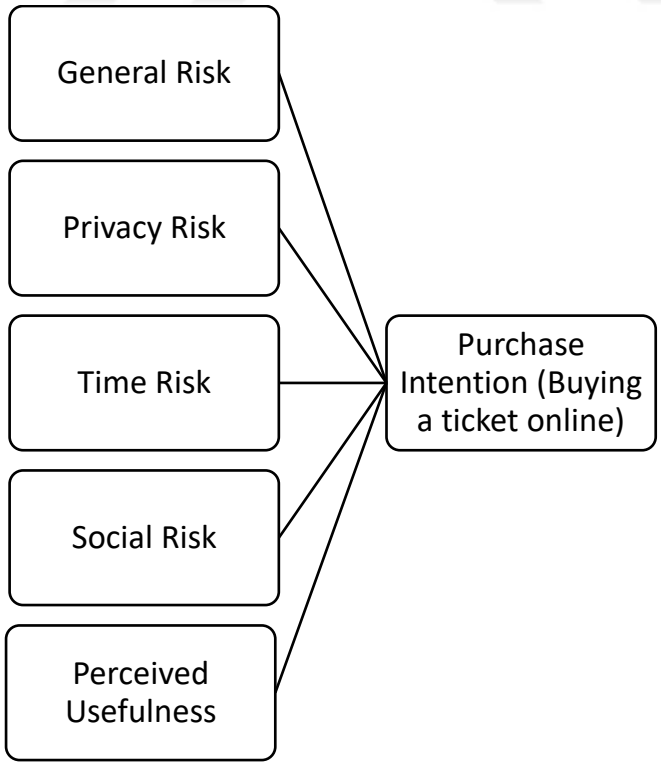


Figure 2.6. Research Figure

2.8.1. Independent Variables

Perceived usefulness refers to the degree to which a user believes that using a particular technology for online ticket purchasing is beneficial—such as being faster, safer, or more convenient (Davis, 1989). In addition to this factor, four types of perceived risk will be examined: general risk, privacy risk, social risk, and time risk. Each of these risk categories will be measured through multiple survey items to determine which type of risk has the most significant impact on the user's decision when choosing a ticketing channel (Zhang, Tan, Xu, & Tan, 2011).

2.8.2. Dependent Variable

The dependent variable will be "purchase intention", according to Fishbein and Ajzen (1975) purchase intention is the likelihood or willingness of a consumer to purchase a product based on their knowledge, attitude and perception of the product.

2.8.3. Hypotheses

H_1: Age has a significant impact on the consumer's intent to purchase a ticket online.
H_2: Gender has an impact on the consumer's intent to purchase a ticket online.
H_3: Social risk has an impact on the consumer's intent to purchase a ticket online.
H_4: Time risk affects consumer's intent to purchase a ticket online.
H_5: Psychological risk has an impact on the consumer's intent to purchase a ticket online.
H_6: The General perceived risk of online shopping affects the consumer's intent to purchase a ticket online.
H_7: Consumers consider purchasing tickets online as a helpful method.
H_8: Having multiple payment options increases consumers' intent to purchase a ticket online.

2.8.4. Data Collection

Data will be collected through a survey consisting of 35 questions. The first eight questions will focus on gathering demographic information, at the same time, remaining 27 will employ a Likert scale (ranging from 1 = strongly agree to 7 =

strongly disagree) to assess various constructs relevant to the study. Specifically, the survey will include eight questions related to general risk, along with additional questions addressing privacy risk, social risk, time risk, and perceived usefulness. The target population for this survey includes individuals who have prior experience with online travel or ticket booking, ensuring that respondents are familiar with the context being examined.

2.8.5. Data Analysis

Descriptive analysis will be employed to understand the sample profile, providing an overview of the respondents' characteristics. The Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test of Sphericity will be conducted to assess the adequacy and significance of the data for further analysis. Factor analysis will then be applied to divide the data into distinct components or factors. One-way ANOVA will be used to evaluate the significance of demographic variables in relation to the data collected. Finally, linear regression analysis will be performed to examine the impact and significance of the independent variables on the dependent variable.

CHAPTER III

METHODOLOGY AND RESULTS

3.1. Methodology

This thesis employs both qualitative and quantitative methodologies, combining a comprehensive Literature Review and a structured survey. The objective of this research is to investigate the factors influencing consumer behavior and decision-making in online airline ticket purchasing, with several hypotheses built upon this objective. The survey consisted of 27 questions divided into three main sections. The first section obtained the surveyor's consent to participate in the survey, and the surveyor was informed that the survey would be conducted entirely anonymously. The second section covered demographics, including age, gender, and region. The third section included questions related to perceived risk and perceived usefulness. In the 3rd section, all questions followed a Likert scale ranging from 1 to 7, where 1 indicated 'strongly disagree' and 7 indicated 'strongly agree'. A self-administered survey was designed using **Likert-scale questions** to measure participants' attitudes, perceptions, and behavioral intentions. This scale enables the capture of degrees of agreement or disagreement, providing nuanced insights into consumer sentiment and facilitating robust statistical analysis. The structured survey approach ensures consistency and comparability across responses, while the literature review provided the basis for identifying relevant constructs and developing hypotheses. The survey questions are based on the TAM to measure the perceived usefulness and perceived risk of consumers in 2025. Together, these components offer a solid foundation for testing relationships between key variables and drawing conclusions that are both theoretically informed and data driven.

Descriptive analytics is employed to analyze demographics, where this type of analysis is based on interpretations built from historical data collected to understand fluctuations or event occurrences in a business. It utilizes a range of different types of

data, including both quantitative and qualitative, reported over time within the same industry, while keeping one variable constant. This type of analysis is used by decision-makers and strategy identifiers in the business to identify the areas of strength and weakness within an organization and highlight the threats that it may face based on previous cases. Managers, investors, and other stakeholders rely on descriptive analysis to draw conclusions and evaluate past performance, thereby differentiating the upcoming actions to be taken into consideration (Wolniak, 2023).

After the data were collected, a factor analysis was performed on those questions to identify underlying components and assess whether any items should be excluded due to low factor loadings. The dependent variable is the extent of intention to buy online airline tickets. This method enabled the grouping of interrelated survey items into coherent components, representing latent variables such as **perceived usefulness** and **risk perception**. Before conducting factor extraction, the dataset was evaluated for suitability. The **Kaiser-Meyer-Olkin (KMO) measure** of sampling adequacy exceeded the acceptable threshold of 0.6, indicating that the data were appropriate for factor analysis. Additionally, **Bartlett's Test of Sphericity** was significant ($p < 0.05$), confirming that the correlation matrix was not an identity matrix and thus suitable for identifying underlying factors (Sigudla & Jeanette, 2023).

A regression analysis was conducted to determine which factors are significant in affecting the consumer's decision and which factors are insignificant—the dependent variable, namely the intention to purchase airline tickets online, which is Q27. The independent variables included factors such as perceived usefulness, marketing influence, perceived risk, and trust. By examining the regression coefficients and their corresponding significance levels (p-values), the analysis revealed which variables had a statistically significant effect on consumer behavior and which ones did not. This approach provided a clear indication of the relative strength and direction (positive or negative) of each factor's influence, enabling the study to conclude the most critical drivers of online purchase intention in the airline industry. Through linear regression analysis, we can identify the relationship between 2 variables (Blokhin, 2025).

One-way ANOVA was used to compare demographics and consumers' decisions regarding whether they would purchase a ticket online or not. Additionally, crosstab

analysis was conducted to identify patterns in choices based on demographic variables. The findings contributed to testing the proposed hypotheses and identifying actionable insights for marketing and user-experience strategies.

To understand how different demographic groups make consumer choices, a one-way ANOVA was carried out. This analysis allowed for the examination of mean differences in the intention to purchase tickets online by age, gender, income level, and educational background. The use of ANOVA was particularly helpful in identifying and assessing whether specific demographics were more likely to purchase airline tickets online. Alongside this, crosstab (crosstab) analysis was performed to evaluate the interconnectedness of demographic variables like gender or occupation with consumers' choices. This technique enhanced the understanding of user behavior by showcasing trends and relationships among different groups. Together, these analyses facilitated hypothesis testing and provided valuable insights into the influence of demographic characteristics on online purchasing behaviors, thereby supporting targeted marketing and UX design within the airline e-commerce industry (Kenton, 2025).

3.2. Descriptive Statistics

Descriptive analysis is used to understand the variety in the data according to demographics, which will later be used for the ANOVA analysis. The frequency and percentage explain how many surveyors fit into each group and what percentage of the total sample is represented by each group.

Table 3.1. Age Distribution

	Frequency	Percent
18-24	57	27.5
25-34	85	41.1
35-45	36	17.4
46 or above	29	14
Total	207	100

Out of the N=207 sample, 41.1% of the surveyors were between the ages of 25 and 34, and 31.4% were above the age of 35. This indicates that the majority of surveyors are young and open to using technology, compared to older age groups, which represent only 31.4% of the sample.

Table 3.2. Gender Distribution

	Frequency	Percent
Female	117	56.5
Male	90	43.5
Total	207	100

The research sample was predominantly female, with 56.5% of the survey respondents being women. The sample consists of 43.5% males. This could be explained by the fact that more females received the survey, or that females are more willing to answer surveys compared to males.

Table 3.3. Owning a Credit/Debit Card

	Frequency	Percent
No	12	5.8
Yes	195	94.2
Total	207	100

94.2% of the surveyors owned a credit or debit card that they could use for online purchases. This illustrates the widespread availability of credit cards that can be used for online shopping.

Table 3.4. Region Distribution

	Frequency	Percent
Africa	19	9.2
Americas	12	5.8
Asia	43	20.8
Europe	39	18.8
Middle east	94	45.4
Total	207	100

Almost half of the surveyors (45.4%) were from the Middle East; therefore, the survey reflects the preferences and habits of the Middle East region. Asia and Europe demonstrate sample diversification, collectively accounting for up to 39.6% of the Sample. The survey originated in the Middle East, which explains why the majority of the sample was from this region.

Table 3.5. Preferred Shopping Medium for Airline Tickets

	Frequency	Percent
Online (Airline Website/Mobile App, Online travel agencies)	184	88.9
Traditional (Travel Agencies, Airline offices, Call Centers)	23	11.1
Total	207	100

The majority of the surveyors, 88.9%, prefer using online shopping mediums compared to traditional ticket sale mediums, supporting the availability and readiness of user-friendly online facilities.

Table 3.6. Does the Payment Method Affect Your Decision

	Frequency	Percent
Maybe	64	30.9
No	53	25.6
Yes	90	43.5
Total	207	100

A significant percentage of surveyors' payment method decisions indicates that the payment method affects 43.5% of the surveyors, while 30.9% are tentative, and 25.6% are not impacted by the payment method.

Table 3.7. Which one of the Following Would Be Your Preferred Payment Method

	Frequency	Percent
Book on Hold (confirm your booking and then pay through wire transfer to a provided bank account)	16	7.7
Book on Hold (get a receipt number and pay through a third-party vendor at the market with cash or card)	12	5.8
Credit card/debit card payment through a payment gateway	179	86.5
Total	207	100

86.5% would prefer to pay through a payment gateway with their credit cards rather than using a book-on-hold method with wire transfer or paying through a third-party vendor with cash.

3.3. Factor Analysis

To divide the Likert scale questions into separate components, factor analysis was used, and the results are as follows:

Table 3.8. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.884
Bartlett's Test of Sphericity	Approx. Chi-Square	5163.116
	df	351
	Sig.	0

As per table 3.8, the following can be interpreted:

KMO Measure of Sampling Adequacy = 0.884; it is well-suited for factor analysis, hence it is considered to have excellent sampling adequacy.

Bartlett's test examines whether the correlation matrix is an identity matrix (no relationships among variables). Based on the significance value (p = 0.000), we reject the null hypothesis of independence. This shows the variables are correlated enough to justify factor analysis.

Table 3.9. Rotated Component Matrix

	1	2	3	4	5
Q_13	0.783				
Q_14	0.774				
Q_15	0.772				
Q_21	0.761				
Q_3	0.746				
Q_5	0.732				
Q_4	0.646				
Q_2	0.615				
Q_20	0.602		0.546		
Q_6	0.556			0.555	
Q_23		0.926			
Q_22		0.925			
Q_25		0.914			
Q_24		0.903			
Q_26		0.576			
Q_16			0.896		
Q_18			0.875		
Q_17			0.845		
Q_19			0.533		
Q_8				0.794	
Q_9				0.774	
Q_7				0.695	
Q_11					0.821
Q_10					0.785
Q_12					0.623

The approach applied, based on the questions and the table above, involves grouping survey items into five key factors. Factor 1, general risk, includes questions Q_13, Q_14, Q_15, Q_21, Q_2, Q_3, Q_4, and Q_5. Factor 2, perceived usefulness, comprises Q_22, Q_23, Q_24, Q_25, and Q_26. Factor 3, privacy risk, is represented by Q_16, Q_17, Q_18, and Q_19. Factor 4, social risk, includes Q_7, Q_8, and Q_9, while Factor 5, time risk, covers Q_10, Q_11, and Q_12. The dependent variable in the analysis will be Q_27. Questions Q_1, Q_6, and Q_20 will be excluded from the final model.

3.4. One-Way ANOVA Test

Table 3.10. Significance of Age on Online Ticket Purchasing

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.837	6	0.306	0.305	0.934
Within Groups	200.549	200	1.003		
Total	202.386	206			

Based on the P-value (0.934 > 0.05), there is no significant difference between the different age groups.

Table 3.11. Significance Gender on Online Ticket Purchasing

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.472	6	0.245	0.993	0.431
Within Groups	49.398	200	0.247		
Total	50.87	206			

Based on the P-value (0.431> 0.05), there is no significant difference across the different gender groups.

Table 3.12. Significance Region on Online Ticket Purchasing

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	35.583	6	5.93	3.753	0.001
Within Groups	316.069	200	1.58		
Total	351.652	206			

Based on the P-value: 0.001 < 0.05 indicates that there is a significant difference across different surveyors' regions; hence, region does influence consumers' behavior.

Table 3.13. Preferred Shopping Medium for Airline Tickets

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.985	6	0.331	3.584	0.002
Within Groups	18.46	200	0.092		
Total	20.444	206			

Based on the P-value, 0.002 < 0.05 indicates that there is a significant difference in shopping preferences across different groups, which affects their attitude and behaviour.

Table 3.14. Does the Payment Method Affect Your Decision

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9.253	6	1.542	2.18	0.046
Within Groups	141.481	200	0.707		
Total	150.734	206			

Based on the P-value (0.046 < 0.05), there is a significant difference across payment methods that influences purchase decision-making for at least one group.

- **Summary Table**

These findings confirm alternative hypotheses H_7, H_8, and H_9, indicating that regional background, shopping behavior, and payment preferences have a significant influence on consumer choice.

3.5. Linear Regression

Table 3.15. Multiple Linear Regression

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.607	0.519		6.949	0
General Risk	-0.019	0.118	-0.016	-0.16	0.873
Perceived Usefulness	0.458	0.077	0.397	5.927	0.000
Privacy Risk	-0.016	0.084	-0.015	-0.184	0.854
Social Risk	-0.25	0.109	-0.187	-2.297	0.023
Time Risk	-0.014	0.093	-0.012	-0.153	0.878

3.5.1. Perceived Usefulness

With a t-value of 5.927 and a p-value of .000, this variable is highly statistically significant and predicts buying online tickets (Q27). A considerably high t-value indicates the presence of strong predictive power, and the p-value, significantly lower than 0.001, verifies, with confidence, that the outcome is not the result of random fluctuations. This means that consumers have positive perceptions of the service or platform as useful, practical, or are more confident in using the internet in the future for such purchases. In practical terms, improving perceived usefulness, such as ease of use, added value, or convenience, will strongly encourage consumer adoption.

3.5.2. Social Risk

This factor has a t-value of -2.297 and a p-value of 0.023, indicating statistical significance ($p < 0.05$).

Due to consumers' negative social perception of the service, the t-value shifts, and their intent or acceptance of the service decreases.

While incorporating social norms, this highlights that socially centered image risks may keep specific consumers, which may be relevant in cases where social scrutiny is heavily dominant.

3.5.3. General Risk, Privacy Risk, and Time Risk

These three predictors all have very low t-values (ranging from -0.153 to 0.184) and high p-values (all above 0.85), which means they are not statistically significant.

3.6. Hypothesis Results

All surveys were answered anonymously to ensure the secrecy of the surveyors. Data was collected from different regions the sample size collected was N = 207, Out of the N=207, 41% were within the age range of 25-34, 27.5% were within the age range of 19-24, 17.4% between the age range of 35-45 and 14% were 46 or above. The survey consisted of 56.5% females and 43.5% males. 45.4% were from the Middle East, 20.8% from Asia, 18.8% from Europe, 9.2% from Africa, and 5.8% from America. 94.2% of the surveyors own a debit/credit card. Majority of 88.9% of the surveyors preferred to shop online for their online tickets compared to 11.1% that preferred using traditional sales channels like call centers or airline offices.43.5% said that having multiple payment methods would affect their decision of whether they would buy the ticket online or not, 30.9% were tentative and 25.6% said it would not affect their decision. 86.5% of the surveyors prefer to use online payments with their credit cards, and 7.7% prefer to pay through a wire transfer.

The hypotheses that are answered by this thesis are:

H_1: Age has a significant impact on the consumer's intent to purchase a ticket online.

The hypothesis is **rejected** based on the P-value: 0.934 > 0.05, as shown in Table 3.5.1, indicating that there is no significant difference across different age groups and that it has no impact on the consumer's choice.

H_2: Gender has an impact on the consumer's intent to purchase a ticket online.

The hypothesis is **rejected** based on the P-value: 0.431 > 0.05, as indicated in Table 3.5.2. This suggests that there is no significant difference across different gender groups.

H_3: Social risk has an impact on the consumer's intent to purchase a ticket online.

The hypothesis is **accepted**, as evident in the linear regression analysis, where social risk is significant at 0.023. The large negative T-value indicates a negative impact on the outcome, suggesting that social risk can have a substantial negative effect on the consumer's decision to buy a ticket online.

H_4: Time risk has an impact on the consumer's intent to purchase a ticket online.

The hypothesis is **rejected**, as the P-value is 0.878, which is greater than 0.05; hence, it is insignificant and has no impact on the decision-making process. This can be explained by the fact that consumers do not perceive purchasing a ticket online as a waste of time, as long as the shopping medium is perceived as applicable.

H_5: Psychological risk has an impact on the consumer's intent to purchase a ticket online.

The hypothesis has been **rejected**. Within the factor analysis, the questions related to psychological risk were included with the General risk factor. As the P-value in the regression analysis table (3.6.1) is 0.873, which is greater than 0.05, the risk is

insignificant. This can be explained by the fact that psychological risk has no impact on the consumer's choice during online shopping.

H_6: The General perceived risk of online shopping affects the consumer's intent to purchase a ticket online.

The hypothesis is **rejected** because the P-value for general risk in the regression analysis in Table 3.6.1 is 0.837, which is greater than 0.05. This indicates that general risk is an insignificant factor and does not affect the consumer's choice.

H_7: Consumers consider purchasing tickets online as a useful method.

The hypothesis is **accepted**. Based on the linear regression analysis in Table 3.6.1, the P-value of perceived usefulness is 0.000 < 0.001, indicating a strong positive effect on online purchase behavior and proving perceived usefulness as a key driver in consumers' decisions when buying tickets online.

H_8: Having multiple payment options increases consumers' intention to buy online.

The hypothesis is accepted; according to the ANOVA analysis performed in Table 3.5.5, payment methods have a significance of 0.046 < 0.05. This suggests that the availability of multiple payment methods will indeed impact consumers' purchasing decisions. When consumers are offered different payment mediums, it becomes more convenient and increases flexibility in the successful completion of the purchasing process.

This research confirms that perceived usefulness, social risk, and payment flexibility are the top influential factors affecting consumers' decisions to purchase airline tickets online. Specifically, the perception that online booking is helpful, efficient, and timesaving significantly increases consumers' intent to use such platforms.

Regression analysis showed that social risk had a statistically significant negative impact on the purchasing intent due to high significance and a high negative t-value.

It can be concluded that social judgment can impact human behavior even at a subconscious level, and if social risk increases, the willingness to use online shopping could decrease. On the other hand, the intention to purchase tickets online increased with the availability of multiple payment options, which indicates increased consumer trust and confidence in financial security.

Age and gender, alongside general risk, privacy risk, and time-related concerns, are in contrast to the previously mentioned factors, as they have no statistically significant impact on consumers' choices. This indicates that consumers, even those belonging to a particular age group or other demographic divide, are concerned about utility derived and social perception when making purchases online, regardless of demographic differences or generalized fears such as privacy or time-related concerns. Consumers primarily focus on functionality and social reassurance when engaging in online ticket purchases.

Support for the alternative hypotheses stems from the assumptions of H_3, H_7, and H_8, which suggest that social risk matters, perceived usefulness is impactful, and increased payment flexibility enhances intention, respectively. Thus, for optimal results, travel platforms need to adopt simplified interfaces that allow for easy navigation, enhancing consumer engagement, while ensuring reliable payment methods to address essential psychological, credibility, and functional stimuli. Marketers can build consumer trust and encourage adoption of online booking solutions by redirecting focus to an altered digital booking environment.

3.7. Implications

3.7.1. Geographical Customer Persona Building

According to the ANOVA test performed, region does affect customer behavior. Hence, it suggests that for optimized outcomes, airline platforms and travel agencies should tailor their platforms to fit regional preferences. Additionally, adopt payment methods that align with the needs and availability of local users in that geographical area.

3.7.2. Payment Strategies by Region

Additionally, the payment method itself ($p = 0.046$) and preferred shopping medium ($p = 0.002$) significantly impact consumer behavior, so it is critical to allow a variety of payment methods, such as credit cards or third-party vendors, in certain regions, like African regions, to facilitate the purchase process. Gaining the trust of potential consumers is achieved through educating them on the safety measures taken to ensure the security of shopping mediums, facilitating the completion of the purchase process, and increasing conversion rates.

3.7.3. Strong Perceived Usefulness of Online Ticket Shopping

The results of the linear regression analysis demonstrated that "Perceived Usefulness" was the most significant variable in buying online tickets ($\beta = 0.397$, $p < 0.001$). Therefore, the focus shall be on creating user-friendly interfaces that will attain flexibility in usage and service access. This achieves customer satisfaction and ensures time efficiency, ease of cost comparison, and online browsing.

3.7.4. Revisiting Traditional Risk Dimensions

Due to the insignificance in the linear regression results for general risk, privacy risk, and time risk, this indicates that users are adapting to online advancements more quickly than expected. Nevertheless, this differs with demographics.

Suggestions for Further Research and Improvement.

To extend and enhance this thesis, several steps can be taken. Conducting geographic-specific surveys will allow for independent analysis of consumer behavior in each region, helping to better identify cultural, economic, and behavioral drivers. Increasing the sample size and ensuring greater diversity among respondents will provide more balanced and comprehensive insights. Additionally, segmenting participants based on socio-economic status, including income and education levels, is important as these factors influence decision-making. Finally, extending the study timeframe to include a longitudinal approach will help capture behavioral changes over time and reveal evolving trends in digital purchase behavior.

CHAPTER IV

CONCLUSION

This thesis aimed to identify the factors that affect the consumer's decision-making in choosing online ticket sales over other channels, such as indirect channels like GDSs and direct channels such as airport offices, city offices, travel agencies, and airlines' call centers. The thesis provided a comprehensive analysis of the technology acceptance model (TAM) and factors that affect consumers decision such as perceived usefulness and perceived risks, examples of perceived risks were time risks which highlighted how consumer perceived the time risk of shopping online whether the consumer perceived it as a waste of time or was it saving time by purchasing online tickets rather than going to the airline office or to a travel agents office and then wait and book their ticket or compared to calling an airlines call center and wait to be able to confirm their ticket and then make a payment, perceived risk also included security risk which highlighted a consumers concern of loosing their personal information due to lack of security while shopping online compared to the traditional methods where they would be providing their personal information to a travel agent or a airline employee moreover if they would be booking through a call center they would need to provide their credit card details verbally rather than entering them into a secure payment service, psychological risk is another factor that was highlighted and how shopping online could affect the consumer psychology, if it would put any mental stress like anxiousness or uncertainty while booking a ticket online, those factors could be linked to the idea of whether buying the ticket online could be a scam or they would not receive the ticket benefits that they were promised or the possibility of a refund or reissue of the ticket. Lastly, social risk highlights how a consumer's decision can be influenced by their perception within their social circles when purchasing a ticket online. This consideration suggests that the consumer may care about how their family and friends judge or perceive them if they make such a decision.

The thesis also discussed the global demand for online shopping in 2024 compared to the years before, where the research shows that China leads the online shopping market in volume with 1.1 billion shoppers per year, but that only accounted for 77% of their population, on the other hand United States has a 93% penetration rate with the online shopping with 300 million online shoppers. Reviewing this data reveals that the world is increasingly focusing on online shopping in both developed and developing countries, driven by the convenience of online shopping and the growing emphasis on user data security, as reflected in new regulations and laws. Moreover, the focus on providing flexible and secure payment options by different service providers has significantly increased consumer trust in online shopping. The thesis also discussed the importance of online payment services and their impact on online shopping. The research proves that now more than ever, there is a rise in online payment options that provide various services, including payment gateways, Book on Hold, Payment by instalments, Payment by bank transfer, payment at a point of sale, and payment by mobile SMS. Those different payment options support various markets according to their specific needs, such as in Africa. In the Middle East, limited access to credit cards—often due to high fees and low incomes—makes alternative payment methods, such as POS payments, SMS payments, and installment plans, essential for encouraging consumers to choose online shopping over traditional methods. Payment service providers focus on delivering secure and convenient services to attract more customers. They also support online businesses, including airlines, by offering analysis tools and dashboards that help companies monitor revenues and cash flows, enabling them to make better-informed decisions and enhance the customer experience.

In this thesis, a survey was conducted to analyze consumers' decision-making behavior in relation to the Technology Acceptance Model. Questions were designed to target specific factors, including perceived risk and perceived usefulness, to understand which factors are most influential on the consumer's decision. Another section was used to analyze the demographics to understand how different demographics are affected by the same set of questions. Accordingly, factor analysis was employed to separate the questions into their respective components. As seen in Table 3.4.2, the analysis concluded five components, which were divided into general risk, privacy risk, time risk, social risk, and perceived usefulness. A linear regression analysis was conducted to determine the significant factors. The t-value measures the strength of

the relationship between each independent variable and the dependent variable. At the same time, the p-value indicates the probability of observing a test statistic as extreme as the one computed, assuming that the null hypothesis is true. With a t-value of 5.927 and a p-value of .000, this variable is highly statistically significant. It predicts buying online tickets (Q27). A considerably high t-value indicates the presence of strong predictive power, and the p-value, significantly lower than 0.001, provides confidence that the outcome is not the result of random fluctuations. This means that consumers have positive perceptions of the service or platform as useful, practical, or are more confident in using the internet in the future for such purchases. In practical terms, improving perceived usefulness, such as ease of use, added value, or convenience, will strongly encourage consumer adoption.

On the other hand, the social risk factor has a t-value of -2.297 and a p-value of 0.023, indicating statistical significance ($p < 0.05$). This underscores the influence of social norms on online shopping decisions. Due to consumers' negative social perception of the service, the t-value shifts, and their intent or acceptance of the service decreases. This is a crucial insight, as it highlights that socially centered image risks may deter specific consumers, particularly in cases where social scrutiny is heavily dominant.

Descriptive analytics and one-Anova were used to analyze the demographics and to analyze the consumers choice to buy online against demographics, the thesis concludes that age and gender are not significant factors that affect the choice of purchasing a ticket online, on the other hand factors like the choice of multiple payment options and region were highly significant, the choice of having multiple payment options had a P-Value of $0.046 < 0.05$ which means it is highly significant, this can be interpreted as airlines that provide multiple payment options to their passengers have a higher chance of selling tickets online, it can also be interpreted as, if airlines provide multiple payment options to the passenger the perceived usefulness of the service increases in the perspective of the passenger hence opting for purchasing tickets online, for the regions significance which is P-Value 0.02, it can be interpreted that depending on the region the choice of purchasing online is highly affected, this can be related to countries GDP, literacy rates and access to online banking options, this also supports the analysis that payment options have a significant effect on the decision making process. For countries with lower GDP, an installment payment option can attract a

new segment to purchase tickets online. For countries with limited access to online banking, they can use POS payment, where they choose their booking online but confirm it at a point of sale, such as a supermarket or an ATM.

With that being said, and despite the depth of the findings, certain limitations need to be acknowledged regarding this study. While the sample size is sufficient for this thesis, a bigger sample size could provide more insight into consumer behavior and the decision-making process. A more in-depth study into how the significant demographics affect the decision-making process, such as how different regions perceive online shopping and what practices would encourage online shopping and buying tickets online for that specific region, and an even more in-depth study into every country would help airlines better understand their market and how to attract customers accordingly. Payment options also need to be studied separately by region to understand which payment options are more suitable in each region and which payment options are more likely to be successful compared to others.

Nonetheless, the findings of this thesis on consumer decision-making to buy airline tickets online provide a valuable academic contribution and pave the way for further research into consumers' behavior in the airline industry. Future research could build upon this foundation by expanding the demographic and geographic diversity of the study.

Some recommendations to the airlines and software providers that were mentioned earlier in the thesis introduction like Amadeus and Sabre, they need to focus on building user-friendly websites that are easy to use and understand for the basic user, websites need to be simple but informative, it needs to explain to the passenger what they are getting with each ticket purchase and what are their ticket rights in terms of ticket change and refunds, it needs to be explained in simple words that the basic user can understand. They also need to focus on integrating with more payment service providers and share feedback to improve the services.

In conclusion, the airline industry is becoming increasingly linked to technological advancements. Airlines and software providers must keep pace with technological

advancements, whether by utilizing AI or leveraging the rapidly evolving physical technology, and recognize the impact of online shopping on consumer behavior.

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APPENDICES

APPENDIX A

SURVEY QUESTIONS

Survey questions:

Section 1.

Q1. I want to participate / I don't want to participate

- I want to participate
- I don't want to participate

Section 2.

Demographics

Q2. Age

- 18-24
- 25-34
- 35-45
- 46 or above

Q3. Gender

- Male
- Female

Q4. Region

- Africa
- Americas
- Asia
- Europe
- Middle East

Q5. Do you own a Credit Card/Debit Card?

- Yes
- No

Q6. Preferred shopping medium for Airline Tickets

- Online (Airline Website/Mobile App, Online travel agencies)

- Traditional (Travel Agencies, Airline offices, Call Centers)

Q7. Does the payment method affect your decision

- Yes
- No
- Maybe

Q8. Which one of the following would be your preferred payment method

- Credit Card/Debit card payment through a payment gateway
- Book on Hold (confirm your booking and then pay through wire transfer to a provided bank account)
- Book on Hold (get a receipt number and pay though a third-party vendor at the market with cash or card)

Section 3.

All questions will follow a scale 1-7 starting with 1 as strongly disagree and 7 strongly agree.

Performance Risk

Q1. I would be worried that the ticket purchased was not worth the price.

Q2. I would be worried about paying with my credit card.

Q3. I would think it was highly likely I wouldn't receive the ticket.

Q4. It would be difficult to find out about the flight characteristics. (time schedule, plane characteristics, …)

Q5. I would be worried that the ticket didn't provide the flight advantages listed on the website.

Q6. It would be highly likely that the ticket was no use.

Social Risk.

Q7. It would worsen my image with friends and family.

Q8. Some people whose opinion I value would think I didn't act correctly.

Q9. My friends or relations would think I am imprudent.

Risk of wasting time.

Q10. I would be concerned about wasting too much time making the purchase

Q11. There would be a high probability of wasting time looking for the correct flight.

Q12. I would be worried that too much time would go by before I received the ticket.

Psychological Risk.

Q13. I would feel uncomfortable

Q14. I would feel anxious

Q15. I would experience unnecessary stress

Privacy Risk.

Q16. I would feel that my personal information could be used without my consent.

Q17. I would feel I would receive a lot of spam in the future.

Q18. I would feel my personal data would be unproperly used.

General Risk.

Q19. I would feel anything could go wrong during the purchase.

Q20. I would feel the purchase could not meet my expectations.

Q21. I would feel it could be risky.

Perceived usefulness.

Q22. Would make the purchase of airline tickets easier.

Q23. Would help me to purchase more quickly.

Q24. Would be useful for my airline ticket purchases.

Q25. Would help me to shop more efficiently.

Intention to buy online.

Q26. Does having multiple payment options increase your intentions in buying a ticket online.

Intends to use Internet in the future to buy airline tickets

Q27. 1 = I am completely sure I won't do it to 7 = I am completely sure I will do it

APPENDIX B

ETHICS COMMITTEE PERMISSION

Evrak Tarih ve Sayısı: 08.04.2025-55868

T.C.
İBN HALDUN ÜNİVERSİTESİ
Sosyal ve Beşeri Bilimler Bilimsel Araştırma ve Yayın Etiği
Kurulu Başkanlığı

2025 AİLE YILI

Sayı : E-71395021-050.04-55868 08.04.2025
Konu : Etik Kurul Kararı - Tarek HAMMOUD

İLGİLİ MAKAMA

Kurulumuza başvuran Tarek HAMMOUD'un, "Analysis of Consumer Decision-Making on Using Different Airline Ticketing Channels" isimli projesi; amaç, araştırma türü, veri toplama araçları, süreç ve işlemler, veri analizleri dikkate alınmak suretiyle 14.03.2025 tarihinde değerlendirilerek 2025/04-04 karar numarası ile etik açıdan uygun bulunmaktadır.

Bilgilerini ve gereğini arz/rica ederim.

Prof. Dr. Alev ERKİLET
Başkan

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